

## Healthy Employees and Service Quality in the Healthcare Sector

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**Título:** Empleados saludables y calidad de servicio en el sector sanitario

**Resumen:** En este estudio se analiza el papel mediador de los afectos positivos y el engagement en el trabajo entre creencias de eficacia y calidad de servicio (desempeño, compromiso, calidad percibida) en el personal sanitario ( $N = 154$ ) de un hospital de la Comunidad Valenciana. Basado en el Modelo de Organizaciones Saludables y Resilientes (HERO) (Salanova, Llorens, Cifre, y Martínez, 2012) análisis de ecuaciones estructurales y bootstrapping revelan que el afecto positivo y el engagement en el trabajo media entre las creencias de eficacia y la calidad de servicio. Concretamente, aquellos empleados con mayores creencias de eficacia, presentan mayor afecto positivo y más engagement en el trabajo que a su vez, se relaciona positivamente con mayor calidad de servicio.

**Palabras clave:** Eficacia; afecto positivo; engagement; calidad de servicio; hospitales.

**Abstract:** In this case study, we analyze the mediating role of positive affects and work engagement among efficacy beliefs and service quality (performance, commitment, perceived quality) of health professionals ( $N = 154$ ) from a hospital in Valencia. Based on Healthy & Resilient Organizations Model (HERO; Salanova, Llorens, Cifre, & Martínez, 2012), structural equations and bootstrapping analysis revealed that positive affect and work engagement mediates between the efficacy beliefs and service quality. Specifically, those employees with high efficacy beliefs, showed high positive affect and more work engagement, which in turn was positively related to higher service quality.

**Key words:** Efficacy beliefs; positive affect; engagement; service quality; hospitals.

### Introduction

Work engagement is a key construct in scientific research today. It is defined as a positive affective-motivational and psychological state related to work that is characterized by vigor, dedication, and absorption (Schaufeli & Salanova, 2009). The concept, measurement, and even intervention on engagement have been studied in different occupations. However, studies are more limited when the focus is on healthcare. In this setting, the study of engagement is even more important because the more engaged workers are, the better the quality of the service they offer patients will be (Liao, Toya, Lepak, & Hong, 2009). With the aim of gaining further knowledge in this field, the purpose of this study is to analyze the antecedents (i.e., personal resources in terms of self-efficacy beliefs and positive affect) and consequences (i.e., service quality) of work engagement in the healthcare sector on the basis of the HERO Model (HEalthy & Resilient Organization Model; Salanova, Llorens et al., 2012). Specifically, this study focuses on how efficacy beliefs are related to service quality through the impact of positive affect and engagement of healthcare professionals.

### Theoretical model: The HERO Model

The HERO Model (Salanova, Llorens et al., 2012) is a heuristic model that considers the development of healthy and resilient organizations to be a key factor (Wilson, Dejoy, Vandenberg, Richardson, & McGrath, 2004). These organizations are resilient in the face of economic and financial crises and emerge stronger from them (Cooper & Cartwright, 1994). Although the concept of resilience has been used mainly with reference to people (Ablett & Jones, 2007),

it may also be applied to organizations. Resilient organizations are able to create work environments that contribute to organizational productivity, and improve the psychological and physical health of their workers (Harland, Harrison, Jones, & Reiter-Palmon, 2005; Laschinger, 2010). Specifically in the setting we are dealing with here, a healthy and resilient healthcare organization would be one that strives to ensure the quality of the working life of its employees, as well as to survive and thrive in the context of economic and social change; in other words we are talking about those which are able to create work environments that can help improve the practice and health of healthcare professionals, and enhance the service quality provided to the patient/family (Matos, Neushotz, Griffin, & Fitzpatrick, 2010; McAllister & Lowe, 2011; Salanova, Rodríguez-Sánchez, Del Libano, & Ventura, 2012). Broadly speaking, Salanova (2008) defined HEROs as organizations that make systematic, planned, and proactive efforts to improve the health of their employees and the organization itself through healthy organizational practices that relate to the improvement of job characteristics at three levels: (1) task level (e.g., task redesign to improve autonomy, *feedback*); (2) social environment level (e.g., leadership); and (3) organizational level (e.g., organizational strategies for improving health, and work-family balance).

The theoretical premises of the HERO Model propose that a healthy and resilient organization is one that integrates three interrelated key components that interact positively. These elements are: (1) healthy organizational resources and practices (e.g., social support, healthy organizational strategies), (2) healthy employees (e.g., efficacy beliefs, positive affect, engagement), and (3) healthy organizational outcomes (e.g., performance, quality, commitment) (Salanova, Llorens et al., 2012). Second, the model has been validated in a sample of 303 teams and their immediate supervisors. The results of this validation show that when organizations have resources and healthy organizational practices (autonomy, feedback, supportive teamwork climate, coordination, and transformational leadership) teams feel healthier

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(more effective, engaged, and resilient), which in turn leads them to generate healthier organizational results (better intra- and extra-role performance even when they are evaluated by the supervisor) (Salanova, Llorens et al., 2012). More evidence on the HERO Model was obtained in other studies conducted in teams (Acosta, Salanova, & Llorens, 2012; Cruz, Salanova, & Martínez, 2013; Torrente, Salanova, Llorens, & Schaufeli, 2012). The concept of healthy organization means that occupational health is seen from an approach that focuses on optimizing human, social, and psychological capital, and maximizing the business strategy. Moreover, they are organizations that retain and attract more talented and productive workers, while their management is successful and they obtain healthy outcomes for employees and the organization (Salanova, 2008). Given the heuristic nature of the HERO Model and the impossibility of proving all relationships simultaneously, this study focuses on two basic components of the HERO Model: healthy employees (efficacy beliefs, positive affect, and engagement) and healthy outcomes (role performance, organizational commitment, perceived quality), assessed individually but with reference to the team level of the different units of the hospital.

