

**THE IMPACT OF ECONOMIC FACTORS ON THE RELATIONSHIPS BETWEEN
PSYCHOLOGICAL CONTRACT BREACH AND JOB BEHAVIORS: A META-
ANALYSIS**

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Manuscript accepted for publication in *Employee Relations*

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 95 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 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 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 job performance, previous researchers have commonly adapted a two-dimensional approach to job performance by examining in-role performance and contextual performance (Zhao *et al.*, 2007). Given that job performance is inherently multi-dimensional (Johnson and Meade, 2010), we follow the commonly used two-dimensional approach to understanding job performance (Bal *et al.*, 2008; Zhao *et al.*, 2007). We focus on the effectiveness of an individual employee to perform formal job tasks (in-role performance) and the ability of an individual to perform tasks beyond the formal requirements (organizational citizenship behaviors, or OCB) (see Borman and Motowidlo, 1993). To understand turnover, we focus on turnover intention (refers to as an individual's intention to leave the job) and actual turnover.

Our first goal is to test the associations between PCB and job performance and turnover by accumulating the contemporary research findings to extend the previous meta-analysis (Zhao *et al.*, 2007). Drawing on SET, we expect psychological contract breach to be negatively related to in-role performance and organizational citizenship behavior (OCB), while being positively related to turnover intention and actual turnover (Bal *et al.*, 2008; Clinton and Guest, 2013; Conway and Briner, 2005), therefore we expect:

Hypothesis 1: Psychological contract breach is negatively related to in-role performance (H1a) and organizational citizenship behavior (H1b).

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 by empirical evidence that suggests that employees value their jobs and wages during uncertain economic times reflected by higher unemployment (Hoskins *et al.*, 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-Kardas and Kostrzewski, 2013) and even when they are employed, they might still feel that their well-being in the future is at a risk (Di Tella *et al.*, 2003). Often, anticipatory purchasing ability and anticipatory job loss are interrelated to actual inflation rates and unemployment rates of a country (Roth and Wohlfart, 2019).

Inflation is understood as the increase in the price level and the decline in the value of money (Kuchler and Zafar, 2019). Inflation is a key economic indicator and understanding how inflation impacts behavior is important (Gandelman and Hernández-Murillo, 2009) because it is a major part of people's thinking (Kuchler and Zafar, 2019). Besides, many households are concerned about the expenses that incur to buy the goods and services that are important to maintaining an appropriate living standard (Armantier *et al.*, 2015). Previous studies have shown that inflation of the economy is linked to lower employee job performance and turnover at the individual level (Gentry *et al.*, 2007).

Unemployment rates are important because unemployment rates have been found to be a unique determinant of an individual's work-life perceptions (Kassenboehmer and Haisken-DeNew, 2009). Much of unemployment at the national level implies the risk of losing employment at a personal level (Starova *et al.*, 2011). For instance, national-level unemployment provokes concerns about finding a new job and alternative source of income (Sun *et al.*, 2007), subsequently 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 (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, 2010; Zhao *et al.*, 2007; Vantilborgh *et al.*, 2015). We also manually searched through the reference lists of published articles on PCB.

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 Robinson, 1997), in doing so, we retained 838 articles. Sixth, only studies measuring the relations between PCB and PC fulfillment and the relevant work outcomes (in-role performance, OCB, turnover intention, and turnover) were included, excluding a further 633 studies on relationships with job attitudes and other outcomes. Seventh, only the studies reporting in English, French, or Dutch languages were included, and this resulted in 172 studies. Eighth, only employee

perspectives of PCB and fulfillment were included. This resulted in a set of 160 published articles reporting the relationship between PCB and fulfillment and the relevant outcomes. Finally, only the studies reporting the statistical information needed to calculate the correlations among the selected variables of this study were included. This resulted in a final database of 90 articles, which contained 95 independent samples. These 90 articles come from published sources and despite our very best attempts, we could not retain unpublished studies because the unpublished studies that we found failed to meet one of the eight inclusion criteria. For instance, some studies did not report the statistics that we required, or some failed to examine the selected variables and so on. Appendix A shows the full list of papers included in the meta-analysis.

We designed a coding protocol to record information about the study (author, publication date, the actual date of publication), sample (sample size, sample type, industry, country, demographic characteristics), measurement (mean, standard deviation, reliability), and effect size (correlation) following previous research. Because many studies used the term breach, fulfillment 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 fulfillment (e.g., transactional and relational dimensions) were reported (Lui and Ngo, 2004; Malhotra and Lumineau, 2011), we computed composite scores¹. 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

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

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 size².

To calculate interrater reliability, the first and second author coded all of the 95 studies. They deliberated ambiguous items to confirm uniformity through the coding process. Once the coding was completed, the authors examined the coding for discrepancies or errors among the common coded studies. Thereafter, we calculated interrater reliability estimates. Among the study inputs coded by the first two authors, a 99 percent agreement on study characteristics and a 99 percent agreement on study numbers were met, leading to an overall agreement of 99 percent between both raters. We checked all recorded information three months later, and few discrepancies (less than 1%) were identified and solved through discussions (Geyskens *et al.*, 2006).

Meta-analytic Procedure

Data were first manually entered into an SPSS sheet to create familiarity with the detailed data. Then, data were transferred to an Excel spreadsheet provided by Wilson (Developed by Schwarzer, 1996) which can be found on his website) to calculate true-score correlations using the Hunter and Schmidt (2004) approach. The Hunter and Schmidt (2004) method progressively make corrections for individual study variances. We used the correlation statistics r due to its wide availability. By using Mark's XI version, we calculated meta-analytic results including the reliabilities, fail-safe n , and Q statistics. To analyze moderating effects, we used meta-regression using the SPSS syntax based on Hunter and Schmidt (2004) method

² 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).

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.*, 2009; 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 studies³ 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 psychological contract breach⁴. When multiple dimensions of breach⁵ 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).

³ 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.

⁴ 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.

⁵ We had 5 studies that measured PCB using dimensional measures.

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 (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 analysis⁶.

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.

Results

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

First, we assessed the main effects of PCB on the outcomes. Table 1 shows the results of the main-effects meta-analysis⁷ 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 contained zero, actual turnover did contain zero in Zhao *et al.* (2007). In sum, H1a, H1b, H2a, and H2b are supported.

Insert Table 1 about here

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

⁷ 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.

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 moderate the relation between PCB and turnover intention ($\beta = -.32, p < .001$). Since the correlation between PCB and turnover intention is positive (see Table 1), the negative beta indicates that this positive correlation becomes smaller when the inflation rate becomes higher, thereby supporting H3c (i.e., an attenuating effect of inflation rate). Finally, inflation rate moderated the relation between PCB and actual turnover ($\beta = .02, p < .001$). Since the correlation between PCB and actual turnover is positive⁸ (see Table 1), the positive beta indicates that this positive correlation becomes larger when the inflation rate becomes higher. This is in the opposite direction as we expected in H3d and we will discuss this in more detail in the discussion. In sum, the main premise underlying hypothesis 3 was that the inflation rate could moderate the relationships between PCB and job behaviors, and our findings support that general idea, yet interestingly our findings also revealed that this is for some relationships more complex than we anticipated.

⁸ Findings related to actual turnover must be treated with caution due to limited number of studies and also due to limited number of studies reporting internal reliability of the measure in original studies.

Table 2 also shows that unemployment rate moderated the relationship between PCB and in-role performance ($\beta = .48, p < .001$). Since the correlation between PCB and in-role performance is negative (see Table 1), the positive beta indicates that this positive correlation becomes larger when the unemployment rate becomes higher, supporting H4a. The 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.

 Insert Table 2 about here

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 Zhao *et al.*'s (2007) meta-analysis, and both their and our meta-analyses indicate that PCB is an important predictor of these work behaviors. However, what our study revealed differently was stronger relationships for OCB and actual turnover than

Zhao *et al.*'s (2007) study (up from -.14 to -.24 for OCB and .06 to .18 for actual turnover). Our explanations are twofold. On the one hand, it might be that since 2007, employees may have responded more strongly to PCBs in relation to OCBs and turnover, potentially as a result of changing economic circumstances, such as layoffs and austerity (Bohle *et al.*, 2017).

