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**The impact of economic factors on the relationships  
between psychological contract breach and work outcomes:  
a meta-analysis**

Journal:	<i>Employee Relations</i>
Manuscript ID	ER-03-2020-0095.R2
Manuscript Type:	Research Paper
Keywords:	Psychological contract breach, Job performance, Turnover, Inflation, Unemployment

**Abstract****Purpose**

The purpose of this paper is to explore the macro-economic factors that may moderate the psychological contract breach and work outcome relationship.

**Design/methodology/ approach**

This study conducted a meta-analysis based-on data from 134 studies.

**Findings**

The study revealed that the inflation rate and the unemployment rate of a country moderated the association among employee psychological contract breach, job performance and turnover.

**Research limitations/ implications**

The availability of more detailed macro-economic data against the PCB and outcome relationship for other countries and studies examining the impact of micro-economic data for psychological contract breach and outcome relationship would provide a better understanding of the context.

**Social implications**

Employment policies to capture the impact of macro-economic circumstances as discussed.

**Originality/value**

The paper contributes to understanding the impact of macro-economic indicators on the relationships among psychological contract breach, job performance and turnover.

**Keywords:** Psychological contract breach, job performance, turnover, inflation rate, unemployment rate, meta-analysis

## Introduction

Psychological Contract Breach (PCB) has been identified as a strong driver of employee work outcomes such as job performance and turnover (Bal *et al.*, 2008; Zhao *et al.*, 2007). PCB refers to employees' perception of their organizations not fulfilling the obligations towards them. Although it has been long acknowledged that perceptions of PCB may depend on the context (Metz *et al.*, 2012; Pate, 2006), the national economic context has largely been overlooked in PCB research. Recently a few studies have hinted that the national economy can have an impact on the association between the breach and work outcomes (Bal and Dóci, 2018; Sirola and Pitesa, 2018) but a systematic assessment has not yet been conducted. Little is currently known about how the national economic context influences individual-level work outcomes following a breach. This study attempts to bridge this gap.

The last meta-analyses of the relationships between PCB and work outcomes (such as job performance and turnover) were conducted more than 10 years ago and these revealed that the effects of PCB on job performance and turnover can indeed be moderated (Bal *et al.*, 2008; Zhao *et al.*, 2007). Yet, perhaps

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not surprisingly, prior meta-analyses focused on individual-level variables that moderate the breach outcome relationships (Bal *et al.*, 2008; Zhao *et al.*, 2007). In this study, we argue that it is important to understand the multilevel embeddedness of PCB experiences and examine how the national economy (at the society level) impact individual employees in their work outcomes after experiencing a breach.

Previous scholars have suggested that the economy at the macro-level influences the work outcomes of individuals through a top-down process (Roth and Wohlfart, 2019). One of the challenges is the lack of enough PCB studies that have directly measured economic indicators to assess how individual perceptions about the macroeconomic context affect their responses to PCB. Yet, there is some evidence that suggests that, despite individual economic circumstances or their perceptions, the national economy can still impact individual work outcomes (Czaika, 2015; Roth and Wohlfart, 2019). We develop a multilevel framework to understand the impact of the national economy on the associations between breach and job performance and turnover. A multilevel approach is important for understanding breach-related responses that emerged due to national economic conditions. We will, therefore, engage in a two-step procedure by first conducting a meta-analysis at the study level (*i.e.*, individual-level) as is commonly done and then adding new macro-economic indicators at the country level

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to assess possible moderating effects. We investigate the moderating effects of the macroeconomic context at the country level on the relationships between PCB and job performance and turnover at the individual level.

We use prospect theory (Kahneman and Tversky, 1979; Tversky and Kahneman, 1992) to theorize why the inflation rate and unemployment could moderate the associations between PCB and job performance and turnover (see Figure 1). We deem prospect theory useful for this, as scholars have used it previously to understand the impact of social context (at the macro-level) on various outcomes at an individual level (William, 2004; Czaika, 2015). By using prospect theory as a lens, we link national economic determinants at the macro-level to understand individual work outcomes related to a breach. This is because prospect theory starts with individual decision making but explores contextual determinants of risk in depth (William, 2004).

**Literature review and hypothesis**

Psychological contracts and job outcomes

To understand how economic factors may moderate breach-related outcomes, we need to first build evidence requiring an understanding of breach-related outcomes at the individual level. Findings of previous meta-analyses have revealed that there is a negative relationship between PCB and job performance

and a positive relationship between PCB and turnover (Zhao *et al.*, 2007). However, they only found a significant relationship with turnover intentions, but not with actual turnover. Besides, this meta-analysis has been conducted more than 10 years ago and therefore does not capture the current accumulative knowledge regarding the breach and performance and breach and turnover relationships.

In the PC literature, relationships between PCB and work outcomes have traditionally been explained based on Social Exchange Theory (SET; Blau, 1964). SET suggests that people engage in exchange relationships to receive inducements for what they provide to another party (Blau, 1964; Gouldner, 1960). Each party expects that the other party will reciprocate such actions, and this process leads to mutual obligations over time (Cropanzano *et al.*, 2017). In case an employee experiences that the employer does not fulfill its obligations (*i.e.*, PCB), he/she is likely to consequently change their job behavior to restore a balance in their relationship with their employer. However, to determine this balance, we will argue below that employees might consider the economic context. For now, we want to highlight that economic conditions are most likely to influence an employee's job behavior, including job performance and turnover (Park and Shaw, 2013). This is because job performance and turnover are key outcomes that have direct organizational consequences (Park and Shaw, 2013). To understand

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2  
3 job performance, previous researchers have commonly adapted a  
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5 two-dimensional approach to job performance by examining in-  
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7 role performance and contextual performance (Zhao *et al.*, 2007).  
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9 Given that job performance is inherently multi-dimensional  
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11 (Johnson and Meade, 2010), we follow the commonly used two-  
12  
13 dimensional approach to understanding job performance (Bal *et*  
14  
15 *al.*, 2008; Zhao *et al.*, 2007). We focus on the effectiveness of  
16  
17 an individual employee to perform formal job tasks (in-role  
18  
19 performance) and the ability of an individual to perform tasks  
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21 beyond the formal requirements (organizational citizenship  
22  
23 behaviors, or OCB) (see Borman and Motowidlo, 1993). To  
24  
25 understand turnover, we focus on turnover intention (refers to  
26  
27 as an individual's intention to leave the job) and actual  
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29 turnover.  
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35 Our first goal is to test the associations between PCB and  
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37 job performance and turnover by accumulating the contemporary  
38  
39 research findings to extend the previous meta-analysis (Zhao *et*  
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41 *al.*, 2007). Drawing on SET, we expect psychological contract  
42  
43 breach to be negatively related to in-role performance and  
44  
45 organizational citizenship behavior (OCB), while being  
46  
47 positively related to turnover intention and actual turnover  
48  
49 (Bal *et al.*, 2008; Clinton and Guest, 2013; Conway and Briner,  
50  
51 2005), therefore we expect:  
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53

54  
55 *Hypothesis 1:* Psychological contract breach is negatively  
56  
57 related to in-role performance (H1a) and organizational  
58  
59 citizenship behavior (H1b).  
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*Hypothesis 2:* Psychological contract breach is positively related to turnover intention (H2a) and actual turnover (H2b).