### **The Role of the Team's Personal Resources on Engagement**

Following the premises of the HERO Model, personal resources are defined as the resources belonging to the people that make up the task force, which either alone or in interaction with extra-organizational and job resources are functional when it comes to tackling extra-organizational or job demands (Salanova, Llorens et al., 2012). At the same time they also have value in themselves as sources of motivation, learning, and development both individually and collectively (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). In fact, there is evidence that personal resources make it easier for individuals and groups to face life with confidence, strength, determination, hope and vision, all of which are positive characteristics for the development of work engagement (Froman, 2010). Salanova (2008) indicated that personal resources can be classified as cognitive and emotional resources. Though different, they share the ability to broaden the momentary action and build lasting intellectual and psychological personal resources (Fredrickson, 2001). Therefore, in this study we consider two types of resources: cognitive (by evaluating efficacy beliefs) and emotional (by evaluating positive affect) because they show relationships with engagement in teamwork that have been empirically validated in previous studies (e.g., Salanova, Llorens, & Schaufeli, 2011).

At the cognitive level, the most relevant personal resource is determined by efficacy beliefs. These are defined as "beliefs in one's capabilities to organize and execute courses of action required to produce given attainments or results" (Bandura, 1997, p. 3). These beliefs can be found individually

(self-efficacy), but empirical studies have also proven the existence of a perception of collective efficacy in the group. Thus, collective efficacy is defined as the shared beliefs of a group regarding the execution of courses of action required to attain designated goals (Bandura, 2000; Wang & Lin, 2007). Efficacy beliefs influence the choice and selection of responses, as well as the effort and perseverance of people when facing various environmental situations in which there are obstacles (Llorens, Garcia-Renedo, & Salanova, 2005). In addition, they work as a motivational mechanism, so that when people feel effective, they feel good in the short term (positive affect), their long-term commitment in their activities increases, and hence there is high effort and persistence, dedication and higher levels of absorption in the activities they perform (De Lucena Carvalho, Calvo, Martín, Campos, & Castillo, 2006; Llorens, Schaufeli, Bakker, & Salanova, 2007). Furthermore, when self-efficacy and engagement exist they produce an increase in the levels of task performance, improved capacity for problem-solving, and greater professionalism, empathy, and ability to work (e.g., Gullberg, Olsson, Alenfelt, & Ivarsson, 1994).

Another key personal resource in the development of work engagement is positive affect, which in this study is understood to refer to the extent to which a person feels enthusiastic, active, optimistic, comfortable, happy and resilient to adversity (Llorens, Salanova, & Losilla, 2009; Watson, Clark, & Tellegen, 1988). This positive affect enables teams to develop adaptations that are used to create lasting resources and new comprehensive thoughts, to build coping resources, and to generate more resources over time in the form of spirals (Cohn et al., 2009; Fredrickson, 2001; Llorens, Salanova, & Losilla, 2009; Salanova, Llorens, & Schaufeli, 2011). Specifically in the healthcare sector, it has been shown that positive affect increases vigor, dedication, and absorption in work with patients (Kasman, Fryer-Edwards, & Braddock, 2003; Mageau & Vallerand, 2007; Winseman, Malik, Morison, & Balkoski, 2009). According to Social Cognitive Theory (Bandura, 1997) affects may be a consequence of the efficiency of workers. Recently, Salanova, Llorens, and Schaufeli (2011) showed that efficacy beliefs (both individual and collective) influence the development of work engagement, but only through positive affect. Specifically, by means of longitudinal studies with samples used in field studies and university students in laboratory studies, these authors showed that high levels of efficacy beliefs generate positive cycles and spirals of work engagement, but only when positive affect levels increase (in terms of comfort, excitement, and satisfaction). One of the contributions of this study to scientific research is the incorporation of positive effects, relaxation, excitement, joy, optimism, resilience, and satisfaction in their relationship with efficacy beliefs, engagement, and service quality in the healthcare sector.

## Engagement in Teamwork

Work engagement has been studied mainly at the individual level and traditionally described as a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption related to work. Vigor is characterized by high levels of energy while working, and by the desire to strive in the task at hand even when there are difficulties. Dedication refers to high labor involvement with the manifestation of feelings of significance, enthusiasm, pride, and challenge with respect to the work. And absorption occurs when a person is totally focused on his/her work, time passes quickly and he/she has difficulty disconnecting from what he/she is doing (Salanova & Schaufeli, 2009, p. 109).

The study of work engagement has recently been extended to the collective level (Salanova, Llorens, Cifre, Martínez, & Schaufeli, 2003; Salanova, Llorens et al., 2012; Torrente et al., 2012). It seems that when people work together collective constructs are developed by various processes: social persuasion among group members, or behavioral modeling. Blader and Tyler (2009) noted from social identity theory that the effort of an individual's behavior is on behalf of the collective they belong to, so that these individuals are intrinsically related to the welfare of their team and are therefore likely to behave in the name of the same interests. Besides the fact of working together, team members may also experience positive emotions through a mechanism of emotional contagion (Bakker, van Emmerik, & Euwema, 2006; Salanova & Schaufeli, 2009).