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

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). However, on the other hand, employees are also leaving such ‘‘PC breaching’’ organizations, and search for a new employer, to secure or increase their income and purchasing power.

The unemployment rate moderated the relation between contract breach and in-role performance in the expected direction, with higher unemployment predicting attenuated responses to breaches. Yet, the unemployment rate moderated the relation between contract breach turnover intention in the opposite direction (i.e., when there is higher unemployment, the positive relation between breach and turnover intention becomes larger suggesting that the degree of turnover intention among people is higher when there is higher unemployment). This unexpected effect of unemployment can be due to similar reasons as discussed above. In times of high unemployment in a country, people may still retain their performance at work (Calvo *et al.*, 2015) but at the same time, they also start looking increasingly for other job opportunities (Luechinger *et al.*, 2010). Hence, what might be observed is a dual-process through which people, despite having experienced breach, may continue to perform well in one’s job and therefore not risking losing one’s job, and at the same time, start looking more intensely for other jobs to offset the risks and losses that co-align with experiencing breaches. This is a new insight above the prior conclusions of Zhao *et al.* (2007) that PCB normally elicits negative responses.

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) predict that employees actively restore a balance when PCB occurs, prospect theory would predict that this balance may be absent when employees perceive the potential losses of withholding their efforts to be too great. The notion of structural imbalance between employee and organization has been somewhat absent from the psychological contract literature (Bal and Dóci, 2018), but prospect theory may explain why individuals do not *always* reciprocate breach, and will they might still (appear to be) performing well after PCB.

Moreover, the study also has implications for the wider OB and HRM literature. While in OB the focus has traditionally been on individuals in the workplace, there is now increasing evidence that individual decision making does not just occur in isolation but is increasingly dependent on the context (Blomme *et al.*, 2010; Johns, 2018). Beyond a rich tradition on the impact of national culture on individual behavior and work climates, it has been less well understood that economic factors do have an impact on attitudes, behaviors, and decision making (Gelade *et al.*, 2006). Our study contributes to this by not only theoretically integrating the psychological contract literature with prospect theory to explain the impact of macroeconomic factors but also by empirically testing our hypotheses using a

large number of studies that have been conducted across the world across the last 25 years. In sum, we argue that research areas which traditionally focus on the explanation of individual behavior in the workplace should also take into account theoretically and empirically the notion of the wider socio-economic, political, and cultural context, which may profoundly influence how people feel, behave and make decisions in the workplace (Bal and Dóci, 2018).

Strengths, limitations, and suggestions for further research

The study also has some strengths and limitations. First, although we were able to collect a large dataset, most studies that we incorporated for this meta-analysis were cross-sectional. Therefore, it is not possible to draw causal conclusions on the impact of the relationships under study. Moreover, the current study has a clear focus by zooming-in on psychological contract breach relationships with work outcomes. However, even though it has been argued that breach-outcome relationships are mediated by the violation (Zhao *et al.*, 2007), we were unable to test this given the low number of studies present in our dataset that investigated such mediated relationships. If the number of studies is too small it might be better not to summarize them statistically and inappropriate to perform a meta-regression (Borenstein *et al.*, 2009). Given the limited number of studies, we did not perform a new analysis using a mediator into account when testing the influence of economic factors on the relationships between PCB and work outcomes. However, this is an interesting avenue for further research, and we recommend that future studies could look into this area. Moreover, there has been some critique in recent decades (e.g., Lambert *et al.*, 2003) suggesting that breach and fulfilment form distinct continua/ Although we performed a new analysis to see whether studies measuring PC fulfilment alone would produce different, our findings show that there were not many changes between coding it one way or the other. Therefore, we

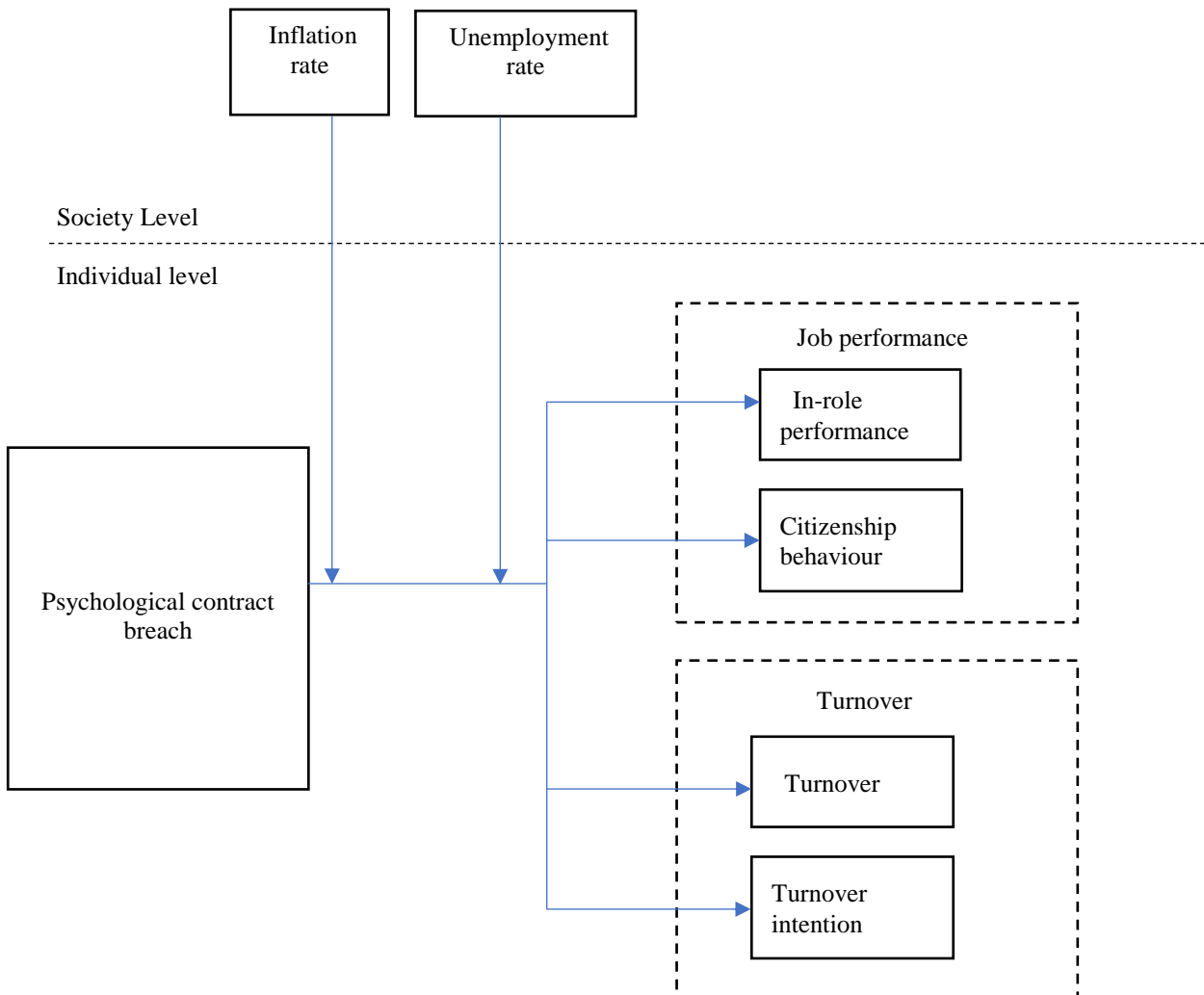
encourage future research to keep reverse coding fulfilment to treat as breach. However, we suggest that future research still explore whether the breach and fulfilment represent a single underlying continuum for various other work outcomes and how effects of breach might differ from fulfilment in relation to macroeconomic factors for various other work outcomes. Besides, at present, little do we know how economic factors might impact on the effects of distinct dimensions of breach and fulfilment (e.g., transactional and relational PCB) related to work outcomes beyond job performance and turnover such as job satisfaction, commitment or even misbehaviours. This may be an interesting avenue for future research. Moreover, we have explored two economic factors in our study, namely, inflation and unemployment. However, there may be other economic factors such as the Gini index or GDP growth rate can be used in future research. Furthermore, other aspects of the psychological contract may also be influenced by economic factors, such as the content of the contract itself (Vantilborgh *et al.*, 2014; Vogel *et al.*, 2009), and thus their perceptions of possible gains and losses in the context of contract evaluations.