The role of economic factors in psychological contract breach Research has shown that macroeconomic factors can have a direct impact on employee behaviors (Fenwick and Tausig, 1994; Sarnecki, 2015). We theorize that they could have similar effects on PCB and its relationships with work outcomes. To understand the impact of the macro-economy on employee PCB related responses, we apply prospect theory (Kahneman and Tversky, 1979; Tversky and Kahneman, 1992), which suggests that people put more effort into preventing the loss of a position than in achieving a potential gain based on contextual factors (Kahneman, 2011). In line with prospect theory, scholars have suggested that employee wage expectations are shaped by aggregated unemployment and inflation (Angrave et al., 2017; Holden, 2005). Employee wage expectations remain low when there is a high level of aggregated unemployment and inflation (Angrave et al., 2017). When employee wage expectations are low, they are more likely to accept and be tolerant of poor working conditions (Dick and Floyd, 2001). This can be explained from a loss aversion and value function perspectives. For example, employees are more likely to dislike losing their job during times of higher inflation and higher unemployment in the economy as they find it increasingly difficult to manage their lives with wages (Dick and Floyd, 2001). This view is also supported

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by empirical evidence that suggests that employees value their jobs and wages during uncertain economic times reflected by higher unemployment (Hoskins, 2017) and inflation (Faccini and Melosi, 2019).

Moreover, to assesses the status quo and possible gains/losses, individuals tend to use a reference frame - which is a psychological point that can be altered due to various situational factors (Stokvik et al., 2016; Kahneman and Tversky, 1979). We argue that how people come to understand what they gain and lose can be shaped by the national economic context (Czaika, 2015) as this might alter the perceived status quo and/or the value function of people. Besides, the macro-economy limits the actual resources of an individual and therefore has not only a direct impact on an individual's assessment of the status quo (Levy, 1992) and possible future gains and losses but actual gains and losses (Carr and Chung, 2014; Calvo et al., 2015). For example, studies have shown that inflation rates impact an individual's ability to purchase goods (Roth and Wohlfart, 2019) and quality of life regardless of personal income, status, or skill levels (Yam, 2016). Similarly, aggregated unemployment shapes individual behaviors regardless of a person's labor force status or income (Henry, 2008) because the national unemployment impacts an individual's ability to find employment regardless of the person's circumstances such as age (Acemoglu, 2001). High unemployment rates encourage people to underestimate self-worth in the job market (Worach-

1  
2  
3 Kardas and Kostrzewski, 2013) and even when they are employed,  
4  
5 they might still feel that their well-being in the future is at  
6  
7 a risk (Di Tella *et al.*, 2003). Often, anticipatory purchasing  
8  
9 ability and anticipatory job loss are interrelated to actual  
10  
11 inflation rates and unemployment rates of a country (Roth and  
12  
13 Wohlfart, 2019).

14  
15  
16 Inflation is understood as the increase in the price level  
17  
18 and the decline in the value of money (Kuchler and Zafar, 2019).  
19  
20 Inflation is a key economic indicator and understanding how  
21  
22 inflation impacts behavior is important (Gandelman and  
23  
24 Hernández-Murillo, 2009) because it is a major part of people's  
25  
26 thinking (Kuchler and Zafar, 2019). Besides, many households are  
27  
28 concerned about the expenses that incur to buy the goods and  
29  
30 services that are important to maintaining an appropriate living  
31  
32 standard (Armantier *et al.*, 2015). Previous studies have shown  
33  
34 that inflation of the economy is linked to lower employee job  
35  
36 performance and turnover at the individual level (Gentry *et al.*,  
37  
38 2007).

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40  
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43  
44 Unemployment rates are important because unemployment  
45  
46 rates have been found to be a unique determinant of an  
47  
48 individual's work-life perceptions (Kassenboehmer and  
49  
50 Haisken-DeNew, 2009). Much of unemployment at the national level  
51  
52 implies the risk of losing employment at a personal level  
53  
54 (Stavrova *et al.*, 2011). For instance, national-level  
55  
56 unemployment provokes concerns about finding a new job and  
57  
58 alternative source of income (Sun *et al.*, 2007), subsequently  
59  
60

strengthening the link between the desire to retain existing jobs by performing better or not quitting (Carr and Chung, 2014). National economic unemployment has been found to have an impact on employee job performance (Iverson and Deery, 2000; Sun *et al.*, 2007; Nyberg, 2010) and turnover (Carsten and Spector, 1987; Gentry *et al.*, 2007).

Based on prospect theory, we reason that the perceived potential losses of reacting to PCB will be higher under adverse economic conditions. For example, potential losses are accentuated under conditions of high inflation and high unemployment, as people will be concerned with the decreasing value of their salaries (i.e., high inflation), and the increasing difficulties of obtaining a new job (i.e., due to high unemployment). Contemporary knowledge in the PCB field is that in the event of a breach, the employee tends to underperform or quit their jobs (Zhao *et al.*, 2007). However, we argue that this becomes much less so when there is a bad economic context in a country as indicated by high inflation or high unemployment. Under such adverse economic conditions, decisions to underperform and quit their jobs will have more risk and this will change people's value function by increasing the risk of potential losses. Moreover, this increased risk might even change their perception of the status quo as uncertainty regarding inflation and unemployment imposes a liability on the people to appreciate their existing jobs (Jacobs *et al.*, 2014) and makes them more devoted to their jobs

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(Augner, 2015). Therefore, based on prospect theory, we expect that when faced with high unemployment and high inflation, relationships of PCB with job behaviors will be attenuated.

Therefore, we expect:

*Hypothesis 3:* The inflation rate moderates the relationship between psychological contract breach and in-role performance (H3a), organizational citizenship behavior (H3b), turnover intention (H3c), and actual turnover (H3d). Relationships will be weaker under conditions of high inflation.

*Hypothesis 4:* The unemployment rate moderates the relationship between psychological contract breach and in-role performance (H4a), organizational citizenship behavior (H4b), turnover intention (H4c) and actual turnover (H4d). Relationships will be weaker under conditions of high unemployment.

**Method****Search strategy and coding procedure**

We adopted meta-analysis to examine the conceptual model and used several complementary steps to collect relevant studies. At the first stage, we searched for published studies. We searched through key databases, namely Psycinfo, EBSCO, ABI-INFORM, and Google Scholar. Moreover, we searched through the reference lists of previous meta-analyses (Bal *et al.*, 2008; Zhao *et al.*, 2007; Vantilborgh *et al.*, 2015). We also manually searched through the reference lists of published articles on PCB.

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As a final check, we also looked for unpublished papers. In doing so, we contacted the members of both the OB division and HRM division of the Academy of Management requesting unpublished studies. Besides, we contacted the authors who have published the abstract papers at the Academy of Management and the Society of Industrial and Organizational Psychology meetings requesting for unpublished papers. We contacted psychological contract scholars and requested their published or unpublished works and/or leads to other studies. We also searched for Ph.D. theses available at various library catalogues.

We set up an inclusion criterion to select studies (Jiang *et al.*, 2012). The selected studies must have met various inclusion criteria. The first inclusion criterion was that a study must focus on psychological contract breach or fulfillment and published during the period from 1990 to 2018. Going through the databases and hand-searched journals and studies, we identified 2,897 studies. Second, only those studies which are empirical were included. This initial search resulted in 2,436 studies. Third, only those following quantitative methods were selected, resulting in 2,088 studies. Fourth, only those studies that investigated PCB or fulfillment were included (i.e., excluding studies on for instance PC content, state, or type). This resulted in 1,791 studies. Fifth, we removed duplicate studies, and studies that measured psychological contract violation (Morrison and