Previous research has shown that work engagement has increased different health outcomes, such as: (1) business results (Harter, Schmidt, & Hayes, 2002), (2) performance and perceived quality of workers from various sectors (Burke, 1995; Rios-Rísquez, Mecca, & Fernandez, 2010; Salanova, Agut, & Peiro, 2005; Salanova et al., 2003), particularly in the healthcare sector (Carmeli, Ben-Hador, Waldman, & Rupp, 2009; Frojd & Von Essen, 2006; Koch & Jones, 2010; Lee & Ko, 2010), as well as (3) team performance assessed by the supervisor (Torrente et al., 2012), (4) levels of job control, positive affect, and efficacy beliefs in work teams as positive spirals (Llorens et al., 2007; Salanova, Llorens, & Schaufeli, 2011), (5) future academic success (Salanova, Martínez, & Llorens, 2012), and (6) job satisfaction and organizational commitment (Lebanon, Llorens, Salanova, & Schaufeli, 2012; Llorens, Bakker, Schaufeli, & Salanova, 2006) (for an in-depth review see: Schaufeli & Salanova, 2011).

Despite these advances, there is still a lack of studies that focus on the relationship between engagement in teamwork and service quality, particularly in the healthcare sector. One of the novelties of this study (besides the fact it assesses the relationship of personal resources at both the cognitive and the affective level with engagement) is the evaluation of service quality (in terms of performance, commitment, and perceived quality).

## Engagement in Teamwork and Service Quality

Previous research has shown that engagement is related to the degree of performance at work (both in-role and extra-role performance), the way in which workers engage with the organization (organizational commitment), and the level of quality with which they perform their work with patients/colleagues (Bakker & Bal, 2010; Christian, Garza, & Slaughter, 2011; Hallberg & Schaufeli, 2006). In short, we may say that engagement has proven to be positively related with service quality.

According to Goodman and Svyantek (1999) there are two key dimensions of role performance: in-role and extra-role performance. Specifically, in-role performance refers to those activities that relate to work tasks, those that are defined by the contract and assigned in the job descriptions. High levels of in-role performance indicate that the employee fulfills his or her job duties as expected. On the other hand, there is also a proactive behavior that includes other actions to support and benefit the organization, colleagues or patients altruistically (Fritz, Yankelevich, Zarubin, & Barger, 2010). This case refers to extra-role performance which refers to actions that exceed those prescribed by contract, for example, organizational citizenship behaviors.

Another key element of service quality is organizational commitment. This is understood as the emotional connection that employees have with the organization, based on shared values and interests. These shared values lead employees to develop a strong bond with their organization (Hallberg & Schaufeli, 2006). Finally, the third element included in service quality is the perceived quality, which is defined as the difference between the perception of service and consumer expectations (Vinagre & Neves, 2008). In this study the perceived quality is defined by the statement made by the healthcare workers regarding the service given by the team and the organization. Several research studies have evidenced the positive relationship that exists between employee wellbeing and service quality. For example, diverse studies have demonstrated the positive relationship between (1) engagement and extra-role performance (e.g., Schaufeli, Taris, & Bakker, 2006; Torrente et al., 2012), (2) engagement and commitment to the organization (del Líbano et al., 2012; Llorens et al., 2006), and (3) engagement and customer-perceived quality in hotels and restaurants (Salanova, Agut, & Peiro, 2005). This positive relationship between psychosocial wellbeing and the quality of the service given to patients in the healthcare sector has also been demonstrated in several studies (e.g., Carmeli et al., 2009; Frojd & Von Essen, 2006; Koch & Jones, 2010; Schneider & Bowen, 1985), where it is claimed that happier workers will devote more energy and resources to improving the care of patients.

## The Current Study

Based on previous research, the objective of this study is to analyze the antecedents (i.e., personal resources in terms

of efficacy beliefs and positive affect) and consequences (i.e., service quality) of engagement in a healthcare setting, using the HERO Model (*HEalthy and Resilient Organizations Model*; Salanova, Llorens et al., 2012) as its theoretical framework. Specifically, the study focuses on how efficacy

beliefs are related to service quality through the impact of positive affect and engagement in healthcare professionals. Positive affect and engagement are expected to consecutively mediate between efficacy beliefs and service quality perceived by hospital staff (see Figure 1).

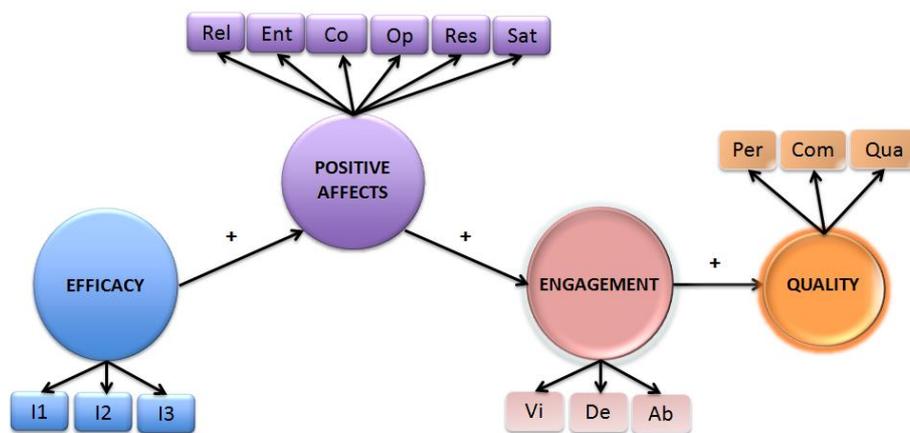


Figure 1. The proposed fully mediated model

## Method

### Sample and Procedure

A sample field study was carried out in a private hospital located in the Valencian Community in Spain. The methodology consisted in the (voluntary) administration of a printed version of the HERO questionnaire adapted to hospitals (Salanova, Llorens et al., 2012; Llorens & Salanova, 2012) to 154 healthcare professionals from different units in the hospital. Seventy-seven percent were women and 84% had a permanent contract with a mean of 11 years ( $sd=9.6$ ) working in the hospital. Since the hospital has 211 professionals and 154 employees (73%) participated in the study, the minimum of 138 employees needed to be considered a representative sample with a margin of error of 0.015 and 90% confidence was reached. The sample was also suitable for computing SEM analyses: results show that for a power of .50 and 80 degrees of freedom, we need a sample of 115 observations (MacCallum, Browne, & Sugawara, 1996).

