

# Psychological contract breach and organizational citizenship behaviours: the moderating role of contract type

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## Abstract

**Purpose** – Drawing on the conservation of resources (COR) theory, this study aims to assess the moderating effect of the psychological contract (PC) type (relational, transactional and balanced) on the relationship between psychological contract breach (PCB) and organizational citizenship behaviours (OCBs).

**Design/methodology/approach** – The authors administered a survey to a sample of 159 nurses working in a large public hospital. To analyse the survey data, the authors used partial least squares with SmartPLS v.3.3, a variance-based structural equation modelling technique that combines principal component analysis, path analysis and regression analysis.

**Findings** – This study shows that nurses counteract the loss of resources following a PCB by investing more in stronger interpersonal relationships with co-workers and patients as a way to recuperate from resource loss and gain social resources. In addition, the moderating effect of the PC type reinforces the relationship between a PCB and OCB in a way that relational and balanced PC types support OCB-I positively but negatively OCB-O. Furthermore, the transactional PC does not



reinforce negatively the link between PCB and OCB-I, and the negative interacting effect on the PCB and OCB-O link is only partially supported.

**Research limitations/implications** – The study findings are grounded on a cross-sectional research design and a convenience sampling strategy.

**Practical implications** – The results highlight the relevance of human resources management practices centred on employee involvement and participatory supervision styles for ensuring OCB display at the workplace.

**Originality/value** – The results add new evidence to COR theory by highlighting the importance of social resources as a mitigator in the relationship between nurses' PCB and OCB towards co-workers and patients (OCB-I). Hence, the OCB-I display will vary in function of the target and the moderating effect of PC type (relational, balanced or transactional).

**Keywords** Psychological contract breach, Organizational citizenship behaviours, COR theory, Nurses, Structural equation modelling, Health-care management

**Paper type** Research paper

## Introduction

This article delves into the perceptions of a group of nurses working in a public hospital and tries to untangle the intertwined relationships between psychological contract breach (PCB), organisational citizenship behaviours (OCBs) and the interaction role of contract type. To the best of our knowledge, few shreds of evidence address the content and terms of nurses' psychological contract (PC) as a moderator variable in the relationship between PCB and OCB. However, the contract type and its contents may determine how nurses display (or not) OCB following a PCB.

Rousseau (1989) characterized the PC as a reciprocal exchange relationship between the focal person and another party. The mainstreaming research on PC upholds the centrality played by exchange relationships and the understanding that a promise of future return has been made, thus that reciprocity to an individual's contributions will be kept (Coyle-Shapiro *et al.*, 2019). Hence, the PC entails a set of subjective beliefs that are unilateral and that originate in the individuals' perception of the promises and mutual obligations between them and the employing organization (Rousseau, 1989, 2000). These perceived promises may include good pay, a secure job position and career opportunities, among other employment outcomes. Conversely, the individual may feel obligated to reciprocate their employer with good performance, loyalty and helping behaviours towards the employer or/and co-workers.

In this regard, empirical evidence shows that employees perceive a breach or violation when promises embedded in the PC are not fulfilled. This may negatively impact helping behaviours such as OCB, among other individual attitudes and organizational outcomes (Bari *et al.*, 2022; Conway *et al.*, 2014; Cruz *et al.*, 2023; Erkutlu and Chafra, 2013; Griep and Bankins, 2022; Jahanzeb *et al.*, 2020; Rodwell and Ellershaw, 2015; Rodwell and Gulyas, 2015; Zhong *et al.*, 2023).

According to Organ (1997), OCB is characterized as discretionary (behaviour), not directly or explicitly recognized by the formal reward system, and that promotes the effective functioning of the organization. In the health-care sector, the interaction between a nurse and a patient is much more dependent on a set of helping behaviours that may benefit the patient's treatment and care than in other service settings. Thus, the withdrawal of helping behaviours following a PCB may have a greater impact on health care than in other service settings.

By highlighting the moderator effect of PC type, we aim to extend the range of moderator variables that may impel a behavioural response to PCB. The literature already underlines

the significance of PC type for nurses' attitudes and behaviours (Fielden and Whiting, 2007; Purvis and Cropley, 2003). For instance, Purvis and Cropley's (2003) study shows that the nurses holding a relational PC had fewer intentions to leave the national healthcare service (NHS) when compared with those holding a transactional one. Despite this evidence, scant importance has been given to the role played by the PC type as a moderator between PCB and OCB. Our research's first goal is to fill this gap in the literature.

In addition, the link between PCB and OCB within a conservation of resources (COR) framework needs to be better explained. But COR theory is beneficial for understanding the factors that may influence nurses' reactions to OCB following a PCB. Central to COR theory is the concept of resources, which refer to personal characteristics, objects, conditions, social support or energies that aid individuals in performing work tasks and coping with stressful working conditions (Bolino *et al.*, 2015; Hobfoll *et al.*, 2018, 1990). A PCB represents a loss of resources – or a lack of resources gain following resources investment – that arises as a consequence of unfulfilled employer obligations. This study brings a new light to PCB and COR literature by hypothesizing that nurses' response to a PCB may be followed by the display of helping behaviours to restore or acquire additional resources or, conversely, by the withdrawal of helping behaviours to conserve and protect the resources they still have.

### Theory and hypotheses

#### *The link between psychological contract breach and organizational citizenship behaviour*

A basic tenet of COR theory (Hobfoll *et al.*, 2018, 1990) posits that a person will strive to conserve and accumulate valued resources (e.g. money, job security, tenure, or training and development opportunities within the organization). The second corollary of COR theory is that resource loss is felt more intensively by a person than resources gain, thus making the perception of loss far more salient overall. For instance, a salary cut will be perceived as more damaging than the same gain in salary would have been perceived as beneficial. This is suggestive that work-related gains will take on a greater meaning in the context of prior resource loss (Halbesleben *et al.*, 2014). A third tenet relates to the "desperation principle" (Lim *et al.*, 2020), which states that resource deprivation leads to defensive and even irrational behaviours whenever individuals perceive resource depletion or drain. This means that the loss of primary resources may lead to subsequent losses and a spiral of augmented resources depletion (Lim *et al.*, 2020).

Resources are loosely defined as things people value (Halbesleben *et al.*, 2014). They may encompass psychological resources (e.g. high self-esteem), social resources (e.g. support from family members) or financial resources, for which a good income is exemplary. At the workplace, those resources may comprise a good salary, job security, a promotion opportunity or social support from a co-worker, among other things. In addition, COR theory postulates that the way an employee strives to protect their valued resources will act as the main motivator of their behaviour and work attitudes (Hobfoll *et al.*, 2018; Lim *et al.*, 2020). Consequently, resource loss may trigger different responses from an individual (Bolino *et al.*, 2015). She/he may refrain from helping others as a way to conserve personal resources, such as time and energy; or, conversely, she/he may decide to invest more resources into helping others, hoping that those extra-role behaviours (e.g. helping co-workers with tasks, staying late or making suggestions to ameliorate work procedures) will result in future social support from co-workers and supervisors. Hence, the display of OCB depends on how individuals experience loss and seek to preserve existing resources or acquire additional ones (Lim *et al.*, 2020).

On the other hand, a PCB occurs when the organization is perceived as failing to fulfil its promises or obligations (Morrison and Robinson, 1997; Robinson and Morrison, 2000, 1995).

Hence, the breach is understood as the cognitive assessment made by the employee that the employer did not fulfil a given promise or obligation. In this study, we focus on the breach, rather than violation, the emotional state that follows the perception of a breach and that may cause feelings of betrayal, anger, a sense of injustice or resentment (Morrison and Robinson, 1997) because it is the breach that denotes a perception of resources loss.

Following COR theory (Bordia *et al.*, 2017; Halbesleben and Wheeler, 2015; Kiazad *et al.*, 2014), we posit that nurses may perceive a PCB as a loss of valued resources. However, nurses may decide to act upon the perception of resource loss by increasing helping behaviours to acquire additional resources not necessarily by decreasing them. This rationale is in accordance with COR tenets (Hobfoll *et al.*, 2018) that state that resources gain efforts increase in the context of heavy resource loss. When resource loss is perceived as highly constraining, resource gain is ever more important and valued by the person. In this scenario, increasing supportive ties with co-workers or other parties in the employment relationship (e.g. patients or patients' families) provides the employee with a shelter to fall back. It limits the sense of resources depletion (Hobfoll *et al.*, 1990, p. 470).