Finally, one of our six turnover studies include a sample of air force employees (Clinton and Guest, 2014) – 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 related to turnover (intentions), yet our study also demonstrates that these general relationships are contingent upon the state of the economic environment. Therefore, organizations and managers should be aware that while employees may reduce their in-role performance less after a PCB in adverse economic circumstances, their intentions to leave the organizations might be increased at the same time, and the negative effect of PCB on extra-role performance (i.e., OCB) is not reduced. Thus, taking all of our findings together, reducing PCB is crucial also in economic dire times, because although employees will react with higher in-role performance to enhance their employability by performing well, they will also deal with the PCB by reducing their extra effort for the company and looking for other jobs at the same time. In conclusion, both scholars and practitioners will thus gain from a deeper understanding of how macroeconomic factors affect employee reactions to PCB. While some effects are attenuated under conditions of losses due to an economic downturn (i.e., high inflation and unemployment), other effects might be enhanced (i.e., PCB's relationship with turnover).

Figure 1: Theoretical model

REFERENCES

- Acemoglu, D. (2001), "Good jobs versus bad jobs", *Journal of Labor Economics*, Vol. 19 No. 1, pp. 1-21.
- Adriaenssen, D.J. and Johannessen, J.A. (2016), "Prospect theory as an explanation for resistance to organizational change: some management implications", *Problems and Perspectives in Management*, Vol. 14 No. 2, pp. 84-92.
- Angrave, D., Charlwood, A. and Greenwood, I. (2017), "Do economic conditions influence union activism behaviour?", *Economic and Industrial Democracy*, Vol. 38 No. 2, pp. 344-369.
- Armantier, O., De Bruin, W.B., Topa, G., Der Klaauw, W. and Zafar, B. (2015), "Inflation expectations and behaviour: do survey respondents act on their beliefs?", *International Economic Review*, Vol. 56 No. 2, pp. 505-536.
- Augner, C. (2015), "Job satisfaction in the European union: the role of macroeconomic, personal, and job-related factors", *Journal of Occupational Environment Medicine*, Vol. 57 No. 3, pp. 241-245.
- Bal, P.M., De Lange, A.H., Jansen, P.W.G. and Van Der Velde, M.E.G. (2008), "Psychological contract breach and job attitudes: a meta-analysis of age as a moderator", *Journal of Vocational Behavior*, Vol. 72 No. 1, pp. 143-158.
- Bal, P.M. and Dóci, E. (2018), "Neoliberal ideology in work and organizational psychology", *European Journal of Work and Organizational Psychology*, Vol. 27 No. 5, pp. 536-548.
- Blau, P. (1964), *Exchange and Power in Social Life*, Routledge, New York, NY.
- Blomme, R.J., Rheede, A.V. and Tromp, D.M. (2010), "Work-family conflict as a cause for turnover intentions in the hospitality industry", *Tourism and Hospitality Research*, Vol. 10 No. 4, pp. 269-285.

Bohle, S.L., Bal, P.M., Jansen, P.G., Leiva, P.I. and Alonso, A.M. (2017), "How mass layoffs are related to lower job performance and OCB among surviving employees in Chile: an investigation of the essential role of psychological contract", *International Journal of Human Resource Management*, Vol. 28 No. 20, pp. 2837-2860.

Borenstein, M., Hedges, L.V., Higgins, J.P.T. and Rothstein, H.R. (2009), *Introduction to Meta-Analysis*, John Wiley & Sons Ltd, New York, NY.

Borman, W.C. and Motowidlo, S.J. (1993), "Expanding the criterion domain to include elements of contextual performance" in Schmitt, N., and Borman, W.C., (Eds.), *Personnel Selection in Organizations*, San Francisco, Jossey-Bass, pp. 71-98.

Calvo, E., Mair, C.A. and Sarkisian, N. (2015), "Individual troubles, shared troubles: the multiplicative effect of individual and country-level unemployment on life satisfaction in 95 nations (1981-2009)", *Social Forces*, Vol. 93 No. 4, pp. 1625-1653.

Campbell-Hunt, C. (2000), "What have we learned about generic competitive strategy? a meta-analysis", *Strategic Management Journal*, Vol. 21 No. 2, pp. 127-154.

Carr, E. and Chung, H. (2014), "Employment insecurity and life satisfaction: the moderating influence of labour market policies across Europe", *Journal of European Social Policy*, Vol. 24 No. 4, pp. 383-399.

Carsten, J.M. and Spector, P.E. (1987), "Unemployment, job satisfaction, and employee turnover: a meta-analytic test of the Muchinsky model", *Journal of Applied Psychology*, Vol. 72 No. 3, pp. 374-381.

Clinton, M. and Guest, D. (2013), "Psychological contract breach and voluntary turnover: testing a multiple mediation model", *Journal of Occupational and Organizational Psychology*, Vol. 87 No.1, pp. 200-207.

Conway, N. and Briner, R.B. (2005), *Understanding Psychological Contracts at Work: A Critical Evaluation of Theory and Research*, Oxford University Press, Oxford.

- Cropanzano, R., Anthony, E., Daniels, S. and Hall, A. (2017), "Social exchange theory: a critical review with theoretical remedies", *Academy of Management Annals*, Vol. 11 No. 1, pp. 479-516.
- Czaika, M. (2015), "Migration and economic prospects", *Journal of Ethnic and Migration Studies*, Vol. 41 No. 1, pp. 58-82.
- Dalal, D.K. and Zickar, M.J. (2012), "Some common myths about centering predictor variables in moderated multiple regression and polynomial regression", *Organizational Research Methods*, Vol. 15 No. 3, pp. 339–362.
- Dick, T.J.O. and Floyd, J.E. (2001), "Capital imports and the jacksonian economy: a new view of the balance of payments", available at:
<https://www.economics.utoronto.ca/public/workingPapers/UT-ECIPA-FLOYD-01-01.pdf>
(accessed 02 August 2020)
- Di Tella, R., MacCulloch, R. and Oswald, A. (2003), "The macroeconomics of happiness", *Review of Economics and Statistics*, Vol. 95 No. 1, pp. 809–828.
- Dunlap, E., Johnson, B.D., Kotharba, J.A. and Fackler, J. (2010), "Macro-level social forces and micro-level consequences: poverty, alternate occupations, and drug dealing", *Journal of Ethnicity in Substance Abuse*, Vol. 9 No. 2, pp. 115-127.
- Euromonitor (2018), available at: <https://www.euromonitor.com> (accessed 2 January 2020)
- Faccini, R. and Melosi, L. (2019), "Bad jobs and low inflation", available at: <https://ssrn.com/abstract=3363541> (accessed 28 July 2020).
- Fenwick, R. and Tausig, M. (1994), "The macroeconomic context of job stress", *Journal of Health and Social Behavior*, Vol. 35 No. 3, pp. 266–282.
- Field, A.P. and Gillett, R. (2010), "How to do a meta-analysis", *British Journal of Mathematical and Statistical Psychology*, Vol. 63 No. 3, pp. 665- 694.

- Gandelman, N. and Hernández-Murillo, R. (2009), “The impact of inflation and unemployment on subjective personal and country evaluations”, *Federal Reserve Bank of St. Louis Review*, Vol. 91 No. 3, pp. 107-126.
- Gelade, G.A., Dobson, P. and Gilbert, P. (2006), “National differences in organizational commitment: effect of economy, product of personality, or consequence of culture?”. *Journal of Cross-Cultural Psychology*, Vol. 37 No. 5, pp. 542-556.
- Gentry, W., Kuhnert, K., Mondore, S. and Page, E. (2007), “The influence of supervisory-support climate and unemployment rate on part-time employee retention: a multilevel analysis”, *Journal of Management Development*, Vol. 26 No. 10, pp.1005-1022.
- Geyskens, I., Steenkamp, J. and Kumar, N. (2006), “Make, buy, or ally: a transaction cost theory meta-analysis”, *Journal of Marketing*, Vol. 49, pp. 519-543.
- Gouldner, A. (1960), “The norm of reciprocity: a preliminary statement”, *American Sociological Review*, Vol. 25, pp. 161-178.
- Guest, D.E. (2004), “The psychology of the employment relationship: an analysis based on the psychological contract”, *Applied Psychology*, Vol. 53 No. 4, pp. 541-555.
- Henry, J. (2008), “The theory of the state: the position of marx and engels, forum for social economics”, *Taylor & Francis Journals*, Vol. 37 No. 1, pp. 13-25.
- Holden, S. (2005), “Wage formation under low inflation”, Piekkola H. and Snellman K. (Ed.), *Collective Bargaining and Wage Formation*, Physica-Verlag, available at: https://doi.org/10.1007/3-7908-1598-5_4 (accessed 28 July 2020).
- Hoskins, K. (2017), “The changing context of further and higher education and youth employment”, In: *Youth Identities, Education and Employment. Policy and Practice in the Classroom*, Palgrave Macmillan, London.
- Hunter, J.E. and Schmidt, F.L. (2004), *Methods of Meta-analysis: Correcting Error and Bias in Research Findings*, Sage, New York, NY.