The present study is based on a more general project developed by the WONT Research Team with the goal of evaluating Healthy and Resilient Organizations (HERO; Salanova, Llorens et al., 2012). After an initial awareness-raising talk, the data were collected during April and May 2011. Each participant received an informative letter in which the objectives of the project, the procedure for filling out the questionnaires, and information about the confidentiality of the data were indicated. The questionnaires were administered during the work schedule. They were placed in a sealed envelope and picked up by the researcher himself, who was always present during the distribution and collec-

tion of the questionnaires in order to answer any questions. The confidentiality of the data was guaranteed.

### Variables

The variables were structured following the HERO Model and the questionnaire adapted to hospital settings (Llorens & Salanova, 2012). Its validity and empirical evidence have been proven in previous research (Acosta, Salanova, & Llorens, 2012; Cruz, Salanova, & Martínez, 2013; Torrente et al., 2012; Salanova, Llorens et al., 2012). This questionnaire was designed to test healthy practices and resources, healthy employees, and healthy outcomes in healthcare settings. The present study focuses on two of these three elements: healthy employees (efficacy beliefs and positive affects), and healthy outcomes (performance, organizational commitment, and perceived quality). Healthcare employees completed the questionnaire using a Likert-type scale from 0 (*unable to do well/never*) to 6 (*sure to be able to do well/always*). They thought about the work-unit that they belonged to. The variables used are presented below. In all cases, the variables were collected and analyzed at the individual level.

Personal resources of the team were measured with two factors: professional efficacy beliefs (cognitive level) and positive affect (emotional level). Professional efficacy beliefs, which constituted the independent variable, were assessed by three items ( $\alpha = .93$ , e.g., *'We can do the job even though unexpected situations arise'*). Positive affects at work, which played the role of the mediator variable, were measured with six items asking about *'How the group has felt during the last year'*: relaxed, enthusiastic, at ease, optimistic, resilient, and satis-

fied with the work ( $\alpha=.92$ ). To do so, an adaptation of the Warr scale (1990) with a face-rating scale was used, since this allows the affective dimension of the variables to be captured (Kunin, 1955).

Work Engagement of the team was measured by 18 items using the Spanish version of the Utrecht Work Engagement Scale (UWES; Schaufeli, Salanova, González-Romá, & Bakker, 2002) but adapted to work groups (Salanova et al., 2003). This questionnaire included three dimensions: (1) vigor (seven items; e.g., ‘My group could continue working for very long periods at a time’;  $\alpha=.76$ ), (2) dedication (four items; e.g., ‘My group was involved in the task’;  $\alpha=.87$ ), and (3) absorption (seven items, e.g., ‘Time flew when my group was working’;  $\alpha=.72$ ). This variable constitutes the second of the mediator variables.

Quality of the service was taken as the independent variable, and was tested by 16 items distributed on three scales: performance, organizational commitment, and perceived quality. Specifically, performance ( $\alpha=.84$ ) was assessed by two dimensions (adapted from the Goodman and Svyantek scale (1990): in-role performance (three items; e.g., ‘My team achieves its work goals’;  $\alpha=.81$ ), and extra-role performance (three items; e.g., ‘In my team we carry out functions which are not required but improve the image of the organization’;  $\alpha=.83$ ). Organizational commitment was measured by three items using an adaptation of the Cook and Wall (1980) scale (e.g., ‘We like to tell everyone that we work in this hospital’;  $\alpha=.74$ ). Finally, the perceived quality was assessed by seven items (e.g., ‘We make the patient feel special and important’;  $\alpha=.86$ ) using an adaptation of the scales of Parasuraman, Zeithaml, and Berry (1988) and Price, Arnould, and Tierney (1995).

### Data Analyses

First, we calculated descriptive analyses (i.e., means, standard deviations), inter-correlations and reliability analyses (Cronbach’s alpha) using SPSS. Second, we computed the Harman’s single factor test (see Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) with AMOS 21.0 to test for bias due to common method variance. Third, we computed Analyses of Variance (ANOVA) to test significant differences in the scales of the study depending on socio-demographic variables (gender, and type of contract<sup>1</sup>) to rule them out as control variables in the SEM analyses. Fourth, we implemented Structural Equation Modeling (SEM) by AMOS 21.0 to test the hypothesized model following the recommendations for mediating analyses for latent constructs and multiple mediators (Holmbeck, 1997; James, Mulaik, & Brett, 2006). The different steps of Baron and Kenny (1986) with latent factors and Sobel’s test (Sobel, 1982; cf. Wood, Goddman, Beckmann, & Cook, 2008) were comput-

ed. Finally, we computed bootstrapping (MacKinnon et al., 2002; Preacher & Hayes, 2004) by AMOS 21.0 to test the significance of direct and indirect effects among the variables in the model. Four models were tested in order to verify the hypothesis: M1.Proposed, which assumes that efficacy beliefs are positively related to the service quality through positive affects and engagement (see Figure 1); M2.Partially Mediated, in which a direct relationship was also included from efficacy to service quality (see Figure 2); M3.Partially Mediated (bis), in which a direct relationship was also included from efficacy to engagement, and from positive affects to service quality (see Figure 3). Furthermore, as recommended by Kline (1998), we also tested an alternative model to show that the order of the mediating variables in our model is not arbitrary. Consequently, M4.Alternative, in which positive affects are mediating the relationship between engagement and service quality, was tested (see Figure 4).