In this regard, it is essential to distinguish between OCB towards the individual (OCB-I) and OCB towards the organization (OCB-O). According to Organ (1997), OCB-I refers to behaviours that take the form of assistance to specific persons, such as co-workers or clients, and are usually labelled as helping behaviours. OCB-O relates to behaviours that do not assist any particular person but demonstrate a high individual conscientiousness towards overall organizational performance: high standards for attendance, punctuality, the efficient use of organizational resources and time, to give some examples.

As follows, the findings brought by several studies show that a PCB has a negative impact on an employee's overall OCB display (Bolino *et al.*, 2015; Conway *et al.*, 2014; Coyle-Shapiro, 2002; Cruz *et al.*, 2023; Deng *et al.*, 2018; Griep and Bankins, 2022; Jahanzeb *et al.*, 2020; Restubog *et al.*, 2008; Rodwell and Ellershaw, 2015; Zafri, 2012; Zhao *et al.*, 2007; Zhong *et al.*, 2023). Thus, we argue that individuals' beliefs about broken organizational promises will negatively impact their helping behaviours because employees are unwilling to expend personal resources (i.e. time, energy, expertise) with others in the workplace (Jahanzeb *et al.*, 2020).

The previous reasoning is in accordance with COR theory (Hobfoll *et al.*, 2018) which states that individuals will strive to conserve personal resources as a defensive mechanism when coping with stressful situations. Declining to help co-workers or the organization itself may be understood as preserving personal resources following PCB. However, this behavioural strategy may generate a negative resource loss spiral because employees will suffer doubly. From broken organizational promises and a lower ability to perform work tasks, the assurance of reciprocity and help from others is lost (Jahanzeb *et al.*, 2020).

Some authors (Conway *et al.*, 2014; Cruz *et al.*, 2023; Deng *et al.*, 2018; Griep and Bankins, 2022; Restubog *et al.*, 2008; Rodwell and Ellershaw, 2015) underline that the targets of retaliation after a PCB may vary. This means that some helping behaviours involving interpersonal relationships do not cease to exist. For instance, the studies by Restubog *et al.*'s (2008) and Rodwell and Ellershaw's (2015) assert that a PCB indirectly affects an employees' initiative to engage in OCB-O, but not necessarily in OCB-I. Conway *et al.* (2014) confirm that organizational changes in the public sector, such as cost-cutting measures, were a predictor of PCB that also decreased employee's OCB-O. However, the service quality towards co-workers (OCB-I) or public service users (OCB-P) remained unaffected (Conway *et al.*, 2014). Concomitantly, Costa and Neves (2017) uncovered that blaming attribution moderated the relationship between PCB and OCB via affective organizational commitment. Thus, the employees' affective commitment buffered some negative PCB results on OCB-O.

This last study highlights the importance of moderators in the relationship between PCB and OCB display.

Departing from COR theory (Hobfoll *et al.*, 1990; Lim *et al.*, 2020), we assume that as a way to cope with PCB and secure future social support, the nurses in our study may be willing to increase helping behaviours towards co-workers (i.e. internal sources of support), and patients or patients' families (i.e. external sources of support), that is, OCB-I. This reasoning is supported by recent studies conducted along a COR perspective (Cruz *et al.*, 2023; Griep and Bankins, 2022; Jahanzeb *et al.*, 2020) showing that employees' relationships with their employers do not interfere with interpersonal citizenship towards co-workers (Cruz *et al.*, 2023). This effect is stronger when employees perceive high levels of organizational support and trust in management (Griep and Bankins, 2022).

As emphasized by Hobfoll *et al.* (1990), a growth in social resources will increase the social support received. This may protect the person from resource loss, augmenting their general sense of well-being and personal identification with work. In the same vein, the study by Kiazad *et al.* (2014) asserts that a PCB positively affects employee's work–role innovation as a way to acquire or conserve resources after a loss. These authors highlight that PCB is more likely to relate negatively to work–role innovation in the case of employees with many benefits tied to their jobs. This happens because they struggle to protect their job resources after a PCB.

As nurses may perceive PCB as damaging to their career progression or job stability within the organization, we expect to see a decrease in helping behaviours towards the organization (OCB-O) as a way to conserve personal resources, such as time or mental energy. However, there may be a distinction between targets in OCB display, with nurses maintaining some degree of OCB display when it comes to co-workers and patients. We hypothesize that this may be linked with COR tenets (Hobfoll *et al.*, 2018), given that, for example, co-workers may be considered an important source of informational and emotional support (Halbesleben and Wheeler, 2015). Therefore, nurses may be willing to display OCB-I as a means to maintain social resources, even after perceiving PCB.

Summarizing, the above literature presents contradictory evidence on the positive or negative impact of PCB on employees' OCB display due to a great extent to moderator interactions or variances on the target of retribution following PCB. Departing from COR theory and social exchange literature, we hypothesize the following:

- H1.* Nurses' perception of PCB has: (a) a positive association with their willingness to exhibit OCB-I as a way to acquire additional social resources; (b) a negative association with their willingness to exhibit OCB-O as a way to conserve existing personal resources.

#### *The moderating role of psychological contract type*

PCs range from transactional to relational regarding content and subjective terms (Rousseau, 1989, 2000). The relational contract assumes reciprocity between the parties and involves attributes such as mutual trust, commitment, loyalty and a long-term employment relationship. It implies a socioemotional exchange that is not monetizable. As such, these contracts are embedded in interpersonal relationships, and we may expect that a strong relational contract will lead individuals to engage in OCB (Mai *et al.*, 2016). In this case, the employee feels emotionally obligated to support the organization and wants to be a good organizational citizen.

Conversely, the transactional contract presumes a purely monetary exchange for completing specific work tasks. Employees with a strong transactional PC focus on

immediate compensation for their contributions and do not feel obligated to stay in the organization. At the same time, the employer has no obligation to offer a secure job position, training or other developmental opportunities, and the employee is free to leave at any time. Hence, we may expect employees holding a transactional PC to focus primarily on well-defined performance expectations. This decreases the possibility that they will become involved in OCB, which does not result in immediate economic returns (Mai *et al.*, 2016).

In addition, Rousseau (2000) acknowledges a balanced PC whose main features are connected to employability guarantees for both parties. The employee is responsible for developing their skills, and, by the same token, the employer is committed to enhancing employees' long-term employability outside as well as inside the organization (e.g. by offering advancement and developmental and training opportunities). Hence, this contract provides employees with sufficient employment duration and some degree of emotional attachment to the organization, in addition to a specified reward system. As such, employees with a balanced PC are expected to engage in OCB to preserve an employment relationship that offers them fair rewards and obligations (Shih and Chen, 2011).

Shih and Chen's (2011) study suggests that employees face a social dilemma when deciding to display OCB. The social dilemma rests on the fact that by engaging in OCB, employees do not gain any immediate resources; however, they contribute promptly to organizational performance. Thus, the organization benefits immediately from OCB, but the person does not. According to these authors, the degree of the social dilemma employees face will vary according to PC type. And because a balanced PC offers the fairer employment relationship, with long-duration employment, clear performance goals and a specified reward system, it also implies that resources gain or loss will be evenly divided between the parties. By comparison, a relational PC suggests a medium level of a social dilemma because a long-term relationship is implicit between the parties, but the reward system is not tied to performance goals; hence, employees have no guarantee that the investment of their resources will be reciprocated. As regards the transactional contract, Shih and Chen (2011) argue that it puts the highest level of social dilemma on employees because it offers a limited duration of employment, in which employees are obligated to perform a specific set of tasks with little involvement. In this case, employees see no purpose in displaying OCB for future resource gain.

Following the tenets of COR theory (Hobfoll *et al.*, 2018), we may hypothesize that employees that hold a balanced or a relational PC will be more willing to exhibit OCB because they envision some kind of resources gain in the future. On the contrary, those employees' holding a transactional PC will be the least engaged in OCB. Thus, employee's focus on relational or transactional contracts will strongly influence the degree to which they decide to engage (or not) in helping behaviours (Mai *et al.*, 2016).