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2  
3 Robinson, 1997), in doing so, we retained 838 articles. Sixth,  
4  
5 only studies measuring the relations between PCB and PC  
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7 fulfillment and the relevant work outcomes (in-role  
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9 performance, OCB, turnover intention, and turnover) were  
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11 included, excluding a further 633 studies on relationships  
12  
13 with job attitudes and other outcomes. Seventh, only the  
14  
15 studies reporting in English, French, or Dutch languages were  
16  
17 included, and this resulted in 172 studies. Eighth, only  
18  
19 employee perspectives of PCB and fulfillment were included.  
20  
21 This resulted in a set of 160 published articles reporting the  
22  
23 relationship between PCB and fulfillment and the relevant  
24  
25 outcomes. Finally, only the studies reporting the statistical  
26  
27 information needed to calculate the correlations among the  
28  
29 selected variables of this study were included. This resulted  
30  
31 in a final database of 90 articles, which contained 95  
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33 independent samples. These 90 articles come from published  
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35 sources and despite our very best attempts, we could not  
36  
37 retain unpublished studies because the unpublished studies  
38  
39 that we found failed to meet one of the eight inclusion  
40  
41 criteria. For instance, some studies did not report the  
42  
43 statistics that we required, or some failed to examine the  
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45 selected variables and so on. Appendix A shows the full list  
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47 of papers included in the meta-analysis.  
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55 We designed a coding protocol to record information about  
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57 the study (author, publication date, the actual date of  
58  
59 publication), sample (sample size, sample type, industry,  
60

country, demographic characteristics), measurement (mean, standard deviation, reliability), and effect size (correlation) following previous research. Because many studies used the term breach, fulfilment and violation interchangeably, we relied on measurements used by the original authors to identify psychological contract breach to guide our coding. We calculated the composite correlations and reliabilities according to the formulas provided by Hunter and Schmidt (2004) to approach the correlation between the breach and the selected work outcomes. When studies reported longitudinal correlations or when multi-dimensions or distinct dimensions of breach and fulfilment (e.g., transactional and relational dimensions) were reported (Lui and Ngo, 2004; Malhotra and Lumineau, 2011), we computed composite scores<sup>1</sup>. We calculated the composite correlations for longitudinal studies by taking the first and the distal points into account. This is appropriate because distant events happened more recently (Lassale *et al.*, 2019) and capturing the first and the distal events is more relevant to capturing trajectories (Lui and Ngo, 2004). we were able to compute a composite score because the formula was available and therefore, we did not compute an aggregate effect size<sup>2</sup>.

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<sup>1</sup> There were 15 longitudinal studies and 5 studies that reported different dimensions of a breach in our data base.

<sup>2</sup> We did not compute an aggregate effect size because it is recommended that an aggregate effect size should only be computed when it is not possible to perform a composite score (Geyskens *et al.*, 2006).



1  
2  
3 To calculate interrater reliability, the first and second  
4 author coded all of the 95 studies. They deliberated ambiguous  
5 items to confirm uniformity through the coding process. Once  
6 the coding was completed, the authors examined the coding for  
7 discrepancies or errors among the common coded studies.  
8 Thereafter, we calculated interrater reliability estimates.  
9  
10 Among the study inputs coded by the first two authors, a 99  
11 percent agreement on study characteristics and a 99 percent  
12 agreement on study numbers were met, leading to an overall  
13 agreement of 99 percent between both raters. We checked all  
14 recorded information three months later, and few discrepancies  
15 (less than 1%) were identified and solved through discussions  
16 (Geyskens *et al.*, 2006).  
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#### 35 Meta-analytic Procedure

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37 Data were first manually entered into an SPSS sheet to  
38 create familiarity with the detailed data. Then, data were  
39 transferred to an Excel spreadsheet provided by Wilson  
40 (Developed by Schwarzer, 1996) which can be found on his website)  
41 to calculate true-score correlations using the Hunter and  
42 Schmidt (2004) approach. The Hunter and Schmidt (2004) method  
43 progressively make corrections for individual study variances.  
44 We used the correlation statistics  $r$  due to its wide availability.  
45  
46 By using Mark's Xl version, we calculated meta-analytic results  
47 including the reliabilities, fail-safe  $n$ , and  $Q$  statistics. To  
48 analyze moderating effects, we used meta-regression using the  
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SPSS syntax based on Hunter and Schmidt (2004) method developed by Wilson (2010). These are SPSS syntax files for running meta-analysis procedures (Field and Gillett, 2010).

We used the correlation statistic  $r$  due to its wide availability. We made sample-weighted averages for each individual study. Then, we corrected random variation due to sample size. Thereafter, we corrected variances in independent and dependent variables for measurement error by multiplying an attenuation factor calculated from the construct reliabilities. Missing reliability data were imputed with average reliability (Lipsey and Wilson, 2001). Variances were corrected by subtracting artifact errors. We gained consistency by correcting for measurement and sampling errors. The corrected and combined results are more generalizable to the true population.

We examined all measurements of the variables to identify variables with the same or slightly different names as identical. Moreover, we used correlation as the effect size to avoid the problems of different scales (Campbell-Hunt, 2000). We first calculated reliability corrected sampling errors to correct for measurement and sampling error (Hunter and Schmidt, 2004). We used Cronbach's alpha or composite reliability to represent reliability (Lipsey and Wilson, 2001). Thereafter, we transformed the correlation which is originally reported into Fisher's  $z$  to adjust distribution skewness (Geyskens *et al.*, 2006; Kirca *et al.*, 2011). Following prior research (Campbell-

Hunt, 2000), we interpreted each sample as random and coming from different populations.

We used the random effect methods of Hunter and Schmidt (2004) because if the individual studies show a wide variation in the outcome estimates (heterogeneity) then a random-effects model is appropriate. We reported the sample-weighted mean uncorrected correlation ( $F$ ). We also report the 95% confidence intervals and credibility intervals. We calculated the  $Q$  statistics (Hunter and Schmidt, 2004) to detect the moderating effects (Hunter and Schmidt, 2004). We only confirmed the moderating effect when regression results proved significant. To examine potential publication bias, we computed the fail-safe  $N$  with the method suggested by Hunter and Schmidt (2004: 501). The findings show that the average of Fail-Safe  $N$  across studies<sup>3</sup> is high which suggests that publication bias is not a major concern for this study (see Table 1).

#### Measures

The main independent variable PCB was coded only when breach or fulfillment was measured. In line with the method suggested by Zhao et al. (2007), we reversed the signs of the correlations between fulfillment and job outcomes to indicate a

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<sup>3</sup> The high values of fail-safe  $N$  (see Table 1) have suggested that there are at least 54 studies are needed for in-role performance, OCB, and turnover intention, to obtain different results. For turnover, 2 studies are needed, which is due to the overall low number of studies conducted on the relationships between PCB and turnover ( $k = 6$ ). The findings for turnover should be taken more cautiously.

psychological contract breach<sup>4</sup>. When multiple dimensions of breach<sup>5</sup> or fulfillment were measured (e.g., transactional and relational PCB), then a composite score was calculated using formulas of Hunter and Schmidt (2004).

The in-role performance was coded for any performance outcome measure that reflected an assessment of an employee's performance in one's core task description. OCBs were coded as any extra-role performance that is not part of the core task description. The turnover intention was measured as the self-reported intention of employees to leave their organization, and actual turnover was assessed only if the study reported correlations between PCB and actual leave from the organization. Composite correlations were calculated if an outcome was measured via multi-dimensional scales (Hunter and Schmidt, 2004).

Inflation and unemployment rate were taken from Euromonitor (2018). To provide comparable statistics for each study, we inspected per study when the study's data were collected (for longitudinal studies we used the year of assessment of PCB), and we contacted authors when the year of data collection was not reported in the study. If authors were not available to provide the requested information, we used the mean time lag of 4 years

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<sup>4</sup>There has been some critique in recent decades (e.g., Lambert *et al.*, 2003) who have suggested breach and fulfilment form distinct continua. We ran a supplementary analysis using the studies in which we reverse-scored fulfillment to represent breach.

<sup>5</sup> We had 5 studies that measured PCB using dimensional measures.

(as estimated by the available information in our data) between data collection and publication of the paper in a journal. For each study, we then searched in Euromonitor for the macroeconomic factors of the specific country and the specific year in which the study's data were collected. We used the original figures related to the economic variables as they were presented without centering before running the analysis<sup>6</sup>.