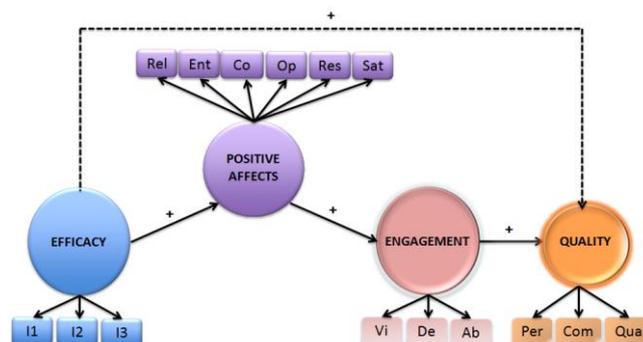


Figure 2. The partially mediated model.

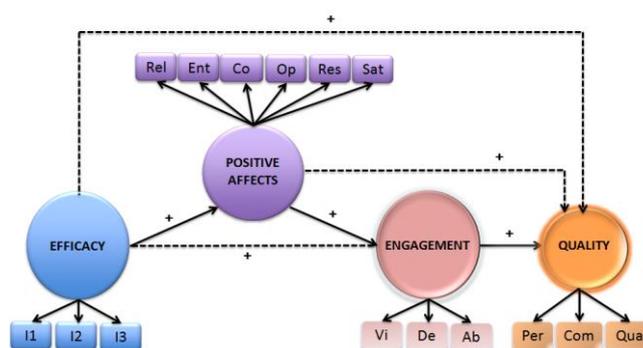


Figure 3. The partially mediated model (bis).

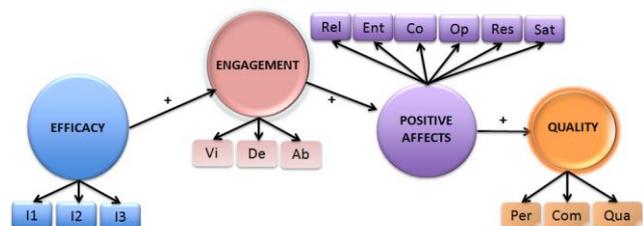


Figure 4. The alternative model.

<sup>1</sup> In the research only these socio-demographic variables were tested, as requested by the hospital.

For the SEM analyses, methods of maximum likelihood were used by testing absolute and relative indices of goodness of fit (Marsh, Balla, & Hau, 1996): the  $\chi^2$  index, Goodness of Fit Index (GFI), the Root Mean Square Error of Approximation (RMSEA), the Standardized Root Mean Square Residual (SRMR), the Comparative Fit Index (CFI), the Incremental Fit Index (IFI), and the Tucker-Lewis Index (TLI). Values smaller than .08 for RMSEA (Brown & Cudeck, 1993) and SRMR (Hu & Bentler, 1998) and greater than .90 for the rest of the indices (Hoyle, 1995) indicate an acceptable fit. Finally, the Akaike Information Criterion (AIC; Akaike, 1987) was computed to compare competing non-nested models; the lower the AIC index, the better the fit is.

## Results

### Descriptive Analyses, Harman Test, and Analyses of Variance

First, results show that all scales fit the reliability criteria proposed by scientific research (Nunnally & Bernstein, 1994). Furthermore, the pattern of correlations shows that, as expected, all scales interrelate positively and significantly in 100% of cases (mean  $r=0.45$ ) (see Table 1).

Second, Harman's single factor test (e.g., Podsakoff et al., 2003) reveals a poor fit to the data,  $\chi^2(65)=339.49$ ,

RMSEA=.16, CFI=.75, NFI=.71, TLI=.70, IFI=.75. It seems that the bias of common method variance does not affect the dataset. Consequently, the variance of the variables is a consequence of the psychosocial constructs and not due to the evaluation method.

Third, ANOVA show there are no significant differences according to genre or type of contract in any of the study variables (efficacy beliefs, positive affects, vigor, dedication, absorption, performance, commitment, and perceived quality) (see Table 2). Consequently, in the following analyses (SEM) it was not necessary to include the genre and the contract as control variables.

### Model Fit: Structural Equation Modeling

Table 2 displays the results of the structural equation analyses. In accordance with Baron and Kenny (1986) we fit our proposed model (M1) to the data. The model consists of one exogenous (efficacy beliefs) and three endogenous variables (positive affects, engagement, and service quality). Efficacy beliefs and positive affect comprise three and six indicators (items), respectively. Work engagement comprises three indicators related to the vigor, dedication, and absorption scales. Finally, service quality is composed of three indicators (scales): performance, organizational commitment, and perceived quality.

**Table 1.** Means (*M*), Standard Deviations (*SD*), internal consistency (Cronbach's alpha on the diagonal) and correlations of the variables in the study ( $n=154$ )

Variable	<i>M</i>	<i>DT</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Efficacy	5.13	1.11	.93							
2. Positive Affects	3.09	1.89	.24	.91						
3. Vigor	4.43	0.81	.41	.45	.76					
4. Dedication	4.92	0.97	.42	.50	.61	.87				
5. Absorption	3.98	0.90	.32	.40	.57	.61	.72			
6. Performance	4.25	1.01	.42	.35	.52	.56	.42	.84		
7. Commitment	4.49	1.13	.34	.41	.54	.61	.47	.44	.74	
8. Quality	4.77	0.82	.31	.29	.48	.4	.49	.56	.49	.86

Note. All the correlations are significant at  $***p<.001$ .