In this regard, Bal *et al.*'s (2010) study concludes that those employees who perceived high levels of social exchange in the employment relationship (i.e. a long-term relationship) were more likely to feel betrayed and responded more strongly to contract breaches by diminishing job efforts. The study by De Clercq *et al.* (2021) shows that a PCB was felt more intensively by those employees that held a highly relational contract than a transactional one. Employees expected the employer to care for their personal well-being. They reacted more negatively to a PCB because they felt the organization had failed to keep its promises and betrayed them.

On the other hand, Mai *et al.* (2016) analyse the role of turnover intentions for the exhibition of OCB and deviant behaviours (e.g. damaging organizations' property or being rude to co-workers) by employees, with PC type as a mediator variable. The results of Mai *et al.*'s (2016) research confirm that turnover intentions motivate employees to hold strong



transactional and weak relational contracts. But in both PC types, turnover intentions affected discretionary behaviours by increasing deviant behaviours. However, in what concerned the relational contract, [Mai et al. \(2016\)](#) uncovered that this PC type did not significantly affect OCB engagement.

Following the previous rationale, we hypothesize that PCB will be felt more intensively by those employees holding a relational or even a balanced contract because PC unfulfillment will be perceived as involving major resources loss. Employees' belief in the relational obligation of their employers may intensify the sense of depletion regarding job-related resources and may induce employees to conserve personal resources such as time, energy or expertise ([De Clercq et al., 2021](#); [Lim et al., 2020](#)). For instance, the loss of organizational tenure may be an important resource drain that generates stress because of the potential to hinder one's job permanence with the employer. Therefore, a relational PCB may refrain the employee from showing helping behaviours that would benefit overall organizational performance, as a way to restore their sense of equity and conserve existing resources.

On the contrary, as COR theory posits, a contract breach may also motivate employees to acquire and accumulate new resources to counterweight resource loss ([Coyle-Shapiro et al., 2019](#); [Hobfoll et al., 2018](#)). [Yang et al.'s \(2018\)](#) study with nurses underlined that support provision to co-workers was the most beneficial to support providers' engagement in a work environment with lower supervisor or co-worker support. Benefiting from co-worker's help was especially appreciated when the work environment was hostile.

Departing from extant research, we expect the nurses in our study to acquire additional social and emotional resources from co-workers or patients and patient's families, as a means to acquire resources and assure social reciprocity. Thus, we hypothesize the subsequent relationships:

- H2.* A relational PC moderates the relationship between nurses' perception of PCB and OCB, such that this indirect relationship maintains (a) the positive relationship between nurses' PCB and OCB-I; and (b) the negative relationship between nurses' PCB and OCB-O.

Employees holding a transactional contract focus on strictly monetizable exchange terms and have an employment contract of short-term duration. This reduces the likelihood of engaging in OCB because there are little to no immediate economic returns ([Mai et al., 2016](#)). As such, we argue that employees holding a transactional contract will be keener to forsake helping behaviours, as their immediate concern is the protection of personal resources that may be needed in case they intend to leave the employer in the near future. In addition, some authors ([Chou et al., 2021](#); [Lanaj et al., 2016](#); [Yang et al., 2018](#)) underline the "dark side" of helping behaviours towards co-workers because the provision of support might drain personal resources and diminish the job performance of the provider of support. This might be particularly the case with demanding professions, such as nursing, that deals with human fragilities and is recognized as a highly demanding and stressful job ([Yang et al., 2018](#)). In the study by [Chou et al. \(2021\)](#), helping co-workers caused resentment because personal resources were wasted helping others that showed little to no effort during the course of being helped, and due to reduced helpers' in-role performance because his/her resources were spent aiding co-workers. This meant that the employee shared valuable and unique resources (i.e. knowledge, skills, time) that could not be recuperated, often followed by a lack of reciprocation by the co-workers that benefited from the help.

[Quratulain et al. \(2018\)](#) show that perceptions of negative reciprocity, where mutual distrust and self-interest underpin the exchange relationship, fully mediate the negative

relationship between PCB and employees' affective organizational commitment. We may establish the same reasoning for the nurses who experience a PCB and have a transactional contract type. As they perceive the employment relationship as purely monetizable and instrumental, these nurses will be more prone to withdraw any sources of support (interpersonal or otherwise) to cope with perceived resources loss and avoid resource depletion. We may also argue that the nurses holding a transactional PC will be more aware of the negative consequences of helping behaviours because of the employment relationship's purely economic nature and the employment contract's short duration. Consequently, the nurses holding a transactional contract are expected to not feel at ease acquiring additional social support resources from third parties (i.e. co-workers or patients and patients' families). Following the previous rationale, we hypothesize the following:

- H3.* A transactional PC moderates the relationship between nurses' perception of PCB and OCB, such that this indirect relationship maintains: (a) the negative relationship between nurses' PCB and OCB-I; and (b) the negative relationship between nurses' PCB and OCB-O.

Overall, less empirical evidence exists on the effects of a balanced PC on employees' attitudes and behaviours. [Shih and Chen's \(2011\)](#) research shows that a balanced PC is the most likely to encourage employee OCB because a balanced PC offers the least probability of resources loss and the highest likelihood of resources gain. In the same vein, the research by [Lo Presti et al. \(2019\)](#) confirms that those employees holding a balanced PC exhibited the highest levels of OCB in comparison with the relational type. The authors explain this result by the rise in the adoption by employees of boundaryless careers, whose premises resemble a balanced PC – employees looking for self-development and expecting the organisation to enhance their knowledge and skills. In addition, in [Quratulain et al.'s \(2018\)](#) research, the employees holding balanced reciprocity norms – which are founded on the immediacy of return of equal value and mutuality of interest – exhibited higher levels of trust in the employment relationship. Usually, high levels of trust and agreement between management and employees alleviate the negative effects of PCB and counterbalance employees' feelings of resources loss and depletion ([Bolino et al., 2015](#); [Cregan et al., 2021](#); [Griep and Bankins, 2022](#)).

We may hypothesize that nurses holding a balanced PC may be willing to reciprocate positively to co-workers' and patients' needs, even after a PCB, because they still trust that the resources gained will be obtained to some degree in the near future. Hence, employees envision some degree of resources gained by seeking help from co-workers to perform their tasks or information better to understand their work environment better ([Lim et al., 2020](#)). The same may not happen with OCB-O because when employees perceive low organizational support, they experience more "citizenship fatigue, which refers to employees feeling worn out, tired, or on edge" due to their engagement in OCB ([Bolino et al., 2015](#), p. 57). Following the previous rationale, we hypothesize the following:

- H4.* A balanced PC moderates the relationship between nurses' perception of PCB and OCB, such that this indirect relationship maintains: (a) the positive relationship between nurses' PCB and OCB-I; and (b) the negative relationship between nurses' PCB and OCB-O.

## Method

### *Sample and data collection procedures*

We considered the survey questionnaire suitable to test the study's hypotheses. Hence, we administered a survey to nurses working in a public corporate hospital (PCH) in which the



State was the single shareholder, but the executive board functioned according to corporate/private law and was accountable for financial expenditures. Because PCH is the type of health-care organization within the NHS that has known the most profound governance changes in recent years, we decided to conduct an empirical study. In addition, one of the researchers was a nurse working in this hospital, making accessing the sample easier. Thus, we employed a convenience sampling strategy. A request to conduct the empirical study was sent to the hospital Ethics Committee and the Executive Board, and the study's ethical approval was granted.

The survey was administered in person with two follow-up reminders approximately three weeks after the initial distribution. The participants were asked to complete the anonymous questionnaire and return it in a sealed envelope to the researcher.

Overall, 210 questionnaires were distributed among the nurses, and we received 159 completed responses: a response rate of 75.7%. The respondents' average tenure in the hospital was eight years ( $SD = 6$ ), 83% were women and the respondents' mean age was 39 years. Concerning their marital status, most respondents were single (53%), and 92% held a graduate degree. In terms of contract arrangement, 61% of the nurses had an individual employment contract (non-tenured), while only 29% held an employment contract that offered a tenured position in the organization (i.e. employment contract in public functions).

#### *Scales measurement procedures*

For PC type and PCB measurement, the scales were taken from the original English versions of Rousseau's (2000) and Robinson and Morrison's (2000) studies, respectively. They followed a back-translation procedure to ensure item equivalence. For the OCB measurement, we used a scale validated with a sample of Portuguese nurses (Gaspar and Jesuino, 2009). This scale was adopted from the original English versions of Williams and Anderson's (1991) and Smith *et al.*'s (1983) studies. All ratings used a five-point Likert scale.