#### Statistical Procedure

The hypotheses regarding the main effects of a breach on the job behaviors were tested with the formulas of Hunter and Schmidt (2004). To test the hypotheses concerning the macroeconomic factors, the correlations between the breach and the outcomes were regressed on the macroeconomic factors using a Weighted Least Squares estimation. Weighted Least Squares (WLS) estimation allows us to correct for differences between sample sizes, as well as unreliability in the variables measured (Hunter and Schmidt, 2004). The weights were set at  $(n_j - 3)$  to correct for sample size (Hunter and Schmidt, 2004). We applied the Fisher Z-transformation to all correlations, to investigate the moderating effect of the macroeconomic factors.

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<sup>6</sup> Centering predictor variables does not necessarily enhance statistical power, model fit, or reliability of product terms (Dalal and Zickar, 2012).

**Results**

First, we assessed the main effects of PCB on the outcomes. Table 1 shows the results of the main-effects meta-analysis<sup>7</sup> and reports the study's true-score correlations including comparisons to those reported in the Zhao *et al.* (2007) meta-analysis. As expected by H1a and H1b, PCB significantly and positively related to in-role performance (true score correlation  $\rho = -.22$ ) and citizenship behavior ( $\rho = -.24$ ). Additionally, in line with H2a and H2b, PCB related significantly and negatively to turnover intention ( $\rho = .34$ ) and actual turnover ( $\rho = .18$ ). As can be seen in Table 1, none of the 95% confidence intervals contained zero indicating that all of these correlations were significant. It is notable how the correlations between PCB and job performance and turnover intentions are quite similar to the Zhao *et al.* (2007) meta-analysis, while the correlations between PCB and OCB and actual turnover are considerably larger in the current meta-analysis. Lastly, while none of our confidence intervals

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<sup>7</sup>We also conducted a supplementary analysis to examine the main effects of PCF on work outcomes. We could only perform this analysis for turnover intentions because of the limited number of studies reporting transactional (n=2) and relational components (n=2) within our sample. The results of the transactional and relational constructs show transactional breach ( $r = .40$ ) has only a very slightly larger effect than relational breach ( $r = .38$ ). However, fail safe K is zero, suggesting that results must be interpreted with caution, please see Table 4, p.39.

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contained zero, actual turnover did contain zero in Zhao et al. (2007). In sum, H1a, H1b, H2a, and H2b are supported.

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Insert Table 1 about here  
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The homogeneity statistics in Table 1 (i.e.,  $Q$  and the 90% credibility intervals) show that the true score correlations between the breach and the outcomes contain sizeable variation which supports our idea that there might be moderating variables in these relationships (Hunter & Schmidt, 2004). More specifically, Hypotheses 3 and 4 stated that macroeconomic factors of a country moderate the relationships between PCB and job behaviors.

Table 2 shows the results for the macroeconomic factors. Inflation rate moderated the relationship between contract breach and in-role performance ( $\beta = .54, p < .001$ ). Since the correlation between the breach and in-role performance is negative (see Table 1), the positive beta indicates an attenuating effect; the negative correlation becomes smaller when there is a higher inflation rate. The explained variance ( $R^2$ ) was .29, indicating that 29% of the variance in the correlations between the breach and in-role performance can be attributed to the effects of economic inflation. H3a is therefore supported. Inflation did not moderate the relation between contract breach and citizenship behavior ( $\beta = .04, ns$ ), and H3b was thus not supported. Inflation rate did

1  
2  
3 moderate the relation between PCB and turnover intention ( $\beta =$   
4  
5  $-.32, p < .001$ ). Since the correlation between PCB and  
6  
7 turnover intention is positive (see Table 1), the negative  
8  
9 beta indicates that this positive correlation becomes smaller  
10  
11 when the inflation rate becomes higher, thereby supporting H3c  
12  
13 (i.e., an attenuating effect of inflation rate). Finally,  
14  
15 inflation rate moderated the relation between PCB and actual  
16  
17 turnover ( $\beta = .12, p < .001$ ). Since the correlation between  
18  
19 PCB and actual turnover is positive<sup>8</sup> (see Table 1), the  
20  
21 positive beta indicates that this positive correlation becomes  
22  
23 larger when the inflation rate becomes higher. This is in the  
24  
25 opposite direction as we expected in H3d and we will discuss  
26  
27 this in more detail in the discussion. In sum, the main  
28  
29 premise underlying hypothesis 3 was that the inflation rate  
30  
31 could moderate the relationships between PCB and job  
32  
33 behaviors, and our findings support that general idea, yet  
34  
35 interestingly our findings also revealed that this is for some  
36  
37 relationships more complex than we anticipated.  
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44 Table 2 also shows that unemployment rate moderated the  
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46 relationship between PCB and in-role performance ( $\beta = .48, p <$   
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48  $.001$ ). Since the correlation between PCB and in-role  
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50 performance is negative (see Table 1), the positive beta  
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52 indicates that this positive correlation becomes larger when  
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54 the unemployment rate becomes higher, supporting H4a. The  
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60 <sup>8</sup> Findings related to actual turnover must be treated with caution.



unemployment rate did not moderate the relation between PCB and citizenship behavior ( $\beta = -.18, ns$ ), and thus H4b was not supported. Unemployment rate did moderate the relation between PCB and turnover intention ( $\beta = .30, p < .001$ ). Since the correlation between breach and turnover intention is positive (see Table 1), the positive beta indicates that this positive correlation becomes larger when the unemployment rate becomes higher, which was opposite as expected by H4c. The unemployment rate did not moderate the relation between PCB and actual turnover ( $\beta = .74, ns$ ), thereby rejecting H4d. In sum, the general expectation of hypothesis 4 received support, yet - as was the case for our findings concerning hypothesis 3 - our findings also unearthed a more complex reality than we initially expected.

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Insert Table 2 about here  
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## **Discussion**

The findings of this meta-analysis show that psychological contract breach is strongly linked to work behaviors (i.e., in-role performance, OCBs, turnover intentions, and actual turnover). These results are in line with social exchange theory (SET; Blau, 1986) and the findings of previous studies (e.g., Vantilborgh *et al.*, 2015) and meta-analyses (Zhao *et al.*, 2007). For in-role performance and turnover intentions, there were some variations in the results of the current and

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3 Zhao *et al.*'s (2007) meta-analysis, and both their and our  
4 meta-analyses indicate that PCB is an important predictor of  
5 these work behaviors. However, what our study revealed  
6 differently was stronger relationships for OCB and actual  
7 turnover than Zhao *et al.*'s (2007) study (up from  $-.14$  to  $-.24$   
8 for OCB and  $.06$  to  $.18$  for actual turnover). Our explanations  
9 are twofold. On the one hand, it might be that since 2007,  
10 employees may have responded more strongly to PCBs in relation  
11 to OCBs and turnover, potentially as a result of changing  
12 economic circumstances, such as layoffs and austerity (Bohle  
13 *et al.*, 2017).

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28 The changing reality of workplaces was part of our focus  
29 by investigating how macroeconomic factors of a country can  
30 moderate the relation between PCB and work outcomes. Based on  
31 prospect theory (Kahneman and Tversky, 1979), we expected that  
32 job behavior following a breach is partly influenced by  
33 people's assessment of potential losses and gains, which are  
34 dependent upon the economic situation of a country (Mohnen and  
35 Pokorny, 2005). We expected people to be less affected by a  
36 breach when there are higher inflation and higher  
37 unemployment. Overall, our results support the notion that  
38 economic factors can shape the relationships between PCB and  
39 work behaviors and these findings will be put central in the  
40 rest of the discussion.