**Table 2.** Analyses of Variance (ANOVA) of the variables in the study based on gender and type of contract ( $n=154$ ).

Variable	Gender			Contract		
	df	<i>F</i>	<i>p</i>	df	<i>F</i>	<i>p</i>
1. Efficacy	1, 143	2.381	.125 ns	1, 143	1.043	.309 ns
2. Positive Affects	1, 141	2.604	.109 ns	1, 141	5.879	.170 ns
3. Vigor	1, 144	.029	.866 ns	1, 144	.427	.514 ns
4. Dedication	1, 144	1.033	.311 ns	1, 144	.750	.388 ns
5. Absorption	1, 143	.455	.501 ns	1, 143	1.009	.317 ns
6. Performance	1, 143	2.309	.131 ns	1, 143	1.290	.258 ns
7. Commitment	1, 141	.602	.439 ns	1, 141	1.123	.291 ns
8. Quality	1, 142	.567	.453 ns	1, 142	.487	.486 ns

Note. df=degrees of freedom; *F*=*F* value, *p*=probability, ns=non-significant

Results indicate that M1<sub>proposed</sub>, in which efficacy beliefs are positively related to service quality through positive affect and engagement, does not fit the data well,  $\chi^2(87)=168.86$ , GFI=.87, RMSEA=.07, SRMR=.10, CFI=.94, TLI=.93, IFI=.94, AIC=234.86. The partial me-

diation model, M2<sub>Partially mediated</sub>, in which we included a direct relationship from efficacy beliefs to service quality, showed a significant difference between both models, Delta  $\chi^2(1)=5.19$ ,  $p<.05$ , in favor of M2,  $\chi^2(86)=163.67$ , GFI=.87, RMSEA=.07, SRMR=.09, CFI=.95, TLI=.94,

IFI=.95, AIC=231.67. Third, M3-Partially mediated (bis), was tested, which is a partially mediated model in which we also included direct relationships from efficacy beliefs to engagement and from positive affects to service quality,  $\chi^2(84)=138.78$ , GFI=.90, RMSEA=.06, SRMR=.05, CFI=.96, TLI=.95, IFI=.96, AIC=210.78. Chi-square values show significant differences between M1 and M3, Delta  $\chi^2(3)=30.08$ ,  $p<.001$ , and between M2 and M3, Delta  $\chi^2(2)=24.89$ ,  $p<.001$ . These results give evidence for M3: (1) efficacy beliefs are positively and significantly related to service quality through positive affects and engagement; (2) there is a direct significant relationship from efficacy beliefs to engagement,  $\beta=.24$ ,  $p<.001$ ; but (3) the direct relationships between positive affect and quality service,  $\beta=.06$ , *ns*, also running from efficacy beliefs and service quality,  $\beta=.08$ , *ns*, were non-significant.

Concerning the mediation process, the four conditions for latent variables of Baron and Kenny (1986) were tested and met in the best model (M3): (1) efficacy beliefs were positively and significantly related with the mediating variables: positive affects,  $\beta=.52$ ,  $p<.001$ , and engagement,  $\beta=.50$ ,  $p<.001$ ; (2) efficacy beliefs were positively and significantly related to service quality,  $\beta=.51$ ,  $p<.001$ ; (3) positive affects,  $\beta=.51$ ,  $p<.001$ , and engagement,  $\beta=.94$ ,  $p<.001$ , were positively and significantly related to service quality. Furthermore, the relationship between efficacy beliefs and service quality is non-significant when we control for positive affects and engagement,  $\beta=.06$ ,  $p=.254$ . Similarly, the relationship between positive affects and service quality is non-significant,  $\beta=.07$ ,  $p<.287$  when we control for the mediator effect of engagement. However, the relation-

ship between efficacy beliefs and engagement continues to be significant,  $\beta=.37$ ,  $p<.001$ , when we control for the effect of positive affect. These results offer evidence that positive affects and engagement do not fully mediate the relationship between efficacy beliefs and service quality. The Sobel test (1982; see Wood et al., 2008) shows that the indirect effect from efficacy beliefs to service quality through positive affect (Sobel test=3.38,  $p<.001$ ) and engagement (Sobel test=7.35,  $p<.001$ ) is statistically significant.

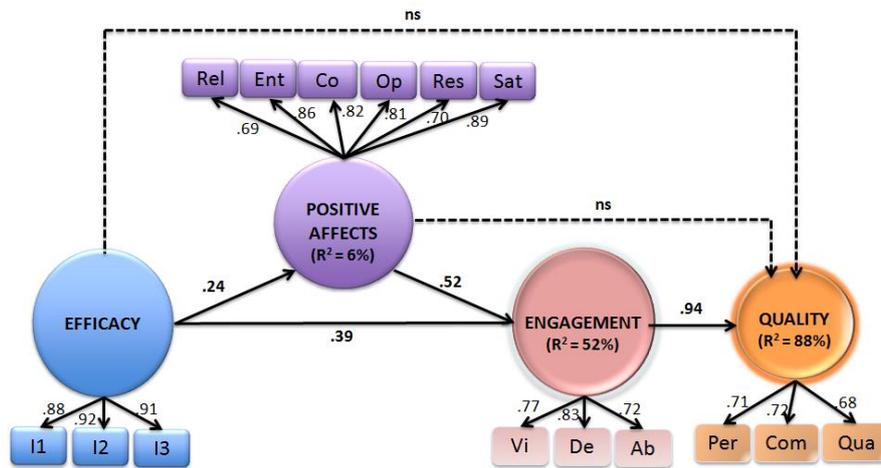
As proposed by Kline (1998), we tested an alternative model in order to prove that the order of the mediating variables in the model is not arbitrary. As a consequence, M4, in which positive affect is mediating the relationship between engagement and service quality, was tested. As expected, results yielded evidence in favor of M3, since M4 showed a higher chi-square value, Delta  $\chi^2(3)=89.12$ ,  $p<.001$  and worse fit indices compared to M3.