*PCB:* The nurses were asked to specify to what extent they agreed that their organization had fulfilled the perceived promises. The scale comprised five items, and three were reverse-scored; a sample item included "I have not received everything promised to me in exchange for my contributions".

*PC types:* We measured PC type considering nurses' perceptions of obligations between parties in the employment relationship. We used a short version of Rousseau's (2000) scale comprising 18 items. The measures related to the relational PC contained eight items (e.g. "Offer me with secure employment"), the balanced PC entailed seven items, a sample item included "Opportunities for promotion". The transactional PC entailed three items (e.g. "Require me to do only limited duties I was hired to perform").

*OCB:* We measured OCB with a scale comprising 35 items. The scale distinguished between OCB-O (17 items) and OCB-I (18 items). The nurses were asked to specify the degree to which each behaviour was important to them. An example of an OCB-I statement was: "Helps others who have heavy workloads by doing extra work". One example of an OCB-O statement included: "Shows pride in belonging to the organization".

#### *Common method bias*

We followed several steps to minimize common method bias. Firstly, we used multidimensional scales for each construct to avoid and disperse short-term memory effects related to previous scales. Secondly, we assured respondents of anonymity and performed a pre-test. Thirdly, in *post hoc* analysis, we used Harman's single factor test in computing a principal component analysis (Podsakoff *et al.*, 2003). Four components with eigenvalues

above 1.0 were obtained. The largest factor accounted for 35% of the variance, and a single-factor solution did not emerge. Hence, the first factor was not associated with the majority of variance; thereby, systematic variance was not a problem in the present study.

## Results

### *Analysis procedures*

To test the research model, we used partial least squares (PLS) with SmartPLS v.3.3 (Hair *et al.*, 2017). This variance-based structural equation modelling technique combines principal component analysis, path analysis and regression to evaluate theory and data. We have selected PLS because:

- it handles small sample sizes with the required level of rigor;
- it deals with complex models with many indicators and constructs; and
- compared to covariance-based SEM, PLS shows several advantages in terms of estimation of interaction effects (Fornell and Larcker, 1981; Hair *et al.*, 2017).

More specifically, this study relies upon a measurement model in which the proposed constructs are considered reflective.

In a single, systematic and comprehensive analysis, PLS are computed in two stages:

- (1) the assessment of the measurement model, i.e. the relationships between the latent variables and their indicators; and
- (2) the structural model: the part of the model that establishes the relationships among different latent variables (Hair *et al.*, 2017).

This sequence ensures that the constructs' measures are valid and reliable before attempting to draw any conclusions regarding relationships among constructs.

### *Measurement model*

PLS evaluates reflective constructs in terms of their individual reliability, construct reliability, convergent validity and discriminant validity (Hair *et al.*, 2011). Individual item reliability is assessed by analysing standardized loadings, which should ideally exceed 0.70 (Carmines and Zeller, 1979). In the present study, a large percentage of values accomplish this requirement.

Construct reliability is evaluated using three measures of internal consistency: Cronbach's alpha, rho\_A and composite reliability (Hair *et al.*, 2017). Reliabilities should account for values above 0.70 (Henseler *et al.*, 2016). Convergent validity is usually evaluated by significant standardized loadings ( $t > 1.96$ ) and the average variance extracted (AVE), which in the present study ranged from 0.501 to 0.663. All latent variables achieve convergent validity, given that their AVEs exceed the 0.50 cut-off point level (see Appendix 1).

The discriminant validity indicates the extent to which a given construct differs from others. By using SmartPLS (v.3.3), we assessed this type of validity by adopting two approaches: the Fornell–Larcker criterion and the strictest HTMT<sub>0.85</sub> criterion (Hair *et al.*, 2017). Concerning the former criterion, the six major constructs achieved discriminant validity, i.e. by confirming that the diagonal elements are higher than the off-diagonal elements in the corresponding rows and columns. About the second criterion, the HTMT criterion, the obtained values were compared to a predefined threshold. Although this criterion is arguable as it may vary between 0.85 (the strictest value) and 0.90, our obtained values are lower than the most conservative criterion (Hair *et al.*, 2017). These results suggest that all constructs are empirically distinct (Table 1).

*Structural model*

The structural model is evaluated considering the magnitude and significance of path coefficients, their  $R^2$  values and standard errors. To generate the structural path coefficients, the bootstrap technique (5,000 resamples) was used as it produces a large number of subsamples from the original sample through the systematic deletion of observations (Hair *et al.*, 2017). Two models were computed: the baseline model and the model with the interactions. Here, we were interested in analysing the isolated effect of each moderator (relational, transactional and balanced) on the two outcomes. Using SmartPLS, we followed the product-indicator approach to test each moderating relationship, i.e. the product of each indicator of each independent variable with each indicator of the moderator was computed. Hence, all possible pairwise products become indicators of the latent interaction variable (Chin *et al.*, 2003; Fassot *et al.*, 2016). We use the following approach: firstly, we have estimated the influence of the predictor (PCB) on each criterion variable (OCB-I and OCB-O) – baseline model alone; secondly, the direct impact of the moderating variable on the criterion variable, including the direct effects; and thirdly, the influence of the interaction variable on the criterion variable including the direct effects (Table 2 and Figures 1–3).

Before examining the structural path coefficients, the analysis of OCB-I was fine-tuned to distinguish whether co-workers, patients and their families (clients) should be treated as different constructs. Results from a hierarchical multiple regression (see Appendix 2) show that these two dimensions of OCB-I are not very different from each other and could be combined into one single dimension. This dimension will be used in subsequent analysis. Concerning the direct effects (baseline model), the data support *H1a*, which maintains that nurses' perception of PCB has a positive association with their willingness to exhibit OCB-I as a way to acquire additional social resources ( $\beta = 0.180$ ;  $p < 0.05$ ). Similarly, *H1b*, which hypothesizes that nurses' perception of PCB has a negative association with their willingness to exhibit OCB-O to conserve existing personal resources, is also confirmed ( $\beta = -0.235$ ;  $p < 0.01$ ) (Table 2).

Concerning the interaction effect of a relational PC on the relationship between PC\_Breach and OCB-I, the results show a significant interaction effect of the relational PC on OCB-I [ $\text{PC\_Breach} \times \text{Relational} \rightarrow \text{OCB-I}$  ( $\beta = 0.192$ ;  $p < 0.05$ )]. Nevertheless, the results show that the PC\_Breach–OCB-I direct link still remains non-significant, leading to support partially *H2a*.

Similarly, there is a significant interaction (moderation) effect of a relational PC on the PC\_Breach–OCB-O link ( $\beta = -0.196$ ;  $p < 0.05$ ). Relevant to mention that the inclusion of this interaction effect maintained the PC\_Breach–OCB-O direct link negative, leading us to support *H2b* (Table 2) fully. As a complementary analysis, the scatterplots (Figures 1–3) calculated from the dichotomization of each moderator variable (relational PC, transactional PC and balanced PC) were computed ("1" represents "low" and "2" is high). The division criteria are based on the median of each moderator. Figure 1(a) shows that, concerning OCB-I (*H2a*), there is a clear moderate/positive interaction of the relational PC (regression line representing high) on the PC-Breach–OCB-I relationship. The same does not apply to Figure 1(b), which shows a moderate negative interaction of the relational PC (regression line representing high and low) on the PC-Breach–OCB-O relationship.

Concerning the second interaction (moderation) effect of the transactional PC, results show a non-significant interaction effect of a transactional PC on  $\text{PC\_Breach} \times \text{Transactional} \rightarrow \text{OCB-I}$  ( $\beta = 0.119$ ;  $p > 0.05$ ). In addition, the PC\_Breach–OCB-I direct link remains non-significant, which leads us not to support *H3a*.