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60 PCB effect on work outcomes: macroeconomic moderators

Our meta-analysis showed that the inflation rate moderated the relation between contract breach and in-role performance and turnover intention in the expected direction. Hence, in a macroeconomic context of high inflation, people are less likely to decrease their performance or increase their turnover intention when they experience PCB. Inflation rate also moderated the relationship between contract breach and actual turnover, yet did so in the opposite direction (i.e., when there is higher inflation, the positive relationship between the breach and actual turnover becomes larger suggesting that the degree of actual turnover among people is higher when there is higher inflation). This unexpected effect of inflation can be due to various reasons. One explanation may be that under conditions of inflation, people do change jobs more frequently, to overcome the negative effects of the devaluation of their income, as changing jobs may be a relatively straightforward way to negotiate higher salaries to cope with the negative implications of inflation (Myant *et al.*, 2016). Inflation may thus play a complex role (Vogel *et al.*, 2009). On the one hand, inflation is an indicator of an economic downturn and may thus signal that people need to secure their income in order to prevent any further losses of their salaries (Lucy and Broughton, 2011) becoming worthless with rising prices due to inflation. This may lead them to perform well in their jobs even when their organization is not upholding their side of the deal (i.e., when PCB occurs).

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3 However, on the other hand, employees are also leaving such  
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5 'PC breaching' organizations, and search for a new employer,  
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7 to secure or increase their income and purchasing power.  
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10 The unemployment rate moderated the relation between  
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12 contract breach and in-role performance in the expected  
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14 direction, with higher unemployment predicting attenuated  
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16 responses to breaches. Yet, the unemployment rate moderated  
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18 the relation between contract breach turnover intention in the  
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20 opposite direction (i.e., when there is higher unemployment,  
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22 the positive relation between breach and turnover intention  
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24 becomes larger suggesting that the degree of turnover  
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26 intention among people is higher when there is higher  
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28 unemployment). This unexpected effect of unemployment can be  
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30 due to similar reasons as discussed above. In times of high  
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32 unemployment in a country, people may still retain their  
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34 performance at work (Calvo *et al.*, 2015) but at the same time,  
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36 they also start looking increasingly for other job  
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38 opportunities (Luechinger *et al.*, 2010). Hence, what might be  
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40 observed is a dual-process through which people, despite  
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42 having experienced breach, may continue to perform well in  
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44 one's job and therefore not risking losing one's job, and at  
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46 the same time, start looking more intensely for other jobs to  
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48 offset the risks and losses that co-align with experiencing  
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50 breaches. This is a new insight above the prior conclusions of  
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52 Zhao *et al.* (2007) that PCB normally elicits negative  
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54 responses.  
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Overall, our findings show that it is important to consider the macroeconomic environment in managing employee behavior and dealing with psychological contract breach as economic factors can moderate these relationships. PCB had a less negative effect on in-role performance in harsh economic times, yet our results showed that extra-role performance (i.e., OCB) was not moderated by the economic situation. This means that even in a difficult economy setting, employees still react negatively to PCB by reducing their OCB (cf. Zhao et al., 2007). For the long-term viability of organizations, OCB is crucial (Rousseau, 1989), and reducing PCB is thus still important in challenging economic settings. Our findings could also be interpreted that employees engaging in a form of impression management, as PCB still negatively relates to their OCB, but many effects less so employee in-role performance. Our findings that economic factors might increase turnover add to that by showing that even when it seems like employees are still performing after PCB, they are actually already thinking of a life beyond the "breaching" organization.

### **Theoretical implications**

This study has several theoretical implications. First, the psychological contract literature has thus far assumed that psychological contract evaluations are shaped by individuals through using cues from their immediate

environment (e.g., Morrison and Robinson, 1997). Our study is among the first in the PCB literature to show that macroeconomic content can influence people's behavior. While individuals may be unlikely to be aware of the *precise* unemployment figures in a particular period, these statistics serve as important proxies for how people assess the macroeconomic context (Dunlap *et al.*, 2010; Di Tella *et al.*, 2003; Sevak and Schmidt, 2011). Future research may shed more light upon the precise mediating mechanisms that explain how such proxies influence decision making processes following PCB.

Moreover, as we have shown, these cues are not merely uniform in how they signal to individuals when they have to cope with psychological contract breaches but may depend on both the type of economic indicator and the specific behavior in the workplace. In all, psychological contract theory would benefit from taking a wider perspective on the coping processes of people following a breach and incorporate their decision based on the wider economic environment. Prospect theory (Adriaenssen and Johannessen, 2016; Kahneman, 2011; Kahneman and Tversky, 1979) offers a useful theoretical angle to study not only how psychological contracts are processed emotionally, but also how the resulting behavior of employees is also influenced by assessments of risk, and therefore subject to wider contextual macroeconomic factors. In other words, while social exchange theory perspectives (Blau, 1964)

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3 predict that employees actively restore a balance when PCB  
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5 occurs, prospect theory would predict that this balance may be  
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7 absent when employees perceive the potential losses of  
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9 withholding their efforts to be too great. The notion of  
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11 structural imbalance between employee and organization has  
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13 been somewhat absent from the psychological contract  
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15 literature (Bal and Dóci, 2018), but prospect theory may  
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17 explain why individuals do not *always* reciprocate breach, and  
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19 will they might still (appear to be) performing well after  
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21 PCB.  
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26 Moreover, the study also has implications for the wider OB  
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28 and HRM literature. While in OB the focus has traditionally  
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30 been on individuals in the workplace, there is now increasing  
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32 evidence that individual decision making does not just occur  
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34 in isolation but is increasingly dependent on the context  
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36 (Blomme *et al.*, 2010; Johns, 2018). Beyond a rich tradition on  
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38 the impact of national culture on individual behavior and work  
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40 climates, it has been less well understood that economic  
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42 factors do have an impact on attitudes, behaviors, and  
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44 decision making (Gelade *et al.*, 2006). Our study contributes  
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46 to this by not only theoretically integrating the  
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48 psychological contract literature with prospect theory to  
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50 explain the impact of macroeconomic factors but also by  
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52 empirically testing our hypotheses using a large number of  
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54 studies that have been conducted across the world across the  
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56 last 25 years. In sum, we argue that research areas which  
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3 traditionally focus on the explanation of individual behavior  
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5 in the workplace should also take into account theoretically  
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7 and empirically the notion of the wider socio-economic,  
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9 political, and cultural context, which may profoundly  
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11 influence how people feel, behave and make decisions in the  
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13 workplace (Bal and Dóci, 2018).  
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### **Strengths, limitations, and suggestions for further research**

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21 The study also has some strengths and limitations. First,  
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23 although we were able to collect a large dataset, most studies  
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25 that we incorporated for this meta-analysis were cross-  
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27 sectional. Therefore, it is not possible to draw causal  
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29 conclusions on the impact of the relationships under study.  
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31 Moreover, the current study has a clear focus by zooming-in on  
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33 psychological contract breach relationships with work  
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35 outcomes. However, even though it has been argued that breach-  
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37 outcome relationships are mediated by the violation (Zhao et  
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39 al., 2007), we were unable to test this given the low number  
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41 of studies present in our dataset that investigated such  
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43 mediated relationships. If the number of studies is too small  
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45 it might be better not to summarize them statistically and  
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47 inappropriate to perform a meta-regression (Borenstein et al.,  
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49 2009). Given the limited number of studies, we did not perform  
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51 a new analysis using a mediator into account when testing the  
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53 influence of economic factors on the relationships between PCB  
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55 and work outcomes. However, this is an interesting avenue for  
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3 further research, and we recommend that future studies could  
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5 look into this area. Moreover, there has been some critique in  
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7 recent decades (e.g., Lambert et al., 2003) suggesting that  
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9 breach and fulfilment form distinct continua/ Although we  
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11 performed a new analysis to see whether studies measuring PC  
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13 fulfilment alone would produce different, our findings show  
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15 that there were not many changes between coding it one way or  
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17 the other. Therefore, we encourage future research to keep  
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19 reverse coding fulfilment to treat as breach. However, we  
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21 suggest that future research still explore whether the breach  
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23 and fulfilment represent a single underlying continuum for  
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25 various other work outcomes and how effects of breach might  
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27 differ from fulfilment in relation to macroeconomic factors  
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29 for various other work outcomes. Besides, at present, little  
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31 do we know how economic factors might impact on the effects of  
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33 distinct dimensions of breach and fulfilment (e.g.,  
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35 transactional and relational PCB) related to work outcomes  
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37 beyond job performance and turnover such as job satisfaction,  
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39 commitment or even misbehaviours. This may be an interesting  
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41 avenue for future research. Moreover, we have explored two  
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43 economic factors in our study, namely, inflation and  
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45 unemployment. However, there may be other economic factors  
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47 such as the Gini index or GDP growth rate can be used in  
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49 future research. Furthermore, other aspects of the  
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51 psychological contract may also be influenced by economic  
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53 factors, such as the content of the contract itself  
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(Vantilborgh *et al.*, 2014; Vogel *et al.*, 2009), and thus their perceptions of possible gains and losses in the context of contract evaluations.

