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**University of Bath**

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**MODERATING EFFECTS OF NATIONAL CULTURE ON THE PSYCHOLOGICAL  
CONTRACT BREACH AND OUTCOME RELATIONSHIP: A META-ANALYSIS**

**A. Thushel Jayaweera**

School of Management, University of Bath, United Kingdom

**P. Matthijs Bal**

Lincoln International Business School, University of Lincoln, United Kingdom

**Katharina Chudzikowski**

School of Management, University of Bath, United Kingdom

**Simon B. de Jong**

School of Business and Economics, Maastricht University, The Netherlands

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**Purpose**

This paper contains a meta-analysis of the psychological contract literature published in the last two decades. The aim was to investigate the moderating role of national culture in the individual-level relationships between psychological contract breach (PCB) and two important work outcomes, namely job performance (in-role and organizational citizenship behaviors) and turnover (actual and intended).

**Design/methodology/approach**

After an extensive literature search, 134 studies were found which matched our aim. We then incorporated national cultural scores based on the GLOBE study to include country-level scores to identify how the PCB relationships with these four outcomes vary across cultures.

**Findings**

The findings indicate that national cultural practices moderated the associations between PCB and the four outcomes, yet, no significant moderations for uncertainty avoidance practices.

**Originality/value**

While existing research has examined the impact of the breach on work outcomes such as job performance and turnover, there are few empirical studies that examine how national cultural practices influence the relationships between psychological contract breach and job performance and turnover. The authors address this need by investigating and creating a deeper insight into how cultural practices such as institutional collectivism, performance-orientation, power-distance, future-orientation, and gender egalitarianism moderate the relationships between PCB and job performance and turnover.

**Keywords**

Psychological contract breach, GLOBE cultural practices, job performance, turnover, meta-analysis

**Article classification:** Research paper

## Introduction

Managing employee behavior through effective employment relations across cultures is a fundamental challenge for Human Resource Management (Cruz *et al.*, 2018; Lucia-Casademunt *et al.*, 2018). Effective employee relations can influence work outcomes such as job performance and turnover (Bal *et al.*, 2008). One relevant concept to understand employee relations is the psychological contract (Rousseau, 1989). A psychological contract refers to the mutual unwritten obligations between an employee and his/her organization. How employee psychological contracts impact employee behavior can vary across cultures (Thomas *et al.*, 2003). This is because perceptions develop in the minds of employees and such perceptions are prone to develop in line with cultural norms and expectations.

Psychological contracts become salient when they are breached (Rousseau, 1989). Psychological contract breach (PCB) refers to employees' perceptions of their organization's failure to fulfill their obligations towards them (Rousseau, 1989). Previous meta-analyses found that there is an association between psychological contract breach and work outcomes such as job performance and turnover (Zhao *et al.*, 2007). Researchers also found that there are various moderators influencing these PCB and outcome relationships (Bal *et al.*, 2008; Zhao *et al.*, 2007). Although there exist some empirical evidence suggesting a possible influence of national culture on PCB (Haybatatollahi and Gyekye, 2015; Kickul *et al.*, 2004; Rousseau and Schalk, 2000), studies exploring the moderating role of national culture on PCB and work outcomes relationship have been rare (Taras *et al.*, 2011), and clear insights are therefore lacking at the moment.

National culture might impact the relationship between psychological contract perceptions and employee performance and turnover. In this paper, we focus on how national culture might alter breach-related work outcomes such as job performance and turnover. Specifically, we will investigate how national cultural practices shape key employee work

outcomes such as job performance (Jaramillo *et al.*, 2005; Kraimer *et al.*, 2001) and turnover (Luu *et al.*, 2010; Peretz and Fried, 2012) following breach. Cultural practices refer to socially acceptable and routinized individual behaviors (Frese, 2015). In doing so, we build on existing meta-analyses that have examined relationships of PCB with job performance and turnover (Bal *et al.*, 2008; Jayaweera *et al.*, 2020; Zhao *et al.*, 2017). In addition, to understand national cultural practices across a wide variety of countries, we use the GLOBE framework. As it is important to understand how cultural effects inform managerial practices (Nadeem and Sully de Luque, 2017), this article aims to examine the moderating role of national cultural practices based on the GLOBE dimensions (i.e., institutional collectivism, performance-orientation, power distance, future society orientation, uncertainty avoidance, and gender egalitarianism) on the relationships between PCB and job performance and turnover.