Concerning OCB-O, a non-significant interaction effect of a transactional PC on the PC\_Breach–OCB-O link was found ( $\beta = -0.023$ ;  $p > 0.05$ ), although the inclusion of

	CR	CA	AVE	1	2	3	4	5	6	HTMT	1	2	3	4	5
1. OCB-I	0.92	0.80	0.51	(0.66)							0.74				
2. OCB-O	0.88	0.86	0.51	0.68	(0.65)						0.14	0.23			
3. PC_Breach	0.99	0.87	0.66	0.04	-0.17	(0.81)					0.33	0.24	0.16		
4. Relational	0.85	0.80	0.52	0.32	0.21	0.15	(0.67)				0.48	0.30	0.20	0.71	
5. Balanced	0.86	0.81	0.56	0.44	0.28	0.16	0.61	(0.75)			0.26	0.29	0.11	0.58	0.36
6. Transactional	0.82	0.71	0.50	0.17	0.17	0.06	0.29	0.21	(0.65)						

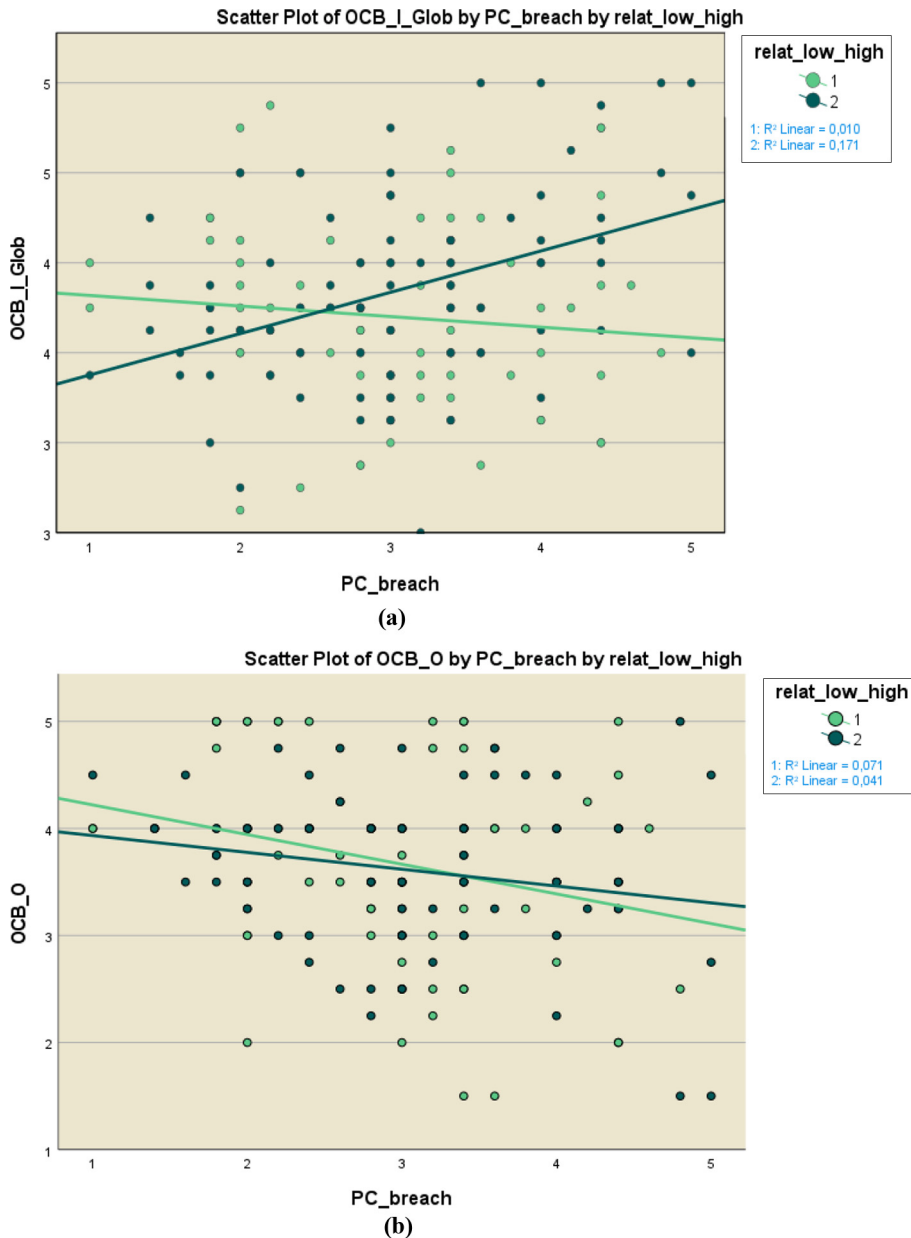
**Notes:** OCB-I = organizational citizenship behaviour towards the individual; OCB-O = organizational citizenship behaviour towards the organization; PC\_Breach = psychological contract breach; relational psychological contract; balanced psychological contract; transactional psychological contract; CR = composite reliability; CA = Cronbach's alpha; AVE = average variance extracted; The diagonal (in italics) shows the square root of the AVE

**Source:** Created by the authors

**Table 1.**  
Reliabilities and  
correlations

**Table 2.**  
Structural  
coefficients and  
moderating effects

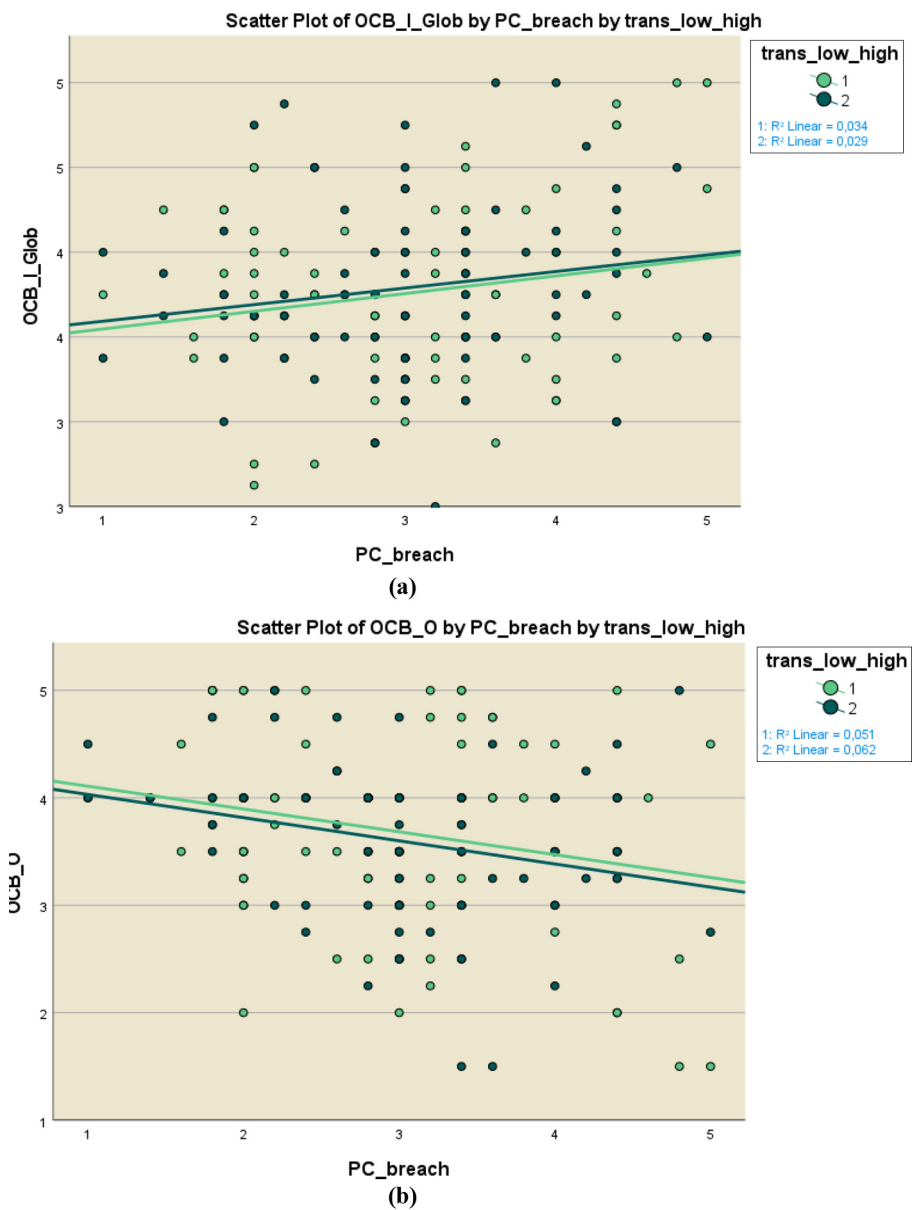
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**Figure 1.**  
Scatterplots of (a)  
OCBI\_I-Relational  
(Low-High) and (b)  
OCBI\_O-Relational  
(Low-High)