Iverson, R. and Deery, S. (2000), "Job performance and voluntary turnover: an examination of linearity, curvilinearity, and the moderators of time, unemployment rate, and perceived ease of movement using event history analysis", *Academy of Management Proceedings*, available at: [10.5465/APBPP.2000.5535027](https://doi.org/10.5465/APBPP.2000.5535027).

Jacobs, D., Perera, D. and Williams, T. (2014), "Inflation and the cost of living", RBA bulletin, Reserve bank of Australia, available at:

<https://ideas.repec.org/a/rba/rbabul/mar2014-04.html> (accessed 15 January 2020).

Jiang, K., Lepak, D.P., Hu, J., Baer, J.C. (2012), "How does human resource management influence organizational outcomes? a meta-analytic investigation of mediating mechanisms", *Academy of Management Journal*, Vol. 55 No. 6, pp. 1264–1294.

Johns, G. (2018), "Advances in the treatment of context in organizational research", *Annual Review of Organizational Psychology and Organizational Behavior*, Vol. 5 No. 1, pp. 21-46.

Johnson, E.C. and Meade, A.W. (2010), "A multi-level investigation of overall job performance ratings", available at: <https://doi.org/10.1037/e518392013-404> (accessed 24 February 2020).

Kahneman, D. (2011), *Thinking, Fast and Slow*, Farrar, Straus & Giroux, New York, NY.

Kahneman, D. and Tversky, A. (1979), "Prospect theory: an analysis of decision under risk", *Econometrica*, Vol. 47 No. 2, pp. 263-291.

Kassenboehmer, S. and Haisken-DeNew, J. (2009), "You're fired! The causal negative effect of entry unemployment on life satisfaction", *Economic Journal*, Vol. 119 No. 536, pp. 448–462.

Kirca, A.H., Hult, G.T. M., Roth, K., Cavusgil, S.T., Perry, M.Z., Akdeniz, M.B., Deligonul, S.Z., Mena, J.A., Pollitte, W.A. and Hoppner, J.J. (2011), "Firm specific assets, multi-nationality, and financial performance: a meta-analytic review and theoretical integration", *Academy of Management Journal*, Vol. 54 No. 1, pp. 47–72.

Kuchler, T. and Zafar, B. (2019), "Personal experiences and expectations about aggregate outcomes", *The Journal of Finance*, Vol. 74 No. 5, pp. 2491-2542.

Lambert, L., Edwards, J. and Cable, D. (2003), "Breach and fulfillment of the psychological contract: a comparison of traditional and expanded views", *Personnel Psychology*, Vol. 56, pp. 895 - 934.

Lassale, C., Batty, G.D., Baghdadli, A., Jacka, F., Sánchez-Villegas, A., Kivimäki, M. and Akbaraly, T. (2019), "Healthy dietary indices and risk of depressive outcomes: a systematic review and meta-analysis of observational studies", *Mol Psychiatry*, Vol. 24 No. 7, pp. 965-986.

Levy, J. (1992), "An introduction to prospect theory", *Political Psychology*, Vol. 13 No. 2, pp. 171-186.

Lipsey, M.W. and Wilson, D.B. (2001), *Applied Social Research Methods Series: Practical Meta-analysis*, Sage Publications, London.

Lucy, D. and Broughton, A. (2011), "About labour market analysis & minimum wage", Employment Relation Research Series, No. 119, available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/32212/11-918-understanding-behaviour-employees-conflicts-at-work.pdf (accessed 12 January 2020).

Luechinger, S., Meier, S. and Stutzer, A. (2010), "Why does unemployment hurt the employed? evidence from the life satisfaction gap between the public and the private Sector", *Journal of Human Resources*, Vol. 45 No. 4, pp. 998-1045.

Lui, S.S. and Ngo, H.Y. (2004). "The role of trust and contractual safeguards on cooperation in non- equity alliances", *Journal of Management*, Vol. 30 No. 4, pp. 471-485

- Malhotra, D. and Lumineau, F. (2011), "Trust and collaboration in the aftermath of conflict: the effects of contract structure", *Academy of Management Journal*, Vol. 54 No. 5, pp. 981–998.
- Metz, I., Kulik, C.T., Brown, M. and Cregan, C. (2012). "Changes in psychological contracts during the global financial crisis: the manager's perspective", *The International Journal of Human Resource Management*, Vol. 23 No. 20, pp. 4359-4379.
- Mohnen, A. and Pokorny, K. (2005), "Reference dependency and loss aversion in employer-employee-relationships: a real effort experiment on the incentive impact of the fixed wage", available at: [10.2139/ssrn.641542](https://ssrn.com/abstract=102139) (accessed 20 October 2019).
- Morrison, E.W. and Robinson, S.L. (1997), "When employees feel betrayed: a model of how psychological contract violation develops", *The Academy of Management Review*, Vol. 22, No. 1, pp. 226-256.
- Myant, M., Theodoropoulou, S. and Piasna, A. (2016), "Unemployment, internal devaluation and labour market deregulation in Europe", available at: [www.etui.org > content > download > file > 16](http://www.etui.org/content/download/file/16) (accessed 20 October 2019).
- Nyberg, A. (2010). "Retaining your high performers: moderators of the performance–job satisfaction–voluntary turnover relationship", *Journal of Applied Psychology*, Vol. 95 No. 3, pp. 440–453.
- Park, T.Y. and Shaw, J.D. (2013). "Turnover rates and organizational performance: a meta-analysis". *Journal of Applied Psychology*, Vol. 98 No. 2, pp. 268–309.
- Pate, J. (2006), "The changing contours of the psychological contract: unpacking context and circumstances of breach", *Journal of European Industrial Training*, Vol. 30 No. 1, pp. 32-47.
- Roth, C. and Wohlfart, J. (2019), "How do expectations about the macroeconomy affect personal expectations and behavior?", working paper, available at: <https://www.briq-institute.org/wc/files/people/chris-roth/working-papers/how-do-expectations-about-the->

macroeconomy-affect-personal-expectations-and-behavior.pdf (accessed 12 September 2019).

Rousseau, D. (1989), "Psychological and implied contracts in organisations", *Employee Responsibilities and Rights Journal*, Vol. 2 No. 2, pp. 121-139.

Sarnecki, A. (2015), *Unemployment as a moderator of the organizational justice turnover intentions relationship*, paper presented at the annual meeting of the academy of management proceedings, 2015, pp. 15954-15954, available at: 10.5465/AMBPP.2015.15954abstract (accessed on 22 December 2019).

Schwarzer, R. (1996), "Computer programs for meta-analysis", available at <http://www.ralfschwarzer.de> (accessed 25 August 2020)

Sevak, P. and Schmidt, L. (2011), "Macroeconomic conditions and updating of expectations by older Americans", working paper (paper number, 2011-259), Michigan Retirement Research Center, Michigan.

Sirola, N. and Pitesa, M. (2018), "The macroeconomic environment and the psychology of work evaluation", *Organizational Behavior and Human Decision Processes*, Vol. 144, pp. 11-24.

Stavrova, O., Schloesser, T. and Fetchenhauer, D. (2011), "Are the unemployed equally unhappy all around the world? the role of the social norms to work and welfare state provision in 28 OECD countries", *Journal of Economic Psychology*, Vol. 32 No. 1, pp. 159-171.