To sum up, results using SEM and double mediation analyses gave convincing evidence in favor of M3. Figure 5 offers a graphical representation of this model. All the manifest variables loaded significantly on the intended latent factors, with values ranging from .68 to .92. Second, a review of the paths for M3 reveals that, as expected, efficacy beliefs are significantly and positively related to positive affect,  $\beta=.24$ ,  $p<.001$  ( $R^2=6\%$ ), which also has a significant positive relationship with engagement,  $\beta=.52$ ,  $p<.001$  ( $R^2=27\%$ ), and this in turn is significantly and positively related to service quality,  $\beta=.94$ ,  $p<.001$  ( $R^2=88\%$ ). Finally, efficacy beliefs also show a significant positive relationship with engagement,  $\beta=.39$ ,  $p<.001$  ( $R^2=20\%$ ).

**Tabla 3.** Índices de Ajuste de los Modelos de Ecuaciones Estructurales ( $N = 154$ )

Model	$\chi^2$	<i>gl</i>	GFI	RMSEA	SRMR	CFI	TLI	IFI	AIC	$\chi^2$ dif.
Model 1 (M1)	168.86	87	.87	.07	.10	.94	.93	.94	234.86	
Model 2 (M2)	163.67	86	.87	.07	.09	.95	.94	.95	231.67	
Dif. M2-M1										5.19*
Model 3 (M3)	138.78	84	.90	.06	.05	.96	.95	.96	210.78	
Dif. M3-M1										30.08***
Dif. M3-M2										24.89***
Modelo 4 (M4)	227.90	87	.85	.10	.12	.90	.89	.91	293.90	
Dif. M4-M1										59.04 <sup>3</sup>
Dif. M4-M2										64.23***
Dif. M4-M3										89.12***

Notes.  $\chi^2$ =Chi-square; df=degrees of freedom; GFI=Goodness of Fit Index; RMSEA=Root Mean Square Error Approximation; SRMR=Standardized Root Mean Square Residual; CFI=Comparative Fit Index; TLI=Tucker-Lewis Index; IFI=Incremental Fit Index; AIC=Akaike Information Criterion;  $\chi^2$ dif.= difference of Chi-square; \*\*\* $p<.001$ , \* $p<.05$ .



**Figure 5.** Structural model of efficacy beliefs, positive affects, engagement, and service quality (n = 154). *Note:* The significant standardized coefficients at  $p < .001$  are represented graphically by continuous lines; the non-significant standardized coefficients are represented graphically by dashed lines; ns = non-significant.

**Model Fit: Bootstrapping Analyses**

Although we had a sample that was large enough to compute Structural Equation Analyses with a power of .50 (MacCallum, Browne, & Sugawara, 1996)<sup>4</sup>, we replicated the results using the bootstrapping procedure with the AMOS program (MacKinnon et al., 2002; Preacher & Hayes, 2004). This method allows the researcher to determine more specifically: (1) the significance of statistical estimates of the direct and indirect relationships when the samples are not so big, and (2) the confidence intervals for the indirect effects (Efron & Tibshirani, 1993; Shrout & Bolger, 2002). The null hypothesis, which proposes that  $x$  has no indirect effect on  $y$  via  $m$ , is rejected when the confidence interval is above or below zero. Accordingly, new samples were extracted (using the replacement procedure) from our sample (500 times), and the direct and indirect estimations of the model were computed.

As expected, results show that positive affect and engagement fully mediate the relationship between efficacy beliefs and service quality, since the direct relationship between

efficacy beliefs and service quality is non-significant. Moreover, the 95% confidence intervals of the mediation model do not include the value zero. This means that the model is statistically significant (Preacher & Hayes, 2004) (see Table 4). According to the indirect effects (which are the key effects in the study), results show that, as expected, three out of the four indirect relationships were significant: (1) positive affect partially mediates the relationship between efficacy beliefs and engagement,  $\beta = .30, p = .01$ ; (2) engagement fully mediates the relationship between positive affect and service quality,  $\beta = .28, p = .004$ ; and finally, (3) engagement partially mediates the relationship between efficacy beliefs and service quality,  $\beta = .22, p = .002$ . Consequently, we may conclude that, as expected, positive affect and engagement mediate the relationship between efficacy beliefs and service quality. However, positive affect partially mediates the relationship among efficacy beliefs, engagement, and service quality, but work engagement fully mediates the relationship among efficacy beliefs, positive affect, and service quality.

**Table 4.** Fit of the bootstrapping model: indirect relationships (N=154)

Variable mediadora	Indirect Effects	Bootstrap		CB 95% IC		p
		Estimate	SE	CI Lower	CI Upper	
Positive affects	Engagement	.30	.11	.09	.44	.010
	Efficacy beliefs					
Engagement	Service quality	.28	.06	.20	.40	.004
	Positive Affects					
Engagement	Service quality	.22	.05	.14	.31	.002
	Efficacy beliefs					

*Notes.* Number of bootstrap resamples = 500; BC = Bootstrap confidence; CI = Confidence Interval; SE = Standard Error; p = probability.