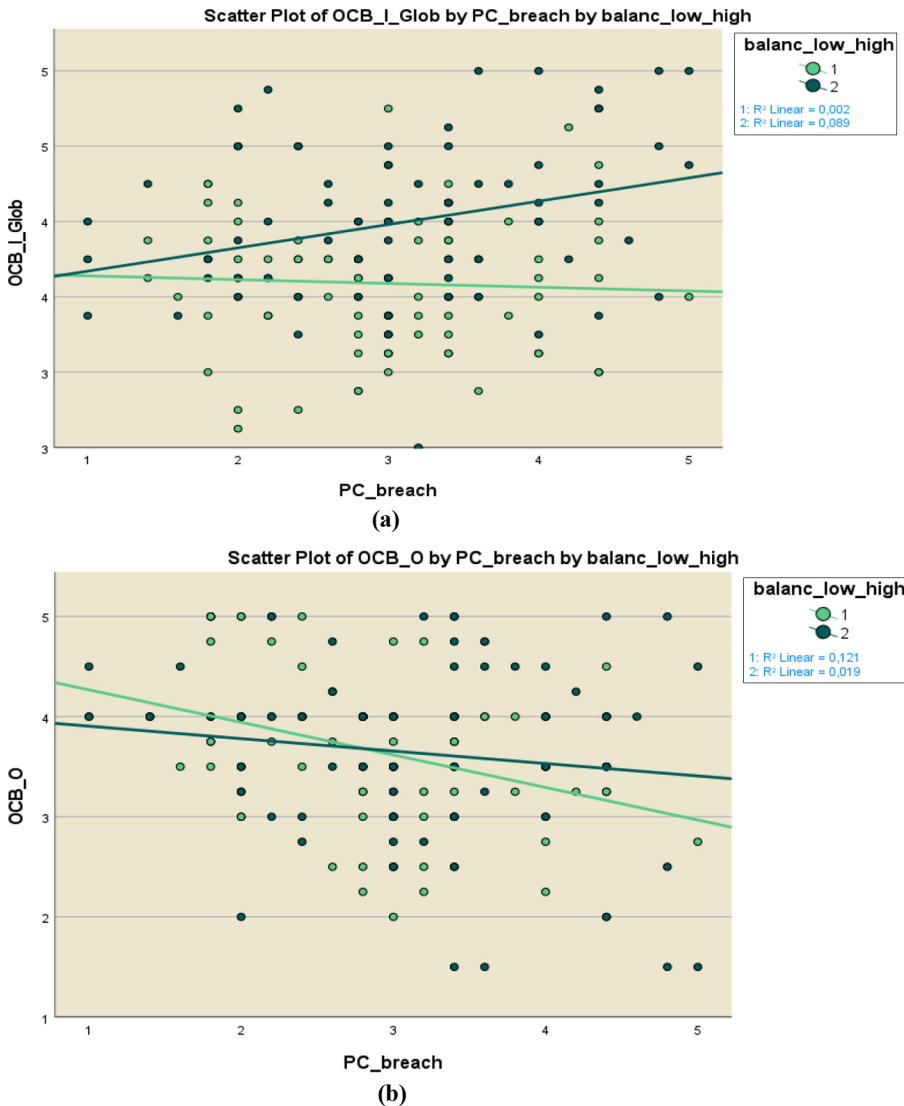
**Source:** Created by the authors





**Figure 2.**  
Scatterplots of (a)  
OCBI\_I-Transactional  
(Low-High) and (b)  
OCBI\_O-Transactional  
(Low-High)

**Source:** Created by the authors



**Source:** Created by the authors

**Figure 3.**  
Scatterplots of (a)  
OCBI\_I-Balanced  
(Low-High) and (b)  
OCBI\_O-Balanced  
(Low-High)

this interaction still keeps the PC\_Breach–OCB-O direct link significant. This leads us to support *H3b* partially [Table 2, Figure 2(a) and (b)]. As a complementary view, Figure 2(a) shows that, in the OCB-I case (*H3a*), there is a slight increase of both regression lines representing low and high transactional PC on the PC\_Breach–OCB-I relationship. On the contrary, concerning the transactional PC on the PC\_Breach–OCB-O connection, Figure 2(b) shows a slight decrease in both regression lines [Figure 2(b)].

Concerning the third interaction (moderating) effect of a balanced PC, results show that there is a significant interaction effect of a balanced PC on PC\_Breach  $\times$  Balanced  $\rightarrow$  OCB-I ( $\beta = 0.234$ ;  $p < 0.05$ ), although the PC\_Breach–OCB-I direct link kept non-significant. This leads us to support *H4a* partially.

Concerning OCB-O, a non-significant interaction effect of a balanced PC on the PC\_Breach–OCB-O link was found ( $\beta = -0.117$ ;  $p > 0.05$ ), although the inclusion of this moderator kept the PC\_Breach–OCB-O link significant. This leads us to support *H4b* (Table 2) partially. To complement this analysis, Figure 3(a) shows that, in the OCB-I case (*H4a*), there is a positive interaction of the balanced PC on the PC\_Breach–OCB-I relationship (for high balance PC). However, both regression lines (low and high balanced PC) show divergent behaviour. Concerning OCB-O, both regression lines (low and high) evidence a negative behaviour, which suggests that the balanced PC interacts negatively with the PC\_Breach–OCB-O relationship [Figure 3(b)].

Regarding the predictive power of the structural models, results show moderate predictive power for both dependent variables (OCB-I and OCB-O). In line with Chin (1998),  $R^2$  values of 0.67, 0.33 and 0.19 can be described as substantial, moderate and weak. The proportions of the total variance ( $R^2$ ) in each endogenous construct explained by Model 3 are 29% for OCB\_I and 12% for OCB\_O, which could be stronger. Complementing the  $R^2$  analysis, the effect size (Cohen  $f^2$ ) was also computed for each endogenous variable, and some values are above 0.16, considered a moderate effect size. For instance, for the direct model, a moderate effect size was found on both PC\_Breach  $\rightarrow$  OCB\_I ( $f^2 = 0.18$ ) and PC\_Breach  $\rightarrow$  OCB\_O ( $f^2 = 0.16$ ). Finally, we also calculated the standardized root mean residual (SRMR) to assess the discrepancy between the observed correlations and the model-implied correlations (Hair *et al.*, 2017). The results show an SRMR of 0.079 for the global model. The cut-off point is 0.08 (Hair *et al.*, 2017).

## Discussion

Our study draws from COR theory (Hobfoll *et al.*, 1990, 2018) to propose that nurses may choose to counteract the loss of resources following a PCB by investing more in stronger interpersonal relationships with co-workers, and patients and patient's families, as a way to recuperate from resources loss and gain new and additional social resources. In addition, the moderating effect of PC type reinforces the relationship between a PCB and OCB, in a way that relational and balanced PC types still support OCB-I positively but negatively OCB-O. Furthermore, the results show that a transactional PC does not negatively reinforce the link between PCB and OCB-I, and the negative interacting effect of a transactional PC on the PCB and OCB-O link is only partially supported. To the best of our knowledge, our study is the first to use PC type as a moderator in PCB and OCB links. Hence, by focusing on the moderating effect of PC type, our results extend extant research by highlighting the relevance of distinct PC contents to OCB-I and OCB-O exhibitions.

Following the tenets of social exchange theory (Rousseau, 1989; Coyle-Shapiro *et al.*, 2019) and COR theory (Hobfoll *et al.*, 2018), this study adds to existing research by showing that a PCB does not necessarily entail a decrease or a termination of OCB. Despite previous studies showing a negative relationship between PCB and overall OCB (Bolino *et al.*, 2015; Deng *et al.*, 2018; Griep and Bankins, 2022; Jahanzeb *et al.*, 2020; Rodwell and Ellershaw, 2015; Zafri, 2012; Zhong *et al.*, 2023), few research has explicitly investigated if helping behaviours vary according to the target or recipient of help (i.e. the organization vs co-workers and other parties). Hence, most research overlaps the recipients of OCB, assuming that the employee/helper will behave in the same manner, independently of the recipient of help.