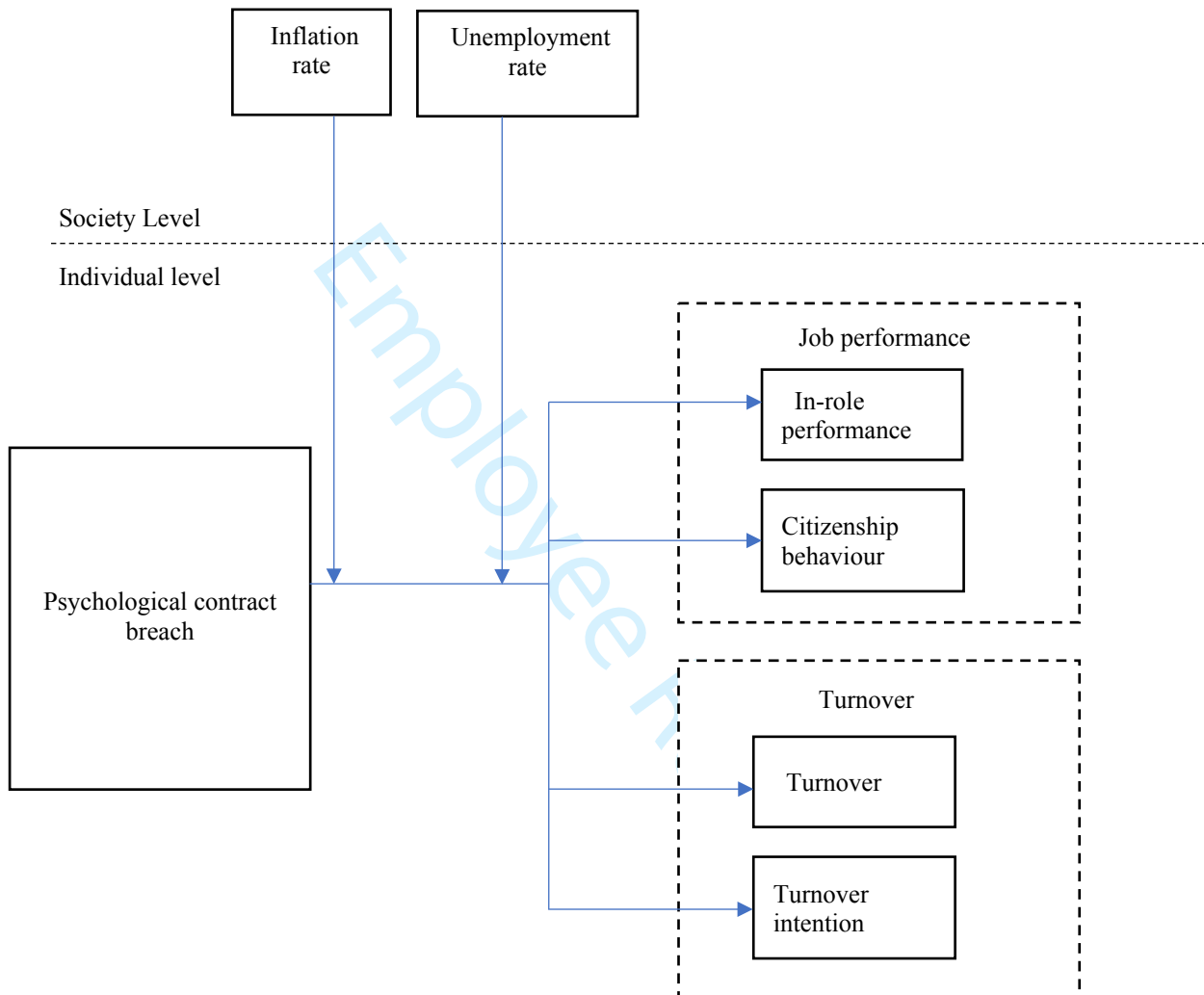
Finally, we had a limited number of studies reporting turnover (and reliability) in original studies. Besides, publication bias was a concern. Thus, findings related to turnover must be treated with caution. Moreover, one of our six turnover studies include a sample of air force employees (Clinton and Guest, 2013) - it may not necessarily be appropriate to consider this sample as representative of a national population and therefore, we encourage future researchers to more in-depth investigate the national economic context as a moderator influencing the breach and actual turnover relationship. There are also other factors that could be relevant, such as inequality, ideology, institutions, and culture, which may similarly - or differentially - impact psychological contract processes (Thomas *et al.*, 2010; Vantilborgh *et al.*, 2014).

### **Practical implications and conclusions**

The findings of our meta-analysis show that macroeconomic factors can alter the ways in which employees respond to psychological contract breaches. Our study supports the notion that psychological contract breaches are generally negatively related to performance-related outcomes, and positively

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3 related to turnover (intentions), yet our study also  
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5 demonstrates that these general relationships are contingent  
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7 upon the state of the economic environment. Therefore,  
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9 organizations and managers should be aware that while  
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11 employees may reduce their in-role performance less after a  
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13 PCB in adverse economic circumstances, their intentions to  
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15 leave the organizations might be increased at the same time,  
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17 and the negative effect of PCB on extra-role performance  
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19 (i.e., OCB) is not reduced. Thus, taking all of our findings  
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21 together, reducing PCB is crucial also in economic dire times,  
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23 because although employees will react with higher in-role  
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25 performance to enhance their employability by performing well,  
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27 they will also deal with the PCB by reducing their extra  
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29 effort for the company and looking for other jobs at the same  
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31 time. In conclusion, both scholars and practitioners will thus  
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33 gain from a deeper understanding of how macroeconomic factors  
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35 affect employee reactions to PCB. While some effects are  
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37 attenuated under conditions of losses due to an economic  
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39 downturn (i.e., high inflation and unemployment), other  
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41 effects might be enhanced (i.e., PCB's relationship with  
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43 turnover).  
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*Economic Factors and Psychological Contract Breach***Figure 1: Theoretical model**

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Table 1

Meta-analysis results of the main effects of psychological contract breach on job behaviors

Outcomes	Study	<i>k</i>	<i>N</i>	<i>r</i>	$\rho$	SD $\rho$	95% Confidence Interval		90% Credibility Interval		<i>Q</i>	Fail safe <i>K</i>
							Lower	Upper	Lower	Upper		
In-role performance	Current study	34	8287	-.21	-.22	.12	-.26	-.17	-.42	-.01	138	54
	(Zhao et al., 2007)	16	3504	-.20	-.24	.09	-.29	-.18	-.37	-.11	32	56
OCB	Current Study	33	20268	-.22	-.24	.06	-.24	-.21	-.39	-.06	211	54
	(Zhao et al., 2007)	21	12662	-.11	-.14	.09	-.18	-.10	-.28	-.02	69	51
Turnover intentions	Current Study	61	20753	.32	.34	.18	.29	.39	.02	.70	947	79
	(Zhao et al., 2007)	22	6268	.34	.42	.15	.36	.49	.19	.65	109	80
Actual turnover	Current Study	6	6869	.13	.18	.04	.07	.12	.03	.16	13	2
	(Zhao et al., 2007)	5	730	.05	.06	.18	-.12	.23	-.21	.32	20	3

*k* = number of studies; *N* = number of observations; *r* = mean uncorrected correlation;  $\rho$  = true score correlation; SD of  $\rho$  =

standard deviation of true score correlation; *Q* = Cochran's homogeneity test statistic; Fail safe *k* = Number of studies required to

refuse the significance of the correlation.