<sup>4</sup> According to MacCallum, Browne, and Sugawara (1996), for a potency of .50, and  $df_{2000061} = 80$ , we need a sample composed of at least 115 observations to calculate SEM.

## Discussion

The aim of this study was to understand how efficacy beliefs are related to service quality (performance, organizational commitment, and perceived quality) through the impact of positive affect and engagement (vigor, dedication, and absorption) in the healthcare professionals of a hospital in the Valencian Community. We expected positive affect and engagement to consecutively mediate between efficacy beliefs and service quality perceived by hospital staff.

Results from SEM and bootstrapping analysis showed that, as expected, positive affect and work engagement mediate the relationship between efficacy beliefs and service quality assessed by the hospital staff. Specifically, efficacy beliefs were positive and significantly related to the positive affect of the healthcare workers, which in turn was positively and significantly related to engagement, and engagement was also related to service quality. In addition, the relationship between model variables is not so simple, and the powerful role of efficacy beliefs on engagement has also been proven. Furthermore, this relationship is not only determined by the mediating effect of positive affect but also directly, and it therefore shows a partial mediation of positive affect between efficacy beliefs and engagement. Thus, it appears that healthcare workers with high efficacy beliefs as regards their ability to perform their work successfully experience more positive affect (they are more relaxed, enthusiastic, happy, optimistic, resilient, and satisfied with the work). These positive affects (and efficacy beliefs) make workers spend more effort on their work, they feel full of energy to do their work, and they feel proud of the work they do, which is perceived with meaning and purpose, so it seems that "time flies". Moreover, the experience of these levels of engagement by healthcare workers is related to better performance (both of the tasks required under contract and extra-role tasks), greater commitment to the hospital, and providing higher quality patient care.

These results are in line with previous research, showing positive relationships between efficacy beliefs, positive affect, and engagement, as well as relationships between engagement and service quality (e.g. Burke, 1995; Rios-Rísquez, Mecca, & Fernandez, 2010; Salanova, Llorens, & Schaufeli, 2011; Salanova, Llorens et al., 2012). Specifically, research (e.g., Carmeli et al., 2009; Fröjd & Von Essen, 2006; Lee & Ko, 2010) has shown that the performance of healthcare professionals depends in part on their effectiveness, their vigor, and their dedication. These positive states are reflected in the way healthcare workers treat patients. They are more effective, most engaged professionals, and are better at communicating difficult issues; likewise, they provide patients with a more appropriate amount of information, and this helps them to feel competent and confident in their interpersonal relationship with their patients. We can conclude that hospitals should promote efficacy beliefs and positive affect if they want to increase healthcare workers'

levels of engagement, which will in turn result in an increase in the service quality in terms of performance, commitment to the hospital, and quality of patient care. In sum, the results support the hypotheses of this research, and it can be said that the aim of this study was achieved.

## Limitations and Further Research

Despite its strengths, this study is not without its limitations and, as we see it, there are essentially four key limitations. The first is that it uses a convenience sample, which compromises the generalizability of the results. However, it offers a vision of the daily reality of the hospital that was analyzed, which may allow for the generation of specific interventions in healthcare workers (Reeves & Bednar, 1994). The second limitation refers to the fact that data were collected through self-report questionnaires, which could generate common variance bias. However, the Harman's test revealed that there is no common method bias variance in the database. The third limitation is that, although the reference when completing the questionnaire was the group/organization, data were treated individually considering the perception of employees. In future studies it would be advisable to include more hospitals (at least 30) in order to replicate the results obtained by adding the scores at team or organization level, given the relevance of the work units in hospitals (Lee & Ko, 2010). In this case, the perception of service quality assessed by supervisors or customers may be used to explore cross-level and interaction effects using multilevel analysis. Finally, another limitation of the study is that it is a cross-sectional study. In future studies it would be interesting to include longitudinal designs by collecting two or three measures to establish cause-and-effect relationships and to develop cycles and spirals of efficacy beliefs, respectively.

## Theoretical and Practical Implications

The present study shows different theoretical and practical contributions. Theoretically, this study extends research on the mediating role of positive affect and teamwork engagement in their relationship between efficacy beliefs and service quality assessed by three indicators (performance, commitment, and perceived quality) in a rather hard-to-access context such as the healthcare sector. The results provide evidence for the *HERO* Model (Salanova, Llorens et al., 2012) in the healthcare setting. Second, this study contributes to the study of engagement by analyzing the antecedents (as personal resources) and their consequences in terms of service quality. In addition, as regards the personal cognitive resources (evaluated by efficacy beliefs), in the present study the indicators of positive affect have also been extended by including items such as optimism and resilience, which were not present in previous studies on this issue (Salanova, Llorens, & Schaufeli, 2011). Furthermore, this study

is not only limited to determining the sources of engagement in teamwork, but also analyzes their positive consequences, as shown by service quality, a key variable in the healthcare context. From a practical perspective, the results of this study may be valuable when it comes to implementing intervention strategies for fostering and caring for the health of healthcare professionals. Specifically, the results indicate that strategies can be implemented to facilitate the generation of (cognitive-emotional) personal resources among employees, especially among the different units and work teams in a hospital, to favor collective team efficacy and the development of positive affects in order to achieve the total well-being of healthcare workers (engagement) and promote the overall quality of patient care.

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## Final Note

This study seeks to stimulate action-research aimed at promoting the occupational health of healthcare workers. The managerial staff in hospitals has to be aware that investing in employee health is equivalent to investing in service quality for patients. We hope this is the first of many studies conducted to develop healthy and resilient healthcare organizations that may become true "temples of health" for their employees and patients.

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