Stokvik, H., Adriaenssen, D.J. and Johannessen, J.A. (2016), "Strategic entrepreneurship and intrapreneurial intensity", *Problem, and Perspectives in Management*, Vol. 14 No. 2, pp. 348-359.

Sun, L.Y., Aryee, S. and Law, K.S. (2007), “High-performance human resource practices, citizenship behavior, and organizational performance: a relational perspective”. *Academy of Management Journal*, Vol. 50 No. 3, pp. 558–577.

Thomas, D.C., Fitzsimmons, S.R., Ravlin, E.C., Au, K.Y., Ekelund, B.Z. and Barzantny, C. (2010), “Psychological contracts across cultures”, *Organizational Studies*, Vol. 31 No. 11, pp. 1437-1458.

Tversky, A. and Kahneman, D. (1992), “Advances in prospect theory: cumulative representation of uncertainty”, *Journal of Risk and Uncertainty*, Vol. 5 No. 5, pp. 297–323.

Vantilborgh, T., Bidee, J., Pepermans, R., Willems, J., Huybrechts, G. and Jegers, M. (2014), “Effects of ideological and relational psychological contract breach and fulfilment on volunteers’ work effort”, *European Journal of Work and Organizational Psychology*, Vol. 23 No. 2, pp. 217-230.

Vantilborgh, T., Dries, N., De Vos, A. and Bal, P.M. (2015), “The psychological contracts of older employees”, in P.M. Bal, D. Kooij and D.M. Rousseau (eds.), *Aging Workers and the Employee-Employer Relationship*, Springer, Amsterdam, pp. 107-127.

Vogel, L., Menz, J. and Fritsche, U. (2009), “Prospect theory and inflation perceptions - an empirical assessment. Macroeconomics and finance series 200903”, available at:

<https://econpapers.repec.org/paper/hepmacppr/200903.htm> (accessed 5 October 2019)

William. A.B. (2004), “The prospects for prospect theory: an empirical evaluation of international relations applications of framing and loss aversion”, *Political Psychology*, Vol. 25 No. 3, pp. 331-362.

Wilson, D.B (2010), “Meta-analysis macros for SAS, SPSS, and Stata retrieved”, available at: <http://mason.gmu.edu/~dwilsonb/ma.html>(accessed 12 August 2020)

Worach-Kardas, H. and Kostrzewski, S. (2013), “Quality of life and health state of long: term unemployed in older production age”, *Applied Research Quality Life*, Vol. 9 No. 9, pp. 335–353.

Yam, Y. (2016), “The influence of macro and micro-environmental factors on the consumption of mobile phones and marketing strategies”, DBA thesis, Southern Cross University, Lismore, NSW, available at: <https://epubs.scu.edu.au/theses/512/> (accessed on 12 November 2019)

Zhao, H., Wayne, S.J., Glibkowski, B.C. and Bravo, J. (2007), “The impact of psychological contract breach on work-related outcomes: a meta-analysis”, *Personnel Psychology*, Vol. 60 No. 3, pp. 647–680.

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>	ρ	SD ρ	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; ρ = true score correlation; SD of ρ =

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

Economic factor	Outcomes	k	N	Beta	S.E.	t	p-value	R²
	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	.02	.01	2.66	.00	.00
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*² = 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

Economic factor	Outcomes	k	N	Beta	S.E.	t	p-value	R²
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*² = explained variance.

Table 4⁹

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

Outcomes	Study	<i>k</i>	<i>N</i>	<i>r</i>	ρ	SD ρ	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; ρ = true score correlation; SD of ρ =

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

⁹ 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.

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
19. Costa & Neves (2017)	220	.86	-.04 (.91)	-.13 (.85)			14.1	-0.3
20. Coyle-Shapiro & Kessler (2000)	6953	.87		-.17 (.63)			8.3	2.5
21. Coyle-Shapiro & Kessler (2003)	5709	.81		-.26 (.74)			6.20	1.3
22. De Cuyper & De Witte (2006)	544	.80	-.24 (.74)				7.5	3.3
23. De Jong et al. (2009)	313	.93			.35 (.78)		5.7	1.3
24. De Jong et al. (2009)	523	.96			-.14 (.79)		5.7	1.2
25. De Jong (2009)	779				.01		5.7	1.2

26. Dulac et al. (2008) *	152	.95			(.79) .57	8.4	2.1
27. Freese et al (1999) *	119	.91			(.96) .31	7.2	1.9
28. Freese & Schalk (2008)	480	.92			(.88) .33	5.7	1.3
29. Gardner et al. (2015) *	462	.82	-.02 (.87)		.07 (.79)	2.8	3.2
30. Granrose & Baccili (2006)	145				.04 (.88)	5.8	1.6
31. Gregory et al. (2007) (2007)	343	.70			.38 (.72)	6.8	2.2
32. Griep et al. (2016) *	247			-.16		7.1	3.5
33. Guchait et al. (2015)	289	.90			0.38 (.82)	6.4	9.3
34. Guerrero & Herrbach (2005)	217				.30	8.7	1.6
35. Hartmann & Rutherford (2015)	308	.94	-.12 (.92)		.55 (.69)	8.1	2.1
36. Henderson et al. (2008)	278	.80	-.17 (.89)	-.16		5.5	2.7
37. Huiskamp & Schalk (2002)	1331	.83			.33 (.86)	3.6	2.2
38. Jafri (2012)	90	.84		-.15 (.86)		9.2	8.3
39. Johnson & O'Leary-Kelly (2013)	103	.94	-.33 (.95)	-.07		4.7	3.2
40. Kraak et al. (2017)	1066	.95			.39 (.95)	5.0	1.3
41. Lapalme et al. (2011)	186	.95		-.14 (.91)		6.0	2.1
42. Lapointe et al. (2013)	224	.95			.22 (.90)	8.4	0.3
43. Larwood et al. (1998)	257	.75			.44 (.85)	6.2	2.8
44. Lee et al. (2014)	141	.86	-.20 (.76)	-.12 (.72)		9.6	1.6
45. Lee et al. (2011)	136				.24		
46. Lemire & Rouillard (2005)	132				.44 (.82)	7.2	1.9
47. Lester et al. (2001)	268	.90	-.03	-.02	.14	5.0	2.3
48. Lester et al. (2002)	134	.90	-.35 (.93)			4.6	1.6
49. Li et al. (2016)	272	.82	-.12 (.44)			3.3	1.4
50. Lo & Aryee (2003)	152		-.31 (.78)	-.31 (.78)	.48	6.30	-4.0
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 (.86)	8.3	0.3
54. Piccoli et al. (2017)	570	.85		-.25 (.72)		10.6	3.0

55. Quratulain et al. (2018)	247	.71			.22 (.78)	7.7	9.7		
56. Raja et al. (2004)	197	.79			.48 (.83)	7.3	2.9		
57. Restubog et al. (2007)	162	.87	-.20 (.89)	-.49 (.80)		7.9	5.5		
58. Restubog et al. (2007)	189	.82	-.47 (.89)	-.59 (.72)		6.9	2.3		
59. Restubog et al. (2006)	167	.87	-.47 (.77)	-.39 (.78)		7.1	2.7		
60. Restubog et al. (2010)	250	.72	-.31 (.87)	-.31 (.72)		7.9	5.5		
61. Restubog et al. (2010)	158	.88	-.60 (.95)	-.24 (.84)		7.9	5.5		
62. Restubog (2008) *	240	.78			-.22 (.81)	7.2	4.8		
53. Restubog et al. (2008) *	137	.80			-.13 (.83)	7.2	4.8		
64. Rigotti (2009)	592				.28 (.79)	10.3	1.7		
65. Robinson (1996) *	125				-.25 (.67)	.38 (.86)	.20	7.5	3.0
66. Robinson & Morrison (2000) *	147	.92	-.18 (.95)					7.5	4.8
67. Robinson & Rousseau (1994) *	128	.78			.42	.32		6.9	4.8
68. Rodwell, J. & Ellershaw (2016)	459	.89			.51			5.1	3.3
69. Rosen et al. (2009)	319				-.29 (.75)			5.2	3.4
70. Salin & Notelaers (2017)	1148	.90			.52 (.89)			8.2	1.5
71. Schalk et al. (1995)	338	.72			.39 (.87)			7.3	3.1
72. Shahnawaz, & Goswami (2011)	100	.80			-.08 (.87)			9.2	12.1
73. Shahnawaz, & Goswami (2011)	100	.80			.17 (.87)			9.2	12.1
74. Shih et al. (2012)	204	.94	-.19 (.90)	-.19 (.90)				5.2	3.5
75. Si et al. (2008)	524				.32 (.84)			1.9	3.8
76. Steve & Cheng (2007)	135	.88			.42 (.82)			5.0	-0.3
77. Stoner et al. (2011) *	126	.95			.41 (.92)			5.9	-0.3
78. Stoner et al. (2010)	126				.46 (.92)			4.6	3.8
79. Sturges et al. (2005)	151	.91	-.38			.04		5.2	1.2
80. Suazo (2009)	196	.89	-.13		.35 (.87)			5.1	3.4
81. Suazo et al. (2005)	234	.88	-.18 (.87)	-.28 (.93)	.57 (.76)			4.7	2.8
82. Sutton & Griffin (2004) *	235				-.32 (.90)			8.4	0.2
83. Takase et al. (2016)	766	.91			.54 (.93)			4.4	2.8
84. Tekleab et al. (2013)	106		-.07 (.88)		-.15 (.97)			9.3	-0.3