We will argue that national cultural practices can shape individual work outcomes (e.g., Autio *et al.*, 2013; Fischer and Mansell, 2009). We focus on two important work outcomes, namely job performance and employee turnover as they are key outcomes that have direct organizational consequences such as organizational performance (Park and Shaw, 2013). Evidence suggests that individual work outcomes are shaped by national culture (Vora *et al.*, 2018). We argue that developing a greater understanding of the impact of national cultural practices on PCB and outcome relationships will provide new insights into PCB research. These insights could further expand our understanding of how national culture might influence PCB-related outcomes at the individual level, an area of research that has not yet received a lot of scholarly attention (Rousseau and Schalk, 2000). In this study, we will assess if national cultural practices moderate the associations between PCB and (in-role and organizational citizenship behaviors) job performance and (actual and intended) turnover. In-role performance refers to the effectiveness of an individual employee to perform formal job tasks and organizational citizenship behaviors (i.e., contextual performance) refer to the ability of an

individual to perform tasks beyond the formal requirements (see Borman and Motowidlo, 1997). In terms of employee turnover, we focus on turnover intention (refers to as an individual's intention to leave the organization) and actual turnover (refers to an individual leaving the organization).

### **Theoretical Background**

Broadly speaking, national culture is a higher-order phenomenon that can impact individual behavior (Van de Vijver *et al.*, 2008; Van Hemert *et al.*, 2008; Varela *et al.*, 2010). It is therefore that scholars have advocated for the importance of using a multilevel approach (Alutto, 2002) to understanding the impact of national culture on work outcomes at the individual level (Jaramillo *et al.*, 2005; Kraimer *et al.*, 2001). Empirical research in the PC literature has focused on the impact on national culture at the individual level (Newman and Sheikh, 2012). Research in this area has yet to examine the impact of national culture at the society level on psychological contract breach and work outcome relationships. We contribute to this moving literature by going beyond self-reported national cultural scores by shifting our focus to society-level national culture. We aim to develop a multilevel model to explain how national cultural practices moderate job performance and turnover following PCB.

Although there are various national cultural frameworks that exist in the literature, we focus on GLOBE's cultural framework (House *et al.*, 2004). The GLOBE offers a complete picture of the national culture (Nadeem and Sully de Luque, 2017), and a growing number of scholars have used the GLOBE dimensions because of its methodological rigor and theoretical advancement (Javidan *et al.*, 2006). To understand the impact of national culture on work outcomes, GLOBE asked respondents to indicate their views regarding national culture (i.e., to what extent people in their society follow certain values and practices) to provide a collective-level construct (Fischer and Mansell, 2009). Other frameworks, such as Hofstede (1980, 1997,

2001), asked the respondents to provide their personal views regarding national culture (i.e., what extent do you follow certain values) to establish an aggregate score of national culture leading to ecological fallacy (Oyserman *et al.*, 2002). How GLOBE constructed and measured the distal culture or national culture makes it the best available framework for understanding national cultural practices (Fischer and Mansell, 2009; Javidan *et al.*, 2006) and hence, we follow this framework in our study.

We develop a multilevel framework to understand the impact of national culture on the relationships between breach and work outcomes by engaging in a two-step procedure. At the first stage, we conducted a meta-analysis at the individual level (see, for example, Jayaweera *et al.*, 2020). In the second stage, we tested the moderating role of the country's cultural practices, applying the GLOBE framework (House *et al.*, 2004). More specifically, linking to theoretical reasoning within PCB research, we use six of dimensions of GLOBE (House *et al.*, 2004) – namely: institutional collectivism practices, performance orientation practices, power distance practices, future orientation practices, uncertainty avoidance practices, gender egalitarianism practices – to investigate the effects of the national cultural practices on PCB-related responses.

This study, therefore, contributes to the PCB literature by showing the differential relationships between specific national cultural practices and specific outcomes. Specifically, this study contributes to our understanding of how national cultural practices such as collectivism practices, performance orientation practices, power-distance practices, future society practices, uncertainty avoidance practices, and gender egalitarianism practices influence breach-related outcomes such as job performance and turnover. Moreover, our study contributes to understanding the practical relevance of culturally contextualizing PCB for managing employments relations across the world.

## Theoretical background and hypothesis development

### *Psychological contract breach and work outcomes*

Prior literature often explains the relationships between PCB and work outcomes based on Social Exchange Theory (SET; Blau, 1964). According to SET, people engage in exchange relationships to receive inducements for what they provide to another party (Blau, 1964). In case of a breach (i.e., when the employer does not fulfill its obligations in the perceptions of an employee), employees are likely to adapt their behaviors to re-establish a balance in their relationship with the employer.