Table 2

Meta-analytic results of the moderating roles of economic factors in the relationships between contract breach and work outcomes

<b>Economic factor</b>	<b>Outcomes</b>	<b>k</b>	<b>N</b>	<b>Beta</b>	<b>S.E.</b>	<b>t</b>	<b>p-value</b>	<b>R<sup>2</sup></b>
	In-role performance	34	8632	.54	.03	3.61	.00	.29
Inflation Rate	OCB	33	20268	.04	.01	.20	n.s.	.00
	Turnover intentions	61	20753	-.32	.01	2.57	.01	.10
	Actual turnover	6	6879	.12	.01	2.66	.00	.01
Unemployment Rate	In-role performance	34	8632	.48	.01	-7.50	.00	.23
	OCB	33	20268	-.18	.00	-1.08	n.s.	.03
	Turnover intentions	61	20753	.30	.01	2.48	.01	.09
	Actual turnover	6	6879	.04	.00	-1.48	n.s.	.55

*k* = number of studies; *N* = number of observations; *Beta* = interaction coefficient; *S.E.* = standard error of *Beta*; *t* = *t*-test of *Beta*; *p*-value = significance of *t*-test; *R*<sup>2</sup> = explained variance.



Table 3

Meta-analytic results of the moderating roles of economic factors in the relationships between contract breach (reverse coded from fulfilment- by the authors) and work outcomes

<b>Economic factor</b>	<b>Outcomes</b>	<b>k</b>	<b>N</b>	<b>Beta</b>	<b>S.E.</b>	<b>t</b>	<b>p-value</b>	<b>R<sup>2</sup></b>
Inflation Rate	In-role performance	6	600	.08	.02	3.13	.01	.42
	OCB	5	6514	.01	.00	1.70	n.s.	.49
	Turnover intentions	11	3002	-.78	.01	3.76	.00	.61
Unemployment Rate	In-role performance	6	600	.82	.01	-2.99	.03	.58
	OCB	5	6514	-.01	.02	0.64	n.s.	.12
	Turnover intentions	11	3002	.67	.04	2.74	.02	.45

k = number of studies; N = number of observations; Beta = interaction coefficient; S.E. = standard error of Beta; t = t-test of Beta; p-value = significance of t-test; R<sup>2</sup> = explained variance.

Table 4<sup>9</sup>

Meta-analytic results of the transactional and relational contract breach and work outcomes

Outcomes	Study	<i>k</i>	<i>N</i>	<i>r</i>	$\rho$	SD $\rho$	95% Confidence Interval		90% Credibility Interval		Q	Fail safe K
							Lower	Upper	Lower	Upper		
Turnover intentions	Transactional	2	408	.40	.39	.13	.31	.42	.24	.55	10	0
	Relational	2	408	.38	.37	.12	.30	.48	.25	.54	10	0

*k* = number of studies; *N* = number of observations; *r* = mean uncorrected correlation;  $\rho$  = true score correlation; SD of  $\rho$  =

standard deviation of true score correlation; *Q* = Cochran's homogeneity test statistic; Fail safe *k* = Number of studies required to refute the significance of the correlation

<sup>9</sup> Fail safe K remains 0 suggesting that results must be interpreted with caution. In other words, if the effect is consistent across studies, we would report that the effect is robust. By contrast, if the effect varies substantially from study to study, we would want to consider the impact of the dispersion.

*Economic Factors and Psychological Contract Breach*

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Employee Relations

**Appendix A: Overview of Studies included in the Meta-Analysis**

Authors	Sample Size	Reliability Breach	In-role performance	Citizenship behavior	Turnover intention	Actual turnover	Unemployment rate**	Inflation rate**
1. Akhtar et al. (2016)	398	.85			.20 (.93)		8.6	7.2
2. Arain et al. (2012)	250	.74			.26		5.2	20.3
3. Aykan (2014)	166	.92			.28 (.86)		11.1	7.5
4. Bal et al. (2010)	266	.89	-.19 (.86)	-.20 (.90)			5.8	3.8
5. Bal et al. (2013) *	240	.87	.17 (.84)				5.0	1.1
6. Bal et al. (2010)	176	.82	-.25	-.16			4.2	1.6
7. Bohle et al. (2017)	615	.86	-.12 (.86)	-.17 (.77)			7.1	3.0
8. Bunderson (2001) *	283	.89			.34	.18	5.4	2.9
9. Büyükyılmaz & Cakmak (2013)	570	.94			.63 (.95)		13.0	6.3
10. Carbery et al. (2003)	280	.94			.32 (.85)		4.2	4.9
11. Cassar et al. (2016)	420	.80			.48 (.88)		8.0	2.8
12. Cavanaugh & Noe (1999)	136				.25		5.7	2.8
13. Cesario et al. (2014)	100				.39 (.80)		12	1.4
14. Chambel & Alcover (2011)	363			-.07 (.90)			8.8	2.6
15. Chen & Wu (2017)	226	.82			.75 (.89)		4.0	1.2
16. Cheung et al. (2016)	182	0.95	-.38 (.94)	-.48 (.94)			3.3	4.1
17. Clinton & Guest (2014)	6001					.09	7.90	3.3
18. Cohen & Diamant (2017)			-.17 (.74)	-.17 (.74)			5.9	0.5

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3	19. Costa & Neves (2017)	220	.86	-.04	-.13		14.1	-0.3
4				(.91	(.85			
5				)	)			
6	20. Coyle-Shapiro & Kessler	6953	.87		-.17		8.3	2.5
7	(2000)				(.63			
8					)			
9	21. Coyle-Shapiro & Kessler	5709	.81		-.26		6.20	1.3
10	(2003)				(.74			
11					)			
12	22. De Cuyper & De Witte	544	.80	-.24			7.5	3.3
13	(2006)			(.74				
14				)				
15	23. De Jong et al. (2009)	313	.93			.35	5.7	1.3
16						(.78		
17						)		
18	24. De Jong et al. (2009)	523	.96			-.14	5.7	1.2
19						(.79		
20						)		
21	25. De Jong (2009)	779				.01	5.7	1.2
22						(.79		
23						)		
24	26. Dulac et al. (2008) *	152	.95			.57	8.4	2.1
25						(.96		
26						)		
27	27. Freese et al (1999) *	119	.91			.31	7.2	1.9
28						(.88		
29						)		
30	28. Freese & Schalk (2008)	480	.92			.33	5.7	1.3
31								
32	29. Gardner et al. (2015) *	462	.82	-.02		.07	2.8	3.2
33				(.87		(.79		
34				)		)		
35	30. Granrose & Baccili (2006)	145				.04	5.8	1.6
36						(.88		
37						)		
38	31. Gregory et al. (2007)	343	.70			.38	6.8	2.2
39	(2007)					(.72		
40						)		
41	32. Griep et al. (2016) *	247				-.16	7.1	3.5
42								
43	33. Guchait et al. (2015)	289	.90			.38	6.4	9.3
44						(.82		
45						)		
46	34. Guerrero & Herrbach (2005)	217				.30	8.7	1.6
47								
48	35. Hartmann & Rutherford	308	.94	-.12		.55	8.1	2.1
49	(2015)			(.92		(.69		
50				)		)		
51	36. Henderson et al. (2008)	278	.80	-.17	-.16		5.5	2.7
52				(.89				
53				)				
54	37. Huiskamp & Schalk (2002)	1331	.83			.33	3.6	2.2
55						(.86		
56						)		
57	39. Johnson & O'Leary-Kelly	103	.94	-.33	-.07		4.7	3.2
58	(2013)			(.95				
59				)				
60	40. Kraak et al. (2017)	1066	.95			.39	5.0	1.3