85. Tekleab and Taylor (2003)	298	.81	-.14 (.81)	-.16 (.85)	.23 (.85)		4.2	2.2
86. Tekleab et al. (2005)	191	.83			.14 (.85)	-.02	4.7	2.8
87. Turnley et al. (2003)	134	.85	-.38 (.93)	-.41 (.85)			4.0	3.4
88. Turnley & Feldman (1999)	781				.38 (.92)		5.4	2.9
89. Turnley & Feldman (2000)	804	.83	-.46 (.81)	-.46 (.81)	0.48 (.93)		5.5	2.9
90. Uen et al. (2009)	127	.80	-.24 (.83)	-.21 (.83)			4.1	2.3
91. Van den Heuvel et al. (2017)	669				.38 (.81)		7.2	2.5
92. Van der Vaart et al. (2015)	246				.60 (.72)		24.8	5.0
93. Vantilborgh (2015)	215	.83			.18 (.82)		7.2	3.5
94. Wu & Chen (2015)	258	.89	-.41 (.91)				4.2	1.9
95. Zagenczyk et al. (2015) *	265				.35 (.87)		8.9	3.2

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)***

Appendix B: References of Included Studies in the Meta-Analysis

1. Akhtar, M.N., Bal, M. and Long, L. (2016), "Exit, voice, loyalty, and neglect reactions to frequency of change, and impact of change", *Employee Relations*, Vol. 38 No. 4, 536-562.
2. Arain, G.A., Hameed, I. and Farooq, O. (2012), "Integrating workplace affect with psychological contract breach and employees' attitudes", *Global Business and Organizational Excellence*, Vol. 31 No. 6, 50-62.
3. Aykan, E. (2014), "Effects of perceived psychological contract breach on turnover intention: Intermediary role of loneliness perception of employees", *Procedia- Social and Behavioral Sciences*, Vol. 150, pp. 413-419.
4. Bal, P.M., Chiaburu, D. S. and Jansen, P.G.W. (2010), "Psychological contract breach and work performance: Is social exchange a buffer or an intensifier?", *Journal of Managerial Psychology*, Vol. 25 No. 3, pp. 252-273.
5. Bal, P.M., De Lange, A.H., Jansen, P.G.W. and Van Der Velde, M.E.G. (2013), "A longitudinal study of age-related differences in reactions to psychological contract breach: age and psychological contract breach", *Applied Cognitive Psychology*, Vol. 62 No.1, pp. 157-181.
6. Bal, P.M., Jansen, P.G.W., Van der Velde, M.E.G., De Lange, A.H. and Rousseau, D.M. (2010), "The role of future time perspective in psychological contracts: a study among older workers", *Journal of Vocational Behaviour*, Vol. 76, pp. 474-486.
7. Bohle, S, L., Bal, P.M., Jansen, P.G.W., Leiva, P.I. and Alonso, A.M. (2017), "How mass layoffs are related to lower job performance and OCB among surviving employees in Chile: an investigation of the essential role of psychological contract", *International Journal of Human Resource Management*, Vol. 28 No. 20, pp. 2837-2860.

8. Bunderson, J.S. (2001), "How work ideologies shape the psychological contracts of professional employees: doctors' responses to perceived breach", *Journal of Organizational Behavior*, Vol. 22 No. 7, pp. 717-741.
9. Büyükyılmaz, O. and Cakmak, A. (2013), "Direct and indirect effects of psychological contract breach on academicians' turnover intention in Turkey", *Journal of Business Economics & Finance*, Vol. 2, pp. 50-66.
10. Carbery, R., Garavan, T. N., O'Brien, F. and McDonnell, J. (2003), "Predicting hotel managers' turnover cognitions", *Journal of Managerial Psychology*, Vol. 18 No.7, pp. 649-679.
11. Cassar, V., Briner, R.B. and Buttigieg, S. (2016), "What's in a broken promissory obligation? developing and testing a multiple component form measure of psychological contract breach", *The International Journal of Human Resource Management*, Vol. 27 No. 5, pp. 567-592.

12. Cavanaugh, M.A. and Noe, R.A. (1999), "Antecedents and consequences of relational components of the new psychological contract", *Journal of Organizational Behaviour*, Vol. 20 No. 3, pp. 323-340.
13. Cesario, S.F., Chambel, M.J. and Guillén, C. (2014), "What if expatriates decide to leave? the mediation effect of the psychological contract fulfilment", *Management Research*, Vol. 12 No. 2, pp. 03-122.
14. Chambel, M.J. and Alcover, C.M. (2011), "The psychological contract of call-centre workers: employment conditions, satisfaction and civic virtue behaviours", *Economic and Industrial Democracy*, Vol. 32 No. 1, pp. 115–134.
15. Chen, T. and Wu, C. (2017), "Improving the turnover intention of tourist hotel employees", *International Journal of Contemporary Hospitality Management*, Vol. 29 No. 7, pp. 1914-1936.
16. Cheung, M.F., Wong, C. and Yuan, G.Y. (2016), "Why mutual trust leads to highest performance: the mediating role of psychological contract fulfillment", *Asia Pacific Journal of Human Resources*, Vol. 55 No. 4, pp. 430-453.
17. Clinton, M.E. and Guest, D.E. (2014), "Psychological contract breach and voluntary turnover: testing a multiple mediation model", *Journal of Occupational and Organizational Psychology*, Vol. 87 No. 1, pp. 200-207.
18. Cohen, A. and Diamant, A. (2017), "The role of justice perceptions in determining counterproductive work behaviors", *The International Journal of Human Resource Management*, doi: 10.1080/09585192.2017.1340321.
19. Costa, S. and Neves, P. (2017), "Job insecurity and work outcomes: the role of psychological contract breach and positive psychological capital", *Work & Stress*, Vol. 31 No. 4, pp. 375-394.
20. Coyle-Shapiro, J.A.M. and Kessler, I. (2000), "Consequences of the psychological contract for the employment relationship: a large-scale survey", *Journal of Management Studies*, Vol. 37 No. 7, pp. 903-930.

21. Coyle-Shapiro, J.A.M. and Kessler, I. (2003), "The employment relationship in the U.K. public sector: a psychological contract perspective", *Journal of Public Administration Research and Theory*, Vol. 13 No. 2, pp. 213–230.
22. De Cuyper, N. and De Witte, H. (2006), "The impact of job insecurity and contract type on attitudes, well-being and behavioural reports: a psychological contract perspective", *Journal of Occupational and Organizational Psychology*, Vol. 79 No.3, pp. 395-409.
23. De Jong, J., Schalk, R. and Croon, M. (2009), "The role of trust in secure and insecure employment situations: a multiple-group analysis", *Economic and Industrial Democracy*, Vol. 30 No. 4, pp. 510–538.
24. De Jong, J.P., Schalk, R. and Cuyper, N. (2009), Balanced versus unbalanced psychological contracts in temporary and permanent employment: associations with employee attitudes, *Management and Organization Review*, Vol. 5 No. 3, pp. 329-351.
25. Dulac, T., Coyle-Shapiro, J., Henderson, D. and Wayne, S. (2008), "Not all responses to breach are the same: the interconnection of social exchange and psychological contract processes in organizations", *The Academy of Management Journal*, Vol. 51 No. 6, pp. 1079-1098.
26. Freese, C., Heinen, J. and Schalk, R. (1999), "Organisatieverandering en het psychologisch contract, betrokkenheid en intentie tot verloop bij werknemers in de thuiszorg", *Tijdschrift voor Arbeidsvraagstukken*, Vol. 15 No. 3, pp. 208-218.
27. Freese, C. and Schalk, R. (2008), "How to measure the psychological contract? a critical criteria-based review of measures", *South African Journal of Psychology*, Vol. 38 No. 2, pp. 269–286.