Our study's results fully support *H1a* and *H1b*. Hence, nurses' OCB-I display remains even following a PCB as a way to gain social resources. In contrast, a nurses' OCB-O ceases following a PCB to conserve existing personal resources (*H1a* and *H1b*, respectively). This is an important finding because it highlights the importance of co-worker's support and how forms of workplace friendship might influence employee's beliefs and perceptions (Ho *et al.*, 2006) regarding the acquisition of new or additional resources, i.e. resources gain. In our study, the nurses seem to provide support to co-workers, patients and patient's families even after a PCB by helping with heavy workloads or passing along the information to co-workers. Our study's results concur with others (Cruz *et al.*, 2023; Kiazad *et al.*, 2014), proving that a PCB does not necessarily entail a decrease in OCB-I and interpersonal relationships. Thus, this research brings new evidence to social exchange and COR theories by highlighting the importance of social resources as a mitigator in the relationship between nurses' PCB and OCB-I.

As to OCB-O, our study shows that nurses are most likely to resent the organization for broken promises and forgo the helping behaviours they assess as resources depleting. This result is in accordance with Griep and Bankins's (2022) research that shows that low levels of organizational support, and low trust in management, were followed by employees' perception of heavy resources loss and the disruption of social exchange norms. Hence, we contend that nurses may perceive a PCB as a sign that the hospital no longer cares about them or is less likely to recognise nurses' contributions and, therefore, is less willing to support them.

In regards to the interacting and indirect effects, we highlight the fact that a relational PC partially supports, in a positive way, the relationship between nurses' PCB and OCB-I. Nevertheless, the direct relationship between PCB and OCB-I remains non-significant. In addition, as hypothesized, the results fully support the negative interacting effect of a relational contract on the PCB → OCB-O link.

In our study, the nurses holding a relational PC will be the ones who envision a long-term employment relationship based on steady employment, good pay and job perks. In line with De Clercq *et al.* (2021) research, we argue that the nurses holding a relational PC are the ones feeling more disappointed towards the employer because it has failed to keep its promises. Hence, they may perceive that the hospital no longer cares for their personal well-being and a long-term employment relationship. Therefore, they will be highly motivated to protect and conserve personal resources following a PCB because they also have more to lose (Kiazad *et al.*, 2014).

The results are surprising concerning the interacting and indirect effects of a transactional PC on the PCB and OCB links. In our study, we assumed that a transactional PC would maintain a negative relationship between nurses' PCB and both OCB-I and OCB-O. Noteworthy, our data did not support the assertion that a transactional PC would negatively reinforce the link between PCB and OCB-I. On the other hand, the negative interacting effect of a transactional PC on the PCB and OCB-O link was only partially supported. Hence, holding a transactional PC does not equate to fewer helping behaviours concerning co-workers, patients and their families. Thus, we can conclude that organizations cannot simplistically assume that a relational or a balanced PC will foster higher levels of OCB. Interestingly, Lo Presti *et al.* (2019) found a null association between a transactional PC and OCB display among a sample of Italian employees. According to these authors, individuals progressively adopt career models that promote proactivity, career self-management strategies and a boundaryless mindset; consequently, more individuals will embrace a transactional PC rather than a relational one.

The previous results also concur with [De Clercq \*et al.\*'s \(2021\)](#) research that shows that employees' job-related anxiety is stronger to the extent that they believe that their PC comprises relational obligations but weaker when it contains transactional contents. Thus, holding a transactional PC makes the experience of broken promises and contract violations less offensive and less emotionally intrusive. In the end, a transactional contract violation may not diminish an employee's job performance because of reduced job strain ([De Clercq \*et al.\*, 2021](#)).

Lastly, as regards the interacting and indirect effects of a balanced PC on the PCB and OCB-I and OCB-O links, the moderating effects are partially supported for both interactions. What stands out from this discussion is the significant interaction effect of a balanced PC on the PCB–OCB-I link. In addition, a non-significant interaction effect of balanced PC on PCB and OCB-O was found. However, the inclusion of this moderating variable (balanced PC) leads to a significant negative effect on PCB–OCB-O direct relationship and a non-significant effect on the PCB–OCB-I direct relationship. Interestingly, in both cases, of relational PC and balanced PC, the nurses' decision to cease the display of OCB-O may be related to "citizenship fatigue" ([Bolino \*et al.\*, 2015](#)) and the perception that they have to expend significant personal resources in case they decide to cope with the hospital pressures to display OCB. Therefore, as they perceive excessive resource loss, they tend to conserve what they have left as a defence mechanism to avoid resource depletion ([Bolino \*et al.\*, 2015](#)). To sum up, our results highlight the importance of paying more attention to PC contents (relational, balanced and transactional elements) because they influence to a great extent the adoption (or not) of OCB.

As a complementary approach, we conducted six in-depth interviews with the nurses' immediate supervisors (i.e. chief nurses) to better comprehend the PCB's nature and the retribution targets. They shared their experiences regarding their service unit/department. Four of the interviewees were women, and their mean age was 48 years. The chief nurses supervised the following service units: paediatrics surgery, polyvalent intermediate care unit, emergency operating room, emergency care, neonatology and otorhinolaryngology.

Firstly, all of them agreed that the hospital had failed to meet important employment obligations. Particularly highlighted was the issue of salary cuts and loss of monetary perks:

The nurses doing shift work received in the past a supplement for the hours they did at night or late in the afternoon. And that was reduced by 25 percent. (...) At the moment, almost all the nurses want to request a fixed schedule. Because we got to the point that a nurse doing nights and weekends earns 1200€ or 1100€, while a nurse with a fixed schedule earns 1000€, and does not make nights or weekends. (Interviewee 1)

Secondly, another reason that led to PCB was the unmet career advancement promises that were broken as the nursing profession underwent significant changes. These changes curtailed the nurse career from five ladders to only two: nurse and chief nurse. Overall, this meant that the nurses had fewer steps to move up and fewer chances of being promoted shortly. All six interviewees referred to the restructuring of the nursing career as a source of profound discontent among the nurses:

(...) something that colleagues also often talk about is that the category of nurse specialist no longer exists in the new career. So, at the moment, a specialist nurse may be working in their specialism field, but the following day he/she may be working as a generalist nurse, so [...] there is a bit of uncertainty, you see? (...) Most nurses do not identify with their functional role and career changes [...]. (Interviewee 2)

Thirdly, four chief nurses talked about the hospital having less money to spend on the job training and of nurses having to pay for their skill development and self-actualization:

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The training it's all done at the nurse's expense, the nurses have to pay, aha, and it's done in their own free time and with work overload. (Interviewee 4)

On-the-job training has become [...] part of an investment. So, as an investment, it has to be accounted before the hospital administration. (Interviewee 5)

In addition, other motives leading to PCB referred to nurses being asked systematically to do extra hours and/or the devaluation and lack of recognition of the nurses' efforts by the hospital administration:

(...) maybe if the nurses were included in decision-making they would feel more appreciated, and if there were more opportunities for some nursing projects to develop, which are really good [...]. (Interviewee 6)

Departing from these testimonies, we may conclude that the breached PC contents relate to a relational or balanced contract type. In accordance, all the interviewees agreed that the nurses' complaints and feelings of resentment were felt more severely towards the hospital administration and not towards co-workers or patients:

(...) and fortunately, last year, we had many nurses absent from work [on medical or maternity leave], and other nurses [co-workers] ended up [...] offering to cover for them and do the shifts and so on (...). (Interviewee 2)

### *Managerial implications*

The results highlight the relevance of investing in human resources management (HRM) practices centred on employee involvement and participatory supervision styles for ensuring OCB display at the workplace. The support of the immediate supervisor (Atkinson, 2007; De Clercq *et al.*, 2021; Yang *et al.*, 2018) in developing HRM practices tailored to health-care personnel is of major importance (e.g. the offer of on-the-job training and development, mentoring and more supporting management styles) to keep these professionals involved in OCB. Therefore, we suggest that organizations and, particularly, immediate supervisors pay attention to reducing PCB by increasing sources of social support. Nurses' immediate supervisors need to be more proactive in identifying employees' that may feel betrayed by the hospital administration. The chief nurses interviewed stressed the lack of material and financial resources and that they could not do much regarding salary increases or more adequate working conditions. Hence, we recommend to supervisors that, in conjunction with the HR department, they create a set of guidelines for how nurses should be treated, underlining the issues of fairness and dignity at work, and offering nurses informational resources about *why* promises have not been kept. This might mitigate the sense of betrayal among nurses (De Clercq *et al.*, 2021) and make them not forgo OCB-O engagement.