In a first step, we provide empirical generalizations regarding the link between PCB and job outcomes specifically to gather contemporary evidence regarding the relationship of breach and job performance and turnover. A previous meta-analysis showed a negative relationship between PCB and job performance and a positive relationship between PCB and employee turnover (Zhao *et al.*, 2007). We will build on these results and investigate the relationships between PCB and job performance and turnover by extending the previous meta-analysis (Zhao *et al.*, 2007). Based on SET, we anticipate PCB to be negatively linked to in-role performance and organizational citizenship behavior (OCB), while being positively linked to turnover intention and actual turnover (Bal *et al.*, 2008; Conway and Briner, 2005; Zhao *et al.*, 2007). 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**).



*National culture, psychological contract breach, and work outcomes*

Following previous research, we define national culture as the “shared motives, values, beliefs, identities, and interpretations or meanings of significant events that result from common experiences of members of collectives and are transmitted across age generations” (House *et al.*, 2004, p. 57). National culture includes collective experiences that are conceptualized as the collective programming of mentality found at a national level (Czarnecka *et al.*, 2018; House *et al.*, 2004) that are geographically situated (Parboteeah *et al.*, 2005; Van Hemert *et al.*, 2008). Yet, the national culture that is geographically situated resides in the mind, as nothing can reside outside of the mind (Harvey, 2013; Hodgson, 2011). This view is also supported by social cognitive theory (Bandura, 1998, 2002) which suggests that a blend of proximal and distal culture influence an individual’s behavior. Empirical evidence based on social cognitive theory has shown that the macro-level national culture shapes individual perceptions and behavior (Stajkovic and Luthans, 1997).

Empirical evidence suggests that psychological contract perceptions differ across societies (Rousseau and Schalk, 2000) and cultures (Sanchez-Burks *et al.* 2000; Westwood *et al.* 2001). In general, societal culture plays a role in shaping exchange relations (Levinson, 1965), and there is ample evidence that psychological contracts vary across cultures (Rousseau and Schalk, 2000). For instance, in PC literature, empirical studies have suggested that national culture impact PC perceptions (Thomas *et al.*, 2003; 2010) and that national culture moderates the breach related outcomes such as turnover (Arshad, 2016). Authors have suggested that further research should consider the moderating effects of national culture in influencing breach-related outcomes (Thomas *et al.*, 2016). Mechanisms through which society culture impacts psychological contract breach perceptions at the individual level have been empirically explored to some extent in the PC literature. For example, Thomas and colleagues (2003) suggested that national culture can influence an individual’s psychological contract

formation, and responses to perceived violation through two mechanisms, namely via cognitive and motivational mechanisms. Cognitive mechanisms refer to “those that operate through neuropsychological information processing channel” (Thomas *et al.*, 2003, p. 456) and represent the role played by an individual’s mental representation in understanding and organizing information related to people and events happening in society. Individuals in different cultures tend to develop different sets of schemas, which help them organize information in their respective environments (Fiske and Taylor, 1984). Thomas and colleagues (2003) argued that people pay attention to different stimuli and provide different meanings to them based on schemas when dealing with PCB.

Motivational mechanisms refer to mechanisms which “operate through preferable end states or modes of behavior” (Thomas *et al.*, 2003, p. 456). From a motivational perspective, individuals tend to formulate different motives when they form social exchange relations in line with their cultural values. Employee motives, desires, and behaviors are shaped by culturally desirable self-concepts (Fiske and Taylor, 1984). Thus, individuals are motivated to fulfill their desires in line with their culture and this will lead to various behavioral outcomes. Thomas and colleagues (2003; 2010) provide two insightful perspectives - the cognitive and motivational one - that enhance our understanding of how culture impacts psychological contract breach. In addition to this, there is a different stream of the literature that proposes a third perspective, namely emotional mechanisms (Markus and Kitayama, 1991; Wilson and Gilbert, 2003). Emotions occur along with cognitive and motivational responses to an event (Scherer, 2009), and refer to “an emergent, dynamic process based on individual’s subjective appraisal of significant events” (Scherer, 2009; p.1). Culture shapes how an individual experiences emotion or expresses them (Lim, 2016; Turner and Stets, 2005). Therefore, we propose that the ways how individual experience emotion and display emotions are shaped by

cultural concerns and might affect PCB's relationship with key work behaviors, alongside the above mentioned cognitive and motivational mechanisms.