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						(.95)		
						)		
41.	Lapalme et al. (2011)	186	.95	-.14			6.0	2.1
				(.91				
				)				
42.	Lapointe et al. (2013)	224	.95			.22	8.4	0.3
						(.90		
						)		
43.	Larwood et al. (1998)	257	.75			.44	6.2	2.8
						(.85		
						)		
44.	Lee et al. (2014)	141	.86	-.20	-.12		9.6	1.6
				(.76	(.72			
				)	)			
45.	Lee et al. (2011)	136				.24		
46.	Lemire & Rouillard (2005)	132				.44	7.2	1.9
						(.82		
						)		
47.	Lester et al. (2001)	268	.90	-.03	-.02	.14	5.0	2.3
48.	Lester et al. (2002)	134	.90	-.35			4.6	1.6
				(.93				
				)				
49.	Li et al. (2016)	272	.82	-.12			3.3	1.4
				(.44				
				)				
50.	Lo & Aryee (2003)	152		-.31	-.31	.48	6.30	-4.0
				(.78	(.78			
				)	)			
51.	Millard & Brewerton (1999)	117				.63	8.7	2.7
52.	Orvis et al. (2008) *	106		-.15		.19	5.6	2.7
53.	Paille & Dufour (2013)	414	.91			.10	8.3	0.3
						(.86		
						)		
54.	Piccoli et al. (2017)	570	.85			-.25	10.6	3.0
						(.72		
						)		
55.	Quratulain et al. (2018)	247	.71			.22	7.7	9.7
						(.78		
						)		
56.	Raja et al. (2004)	197	.79			.48	7.3	2.9
						(.83		
						)		
57.	Restubog et al. (2007)	162	.87	-.20	-.49		7.9	5.5
				(.89	(.80			
				)	)			
58.	Restubog et al. (2007)	189	.82	-.47	-.59		6.9	2.3
				(.89	(.72			
				)	)			
59.	Restubog et al. (2006)	167	.87	-.47	-.39		7.1	2.7
				(.77	(.78			
				)	)			
60.	Restubog et al. (2010)	250	.72	-.31	-.31		7.9	5.5
				(.87	(.72			
				)	)			
61.	Restubog et al. (2010)	158	.88	-.60	-.24		7.9	5.5
				(.95	(.84			
				)	)			

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3	62. Restubog (2008) *	240	.78		-.22			7.2 4.8
4					(.81			
5					)			
6	53. Restubog et al. (2008) *	137	.80		-.13			7.2 4.8
7					(.83			
8					)			
9	64. Rigotti (2009)	592				.28		10.3 1.7
10						(.79		
11						)		
12	65. Robinson (1996) *	125			-.25	.38	.20	7.5 3.0
13					(.67	(.86		
14					)	)		
15	66. Robinson & Morrison (2000) *	147	.92		-.18			7.5 4.8
16					(.95			
17					)			
18	67. Robinson & Rousseau (1994) *	128	.78			.42	.32	6.9 4.8
19								
20	68. Rodwell, J. & Ellershaw (2016)	459	.89			.51		5.1 3.3
21								
22								
23	69. Rosen et al. (2009)	319			-.29			5.2 3.4
24					(.75			
25					)			
26	70. Salin & Notelaers (2017)	1148	.90			.52		8.2 1.5
27						(.89		
28						)		
29	71. Schalk et al. (1995)	338	.72			.39		7.3 3.1
30						(.87		
31						)		
32	72. Shahnawaz, & Goswami (2011)	100	.80			-.08		9.2 12.1
33						(.87		
34						)		
35	73. Shahnawaz, & Goswami (2011)	100	.80			.17		9.2 12.1
36						(.87		
37						)		
38	74. Shih et al. (2012)	204	.94		-.19	-.19		5.2 3.5
39					(.90	(.90		
40					)	)		
41	75. Si et al. (2008)	524				.32		1.9 3.8
42						(.84		
43						)		
44	76. Steve & Cheng (2007)	135	.88			.42		5.0 -0.3
45						(.82		
46						)		
47	77. Stoner et al. (2011) *	126	.95			.41		5.9 -0.3
48						(.92		
49						)		
50	78. Stoner et al. (2010)	126				.46		4.6 3.8
51						(.92		
52						)		
53	79. Sturges et al. (2005)	151	.91		-.38		.04	5.2 1.2
54								
55	80. Suazo (2009)	196	.89		-.13			5.1 3.4
56						.35		
57						(.87		
58						)		
59	81. Suazo et al. (2005)	234	.88		-.18	-.28		4.7 2.8
60					(.87	(.93		
					)	)		
						)		
	82. Sutton & Griffin (2004) *	235				-.32		8.4 0.2

						(.90)		
						)		
83.	Takase et al. (2016)	766	.91			.54	4.4	2.8
						(.93)		
						)		
84.	Tekleab et al. (2013)	106		-.07		-.15	9.3	-0.3
				(.88)		(.97)		
				)		)		
85.	Tekleab and Taylor (2003)	298	.81	-.14	-.16	.23	4.2	2.2
				(.81)	(.85)	(.85)		
				)	)	)		
86.	Tekleab et al. (2005)	191	.83			.14	-0.02	4.7
						(.85)		2.8
						)		
87.	Turnley et al. (2003)	134	.85	-.38	-.41		4.0	3.4
				(.93)	(.85)			
				)	)			
88.	Turnley & Feldman (1999)	781				.38	5.4	2.9
						(.92)		
						)		
89.	Turnley & Feldman (2000)	804	.83	-.46	-.46	.48	5.5	2.9
				(.81)	(.81)	(.93)		
				)	)	)		
90.	Uen et al. (2009)	127	.80	-.24	-.21		4.1	2.3
				(.83)	(.83)			
				)	)			
91.	Van den Heuvel et al. (2017)	669				.38	7.2	2.5
						(.81)		
						)		
92.	Van der Vaart et al. (2015)	246				.60	24.8	5.0
						(.72)		
						)		
93.	Vantilborgh (2015)	215	.83			.18	7.2	3.5
						(.82)		
						)		
94.	Wu & Chen (2015)	258	.89	-.41			4.2	1.9
				(.91)				
				)				
95.	Zagenczyk et al. (2015) *	265				.35	8.9	3.2
						(.87)		
						)		

**Note:**

Reliabilities are presented between brackets, however, only 2 out of the 6 studies reported internal reliabilities for turnover.

\* Longitudinal study.

\*\*Unemployment rate and inflation rates are based on the year of data collection and as given in Euromonitor (Economies and Consumers Annual Data)



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**Appendix C: Overview of the countries included in the Meta-Analysis**

<b>Country</b>	<b># of studies</b>
Australia	2
Belgium	4
Canada	4
China	4
Chile	1
Finland	1
France	1
Germany	1
Hong Kong	3
India	4
Ireland	1
Israel	1
Italy	1
Japan	1
Netherlands	11
Pakistan	4
Philippines	7
Portugal	3
Quebec	1
South Africa	1
Taiwan	5
Turkey	2
UK	6
USA	26