28. Gardner, D.G., Huang, G., Niu, X., Pierce, J. L. and Lee, C. (2015), "Organization-based self-esteem, psychological contract fulfillment, and perceived employment opportunities: a test of self-regulatory theory", *Human Resource Management*, Vol. 54 No. 6, pp. 933-953.
29. Granrose, C. S. and Baccili, P. (2006), "Do psychological contracts include boundaryless or protean careers?", *Career Development International*, Vol. 11 No. 2, pp. 163-182.
30. Gregory, D.M., Way, C.F., LeFort, S., Barrett, B.J. and Parfrey, P.S. (2007), "Predictors of registered nurses' organizational commitment and intent to stay", *Health care Management Review*, Vol. 32 No. 2, pp. 119-127.
31. Griep, Y., Vantilborgh, T., Baillien, E. and Pepermans, R. (2016), "The mitigating role of leader-member exchange when perceiving psychological contract violation: a diary survey study among volunteers", *European Journal of Work and Organizational Psychology*, Vol. 25 No. 2, pp. 254-271.
32. Guchait, P., Cho, S. and Meurs, J.A. (2015), "Psychological contracts, perceived organizational and supervisor support: investigating the impact on intent to leave among hospitality employees in India", *Journal of Human Resources in Hospitality & Tourism*, Vol. 14 No. 3, pp. 290-315.
33. Guerrero, S. (2005), "Measurement of the psychological contract in a french work context (La mesure du contrat psychologique dans un contexte de travail francophone)", *Relations industrielles / Industrial Relations*, Vol. 60 No.1, pp. 112-144.
34. Hartmann, N.N. and Rutherford, B.N. (2015), "Psychological contract breach's antecedents and outcomes in salespeople: the roles of psychological climate, job attitudes, and turnover intention", *Industrial Marketing Management*, Vol. 51, pp. 158-170.
35. Henderson, D.J., Wayne, S.J., Shore, L.M., Bommer, W.H. and Tetrick, L.E. (2008), "Leader-member exchange, differentiation, and psychological contract

fulfillment: a multilevel examination”. *Journal of Applied Psychology*, Vol. 93 No. 6, pp. 1208-1219.

36. Huiskamp, R. and Schalk, R. (2002), “Psychologische contracten in arbeidsrelaties: de stand van zaken in Nederland”, *Gedrag en Organisatie*, Vol. 15 No. 6, pp. 370-385.

37. Jafri, M.H. (2012), “Influence of psychological contract breach on organizational citizenship behaviour and trust”, *Psychological Studies*, Vol. 57, pp. 29-36.

38. Johnson, J.L. and O'Leary-Kelly, A.M. (2003), “The effects of psychological contract breach and organizational cynicism: not all social exchange violations are created equal”, *Journal of Organizational Behavior*, Vol. 24 No. 5, pp. 627-647.

39. Kraak, J.M., Lunardo, R., Herrbach, O. and Durrieu, F. (2017), “Promises to employees matter, self-identity too: effects of psychological contract breach and older worker identity on violation and turnover intentions”, *Journal of Business Research*, Vol. 70, pp. 108-117.

40. Lapalme, M.È., Simard, G. and Tremblay, M. (2011), “The influence of psychological contract breach on temporary workers' commitment and behaviors: a multiple agency perspective”, *Journal of Business Psychology*, Vol. 26, pp. 311-324.

41. Lapointe, É., Vandenberghe, C. and Boudrias, J.S. (2013), “Psychological contract breach, affective commitment to organization and supervisor, and newcomer adjustment: a three-wave moderated mediation model”. *Journal of Vocational Behavior*, Vol. 83 No. 3, pp. 528-538.

42. Larwood, L., Wright, T.A., Desrochers, S. and Dahir, V. (1998), “Extending latent role and psychological contract theories to predict intent to turnover and politics in business organizations”, *Group & Organization Management*, Vol. 23 No. 2, pp. 100–123.

43. Lee, J., [Chaudhry, A.](#) and [Tekleab, A.G.](#) (2014), “An interactionist perspective on employee performance as a response to psychological contract breach”, [Personnel Review](#), Vol. 43 No. 6, pp. 861-880.
44. Lee, C., Liu, J., Rousseau, D.M., Hui, C. and Chen, Z.X. (2011). “Inducements, contributions, and fulfillment in new employee psychological contracts”, *Human Resource Management*, Vol. 50 No. 2, pp. 201-227.
45. [Lemire, L.](#) and [Rouillard, C.](#) (2005), “An empirical exploration of psychological contract violation and individual behavior”, [Journal of Managerial Psychology](#), Vol. 20 No. 2, pp. 150-163.
46. Lester, S. W. and Kickul, J. (2001), “Psychological contracts in the 21st century: what employees value most and how well organizations are responding to these expectations”, *Human Resource Planning*, Vol. 24 No. 1, pp. 10-21.
47. Lester, S. W., Turnley, W. H., Bloodgood, J. M. and Bolino, M. C. (2002), “Not seeing eye to eye: differences in supervisor and subordinate perceptions of and attributions for psychological contract breach”, *Journal of Organizational Behaviour*, Vol. 23 No. 1, 39-56.
48. Li, J., Wong, I. A. and Kim, W. G. (2016), “Effects of psychological contract breach on attitudes and performance: the moderating role of competitive climate”, [International Journal of Hospitality Management](#), Vol. 55, 1-10.
49. Lo, S. and Aryee, S. (2003), “Psychological contract breach in a Chinese context: an integrative approach”, *Journal of Management Studies*, Vol. 40 No. 4, pp. 1005-1020.
50. Millard, L.J. and Brewerton, P.M. (1999), “Contractors and their psychological contracts”, *British Journal of Management*, Vol. 10 No. 3, pp. 253-274.

51. Orvis, K.A., Dudley, N.M. and Cortina, J.M. (2008), "Conscientiousness and reactions to psychological contract breach: a longitudinal field study", *Journal of Applied Psychology*, Vol. 93 No. 5, pp. 1183-1193.
52. Paille, P. and Dufour, M.E. (2013), "Employee responses to psychological contract breach and violation: intentions to leave the job, employer or profession", *Journal of Applied Business Research*, Vol. 29 No. 1, pp. 205-216.
53. Piccoli, B., De Witte, H. and Reisel, W.D. (2017), "Job insecurity and discretionary behaviors: social exchange perspective versus group value model", *Scandinavian Journal of Psychology*, Vol. 58 No. 1, pp. 69-79.
54. Quratulain, S., Khan, A.K., Crawshaw, J.R., Arain, G.A. and Hameed, I. (2018), "A study of employee affective organizational commitment and retention in Pakistan: the roles of psychological contract breach and norms of reciprocity", *The International Journal of Human Resource Management*, Vol. 29 No.17, pp. 2552-2579.
55. Raja, U., Johns, G. and Ntalianis, F. (2004), "The impact of personality on psychological contracts", *The Academy of Management Journal*, Vol. 47 No. 3, pp. 350-367.
56. Restubog, S.L.D., Bordia, P. and Tang, R.L. (2007), "Behavioural outcomes of psychological contract breach in a non-western culture: the moderating role of equity sensitivity", *British Journal of Management*, Vol. 18 No. 4, pp. 376-386.
57. Restubog, S.L., Bordia, P. and Tang, R.L. (2006), "Effects of psychological contract breach on performance of IT employees: the mediating role of affective commitment", *Journal of Occupational and Organizational Psychology*, Vol. 79 No. 6, pp. 299-306.
58. Restubog, S.L.D., Bordia, P., Tang, R.L. and Krebs, S.A. (2010), "Investigating the moderating effects of leader-member exchange in the psychological contract

breach–employee performance relationship: a test of two competing perspectives”, *British Journal of Management*, Vol. 21 No. 2, pp. 422-437.