As underlined by Griep and Bankins (2022), one of the most important aspects of managing an employees' PC relates to what happens after a PCB. It is important to restore trust in management immediately after a PCB is spotted. In that regard, immediate supervisors might have an important role to play by providing nurses with honest communication on behalf of the organization. It will be meaningful to nurses if they see that their supervisors offer alternative organizational resources that may fulfil their breached obligations – for example, developing communities of practice to foster learning among co-workers or implementing nurses' projects and ideas about the functioning of the team or specific work procedures.



*Study limitations and suggestions for future research*

Firstly, survey findings are based on self-report measures, which may lead to skewed answers by respondents. Secondly, it is worth remembering the cross-sectional design, the contextual limitations of the study (e.g. hospital setting) and the use of convenience sampling.

Future research should look into the role played by supervisors' trust (Atkinson, 2007) in the employment relationship, which may be particularly important for the perception of PCB and, especially, the OCB exhibition. Furthermore, the chief nurses interviewed pinpointed the importance of age in OCB display, as they perceived older nurses to engage in more OCB. As an avenue for future research, the generational differences among nurses regarding the exhibition of OCB may be worth researching.

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**Table A1.**  
Measurement model  
and reliability  
measures

Construct/Dimension/Item	Factor loading	t-test
<i>Psychological contract breach (CR = 0.90; rho_A = 0.92; CA = 0.87; AVE = 0.66)</i>		
IT1: Almost all the promises made by my employer during recruitment have been kept so far (Reversed)	0.915	11.86
IT2: I feel that my employer has come through in fulfilling the promises made to me when I was hired (Reversed)	0.924	11.70
IT3: So far, my employer has done an excellent job of fulfilling its promises to me (Reversed)	0.880	10.12
IT4: I have not received everything promised to me in exchange for my contributions	0.611	3.574
IT5: My employer has broken many of its promises to me even though I've upheld my side of the deal	0.692	4.82
<i>OCB-I and OCB-O*</i>		
<i>OCB-I (CR = 0.92; rho_A = 0.91; CA = 0.80; AVE = 0.51)</i>		
IT18: Attends to other co-worker's requests (e.g. work shift exchange, weekend exchange)	0.632	11.61
IT19: Helps co-workers who have heavy workloads by doing extra work	0.729	20.25
IT20: Passes along information to co-workers	0.746	20.41
IT21: Helps solving conflicts within the team	0.633	10.90
IT22: Helps solving conflicts within the work unit/service	0.617	8.95
IT23: Takes time to collect information before deciding or assign duties to others	0.620	10.26
IT26: Goes out of his/her way to assist all family patients' (e.g. hospitalized or not in his/her work unit/service)	0.623	8.775
IT27: Helps and encourages contact between patients and their families	0.674	12.66
IT28: Whenever necessary, he/she bends the rules and adapts them to the work unit/service needs	0.674	11.33
IT29: Takes time to listen to patients or their family's requests/needs, even after hours	0.675	11.80
IT30: Does not leave the patient or their family unattended, without informing them, to perform other tasks (with the exception of emergency situations)	0.601	7.10
IT32: Listens to complaints and directs them, without exerting pressure towards others in the work unit	0.602	10.04
IT33: When informing the family's patients about stressful situations (e.g. death, life risk, emotional distress), he/she looks for a quiet room even if the work unit does not provide one	0.713	16.51
IT34: Voluntarily informs patients about their rights	0.753	16.3
IT35: When talking to the family's patients does not use jargon or other technical terms, as a way to ensure that the family understands what is being said	0.704	14.15
<i>OCB-O (CR = 0.88; rho_A = 0.87; CA = 0.86; AVE = 0.50)</i>		
IT1: Shows pride in belonging to the organization	0.698	5.03
IT2: Shows pride in belonging to his/her work unit/service	0.874	4.87
IT3: Voluntarily makes positive comments about the organization	0.900	4.50
IT4: Voluntarily makes positive comments about his/her work unit/service	0.889	4.81
IT5: Conserves and protects organizational property	0.687	8.34
IT7: Does not complain, contributing to a "healthy" workplace	0.641	6.79
		(continued)

Construct/Dimension/Item	Factor loading	t-test
IT8: Voluntarily informs about deteriorated medicines and or work tools	0.722	7.85
IT9: Shows concerns about his/her work unit health and safety conditions	0.659	5.45
IT10: Spends time improving work unit/service conditions	0.636	7.26
IT12: Shows availability to substitute for others, whenever the organization requests	0.612	5.06
IT13: Shows availability to participate in work unit meetings, even after hours	0.601	5.58
<i>Transactional PC (CR = 0.72; rho_A = 0.81; CA = 0.71; AVE = 0.50)</i>		
IT13: It has made no promises to continue my employment	0.601	2.01
IT15: Require me to do only limited duties I was hired to perform	0.941	2.54
IT18: Limited involvement in the organization	0.599	1.99
<i>Relational PC (CR = 0.85; rho_A = 0.82; CA = 0.80; AVE = 0.52)*</i>		
IT7: Steady employment	0.698	8.29
IT8: Stable benefits to employees' families	0.642	5.82
IT9: Concern for my personal welfare	0.760	10.9
IT10: Sacrifice's short-term organizational interests for employee interests	0.603	4.04
IT16: Secure employment	0.760	11.38
IT17: Wages and benefits I can count on	0.684	9.44
<i>Balanced PC (CR = 0.86; rho_A = 0.82; CA = 0.81; AVE = 0.56)*</i>		
IT2: Opportunities for promotion	0.701	6.57
IT3: Set ever more difficult and challenging performance goals for me	0.806	18.99
IT4: Support me to attain the highest possible levels of performance	0.682	7.57
IT5: Advancement within the organization	0.726	8.36
IT6: Support me in meeting increasingly higher goals	0.836	22.07

**Note:** \*A number of items were deleted from the original scales because they did not accomplish the minimum requirements of reliability

**Sources:** The PC type and PCB measurement scales were adapted, respectively, from [Rousseau \(2000\)](#) and [Robinson and Morrison's \(2000\)](#) original work. The OCB measurement scales were adapted from [Gaspar and Jesuino \(2009\)](#). Appendix 1 was created by the authors

Psychological  
contract  
breach

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**Table A1.**



**Table A2.**  
Hierarchical multiple  
regression

Independent variables	Model 1 Coefficient (t-test)		Model 2 Coefficient (t-test)	
	OCBI_I_CoWorkers	OCBI_I_Patients	OCBI_I_CoWorkers	OCBI_I_Patients
<i>Main effects</i>				
PC_Breach <sup>†</sup>	0.061 (0.831)	−0.039 (−0.514)	0.014 (0.193)	−0.067 (−0.870)
Relational <sup>†</sup>	−0.013 (−0.143)	0.107 (1.092)	0.001 (−0.003)	0.111 (1.154)
Transactional <sup>†</sup>	0.019 (0.251)	0.068 (0.844)	0.021 (0.281)	0.063 (0.800)
Balanced <sup>†</sup>	0.431*** (4.780)	0.246** (2.611)	0.495*** (5.609)	0.292*** (3.113)
<i>Interaction effects</i>				
PC_Breach × Relational			0.205** (2.428)	0.239** (2.657)
PC_Breach × Transactional			0.017 (0.234)	0.032 (0.417)
PC_Breach × Balanced			0.121 (1.450)	−0.007 (−0.075)
R <sup>2</sup>	0.441	0.343	0.521	0.419
Adjusted R <sup>2</sup>	0.173	0.095	0.238	0.137
F <sup>2</sup> -Statistic	9.289	5.134	5.351	3.522
<b>Notes:</b> <sup>†</sup> Centred in relation to mean; ** <i>p</i> < 0.01; *** <i>p</i> < 0.001				
<b>Source:</b> Created by the authors				

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