59. Restubog, S.L.D., Hornsey, M.J., Bordia, P. and Esposito, S.R. (2008), “Effects of psychological contract breach on organizational citizenship behaviour: insights from the group value model”, *Journal of Management Studies*, Vol. 45 No. 8, pp. 1377-1400.

60. Rigotti, T. (2009), “Enough is enough? threshold models for the relationship between psychological contract breach and job-related attitudes”, [*European Journal of Work and Organizational Psychology*](#), Vol. 18 No. 4, pp. 442-463.

61. Robinson, S. (1996), “Trust and breach of the psychological contract”, *Administrative Science Quarterly*, Vol. 41 No. 4, pp. 574-599.

62. Robinson, S.L. and Morrison, E.W. (2000), “The development of psychological contract breach and violation: a longitudinal study”, *Journal of Organizational Behaviour*, Vol. 21 No. 5, pp. 525-546.

63. Robinson, S.L. and Rousseau, D.M. (1994), “Violating the psychological contract: not the exception but the norm”, *Journal of Organizational Behaviour*, Vol. 15 No. 3, pp. 245-259.

64. Rodwell, J. and Ellershaw, J. (2016), “Fulfill promises and avoid breaches to retain satisfied, committed nurses”, *Journal of Nursing Scholarship*, Vol. 48 No. 4, pp. 406-413.

65. Rosen, C.C., Chang, C.H., Johnson, R.E. and Levy, P.E. (2009), “Perceptions of the organizational context and psychological contract breach: assessing competing perspectives”, *Organizational Behavior and Human Decision Processes*, Vol. 108 No. 2, pp. 202-217.

66. Salin, D. and Notelaers, G. (2017), “The effect of exposure to bullying on turnover intentions: the role of perceived psychological contract violation and benevolent behavior”, *Work & Stress*, Vol. 31 No. 4, pp. 355-374.
67. Schalk, R., Freese, C. and Van den Bosch, J. (1995), “Het psychologisch contract van part-timers en full-timers, Een onderzoek naar de verwachtingen van werknemers over wederzijdse verplichtingen tussen organisatie en werknemer in de arbeidssituatie”, *Gedrag en Organisatie*, Vol. 8 No. 5, pp. 307-317.
68. Shahnawaz, M.G. and Goswami, K. (2011), “Effect of psychological contract violation on organizational commitment, trust and turnover intention in private and public sector Indian organizations”, *Vision*, Vol. 15 No. 3, pp. 209–217.
69. Shih, C. and Chuang, C. (2012), “Individual differences, psychological contract breach, and organizational citizenship behavior: a moderated mediation study”, *Asia Pacific Journal of Management*, Vol. 30 No. 1, pp. 191-210.
70. Si, S., Wei, F. and Li, Y. (2008), “The effect of organizational psychological contract violation on managers' exit, voice, loyalty and neglect in the Chinese context”, *International Journal of Human Resource Management*, Vol. 19, pp. 932-944.
71. Steve, C.S and Chen, S. (2007), “Perceived psychological contract fulfillment and job attitudes among repatriates”, [*International Journal of Manpower*](#), Vol. 28 No. 6, pp. 474-488.
72. Stoner, J., Gallagher, V. and Stoner, C. (2011), “The interactive effects of emotional family support and perceived supervisor loyalty on the psychological contract breach — turnover relationship”, *Journal of Managerial Issues*, Vol. 23 No. 2, pp. 124-143.
73. Stoner, J.S. and Gallagher, V.C. (2010), “Who cares? the role of job involvement in psychological contract violation”, *Journal of Applied Social Psychology*, Vol. 40 No. 6, pp. 1490-1514.

74. Sturges, J., Conway, N., Guest, D. and Liefoghe, A. (2005), "Managing the career deal: the psychological contract as a framework for understanding career management, organizational commitment and work behavior", *Journal of Organizational Behavior*, Vol. 26 No. 7, pp. 821-838.
75. [Suazo, M.](#) (2009), "The mediating role of psychological contract violation on the relations between psychological contract breach and work-related attitudes and behaviors", *Journal of Managerial Psychology*, Vol. 24 No. 2, pp. 136-160.
76. Suazo, M., Turnley, W. and Mai, R. (2005), "The role of perceived violation in determining employees' reactions to psychological contract breach", *Journal of Leadership & Organizational Studies*, doi: 10.1177/107179190501200104.
77. Sutton, G. and Griffin, M.A. (2004), "Integrating expectations, experiences, and psychological contract violations: a longitudinal study of new professionals", *Journal of Occupational and Organizational Psychology*, Vol. 77 No. 4, pp. 493-514.
78. Takase, M., Teraoka, S. and Yabase, K. (2016), "Retaining the nursing workforce: factors contributing to the reduction of nurses' turnover intention in Japan", *Journal of Nursing Management*, Vol. 24 No. 1, pp. 21-29.
79. Tekleab, A.G., Orvis, K.A. and Taylor, M.S. (2013), "Deleterious consequences of change in newcomers' employer-based psychological contract obligations", *Journal of Business and Psychology*, Vol. 28 No. 3, pp. 361- 374.
80. Tekleab, A.G. and Taylor, M.S. (2003), "Aren't there two parties in an employment relationship? antecedents and consequences of organization–employee agreement on contract obligations and violations", *Journal of Organizational Behaviour*, Vol. 24 No. 5, pp. 585-608.
81. Tekleab, A.G., Takeuchi, R. and Taylor, M.S. (2005), "[Extending the chain of relationships among organizational justice, social exchange, and employee reactions: the role of contract violations](#)", *Academy of Management Journal*, Vol. 48, No. 1, doi: <https://doi.org/10.5465/amj.2005.15993162>.

82. Turnley, W.H., Bolino, M.C., Lester, S.W. and Bloodgood, J.M. (2003), “The impact of psychological contract fulfillment on the performance of in-role and organizational citizenship behaviors”, *Journal of Management*, Vol. 29 No. 2, pp. 187–206.
83. Turnley, W.H. and Feldman, D.C. (1999), “The impact of psychological contract violations on exit, voice, loyalty, and neglect”, *Human Relations*, Vol. 52 No. 7, pp. 895-922.
84. Turnley, W.H. and Feldman, D.C. (2000), “Re-examining the effects of psychological contract violations: unmet expectations and job dissatisfaction as mediators”, *Journal of Organizational Behaviour*, Vol. 21 No. 1, pp. 25-42.
85. Uen, J., Chien, M.S. and Yen, Y.F. (2009), “The mediating effects of psychological contracts on the relationship between human resource systems and role behaviors: a multilevel analysis”, *Journal of Business Psychology*, Vol. 24 No. 2, pp. 215-223.
86. [Van den Heuvel, S.](#), [Freese, C.](#), [Schalk, R.](#) and [Van Assen, M.](#) (2017), “How change information influences attitudes toward change and turnover intention”, *Leadership & Organization Development Journal*, Vol. 38 No. 3, pp. 398-418.
87. Van der Vaart, L., Linde, B., De Beer, L. and Cockeran, M. (2015), “Employee well being, intention to leave and perceived employability: a psychological contract approach”, *South African Journal of Economic and Management Sciences*, Vol. 18 No. 1, pp. 746-756.
88. Vantilborgh, T. (2015), “Volunteers' reactions to psychological contract fulfillment in terms of exit, voice, loyalty, and neglect behavior”, *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, Vol. 26 No. 2, pp. 604-628.

89. Wu, C.M. and Chen, T.J. (2015), "Psychological contract fulfillment in the hotel workplace: empowering leadership, knowledge exchange, and service performance", *International Journal of Hospitality Management*, doi:10.1016/j.ijhm.2015.04.008

90. Zagenczyk, T.J., Cruz, K.S., Cheung, J.H., Scott, K.L., Kiewitz, C. and Galloway, B. (2015), "The moderating effect of power distance on employee responses to psychological contract breach", *European Journal of Work and Organizational Psychology*, Vol. 24 No. 6, pp. 853-865.

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

Country	# of studies
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