Prior research has used multi-level theorizing to show that national culture can influence individual behavior (Fisher, 2009; Van de Vijver *et al.*, 2008). More specifically, researchers have used national culture framework, such as GLOBE, as the key determinant of work practices (Ali and Brooks, 2008; Parboteeah *et al.*, 2005) and have commonly argued that there is a direct path linking national culture with individual-level behavior (Fischer *et al.*, 2005; Stamkou *et al.*, 2019). When linking national culture as a society level concept to individual work outcomes, previous scholars have established the view that the effects of national culture on an individual's work-related activity is shaped by societal norms, which people in a society share (Hofstede, 2001; Mu *et al.*, 2015). Besides, society norms associated with national cultures can play a key role in shaping psychological contract perceptions (Rousseau and Schalk, 2000). Social norms refer to the informal, rules that people in society find acceptable and appropriate, and obligatory to follow (Cislaghi and Heise, 2018). Moreover, national culture impacts social structures, and social roles which guide cultural practices at work (Chiu *et al.*, 2010; Cislaghi and Heise, 2018; Kinias *et al.*, 2014).

#### *The GLOBE framework of national culture*

We draw on the GLOBE cultural framework (House *et al.*, 2004) to understand the impact of national culture on PCB responses. This is because the GLOBE offers theoretically, sound, empirically acceptable, cross-culturally developed, and comprehensive constructs and scales that are suitable for cross-cultural studies (Javidan *et al.*, 2006). The GLOBE's constructs are suitable for this study because the properties of the construct are manifested at an aggregate level of analysis (i.e., society level) (see Javidan *et al.*, 2006). The GLOBE considers two aspects: values (society values) and practices (society practices). Society practices measure

perceived practices *as it is* (House *et al.*, 2004). Society values are respondents' beliefs about how things *should* be organized in their society (House *et al.*, 2004). Previous scholars have often looked at values alone assuming that understanding the values of culture is merely enough to understand or predict practices or what really happens in society (Javidan *et al.*, 2006). The GLOBE's decision to incorporate a practice dimension allows us to understand how societal practices impact behaviors at work. Substantial evidence has reported that the practice dimensions of the GLOBE have greater validity than its value dimensions in predicting behaviors (Fischer and Schwartz, 2011). Practices also have their meaning firmly at the societal level, whilst values can also contain an individual-level component (Chao *et al.*, 2011; Cullen *et al.*, 2004). Furthermore, evidence suggests that cultural practices are more likely than values to impact work outcomes (Parboteeah *et al.*, 2005; Smith, 2006). Therefore, GLOBE's practice dimensions are appropriate to understand the moderating impact of culture on an individual's work outcomes following PCB. Below, we will argue that six GLOBE dimensions (i.e., institutional collectivism, performance-orientation, power distance, future society orientation, uncertainty avoidance, and gender egalitarianism) are relevant in relation to PCB.

### **Moderating effects of cultural practices**

#### *Institutional collectivism practices, PCB, and work behaviors*

Institutional collectivism practices refer to “the degree to which organizational and societal institutional practices encourage and reward collective distribution of resources and collective action” (House *et al.*, 2004, p.30). Societies high in institutional collectivism encourage and reward collective action among people who live in such societies. In contrast, people who live in individualist societies encourage and reward personal needs, individual rights even at the expense of group loyalty (Peretz *et al.*, 2015). Evidence suggests that employees who live in

collectivist societies tend to have stronger psychological contracts with their employers and are less willing to underperform or leave despite personal dissatisfaction (Maertz, 2004). In contrast, employees who live in individualist societies tend to have weaker psychological contracts with their employers (Cruz *et al.*, 2018; Thomas *et al.*, 2003).

Studies have also shown that collectivism impacts job performance (Varela *et al.*, 2010) and turnover (Clinton and Guest, 2013). Similarly, empirical evidence has suggested that higher performance and lower turnover is found in countries where social norms oppose going against managerial practices (Chen *et al.*, 2007). In general, collectivist societies tend to discourage an employee from deviating from their respective group of reference including managers and colleagues (Fischer and Mansell, 2009) and therefore, they are more likely to be tolerant to breach. Social norms and roles in collectivist societies encourage managers and employees to position themselves as belonging to groups and organizations they work for (Cohen and Hill, 2007; Thomas *et al.*, 2003; 2010). These distinctions suggest that individuals in collectivistic societies are more likely to emphasize group commonality (Cohen *et al.*, 2016). As a result, they are likely to react less strongly to breach by underperforming or leaving their jobs in comparison to the individuals who live in individualist societies. Thus, in line with our theoretical positioning, and previous studies (e.g. Thomas *et al.*, 2003), we expect that individuals in collectivistic cultures will be more tolerant of PCB and will respond more favorably by being more tolerant to breach than those who live in less collectivist cultures. We therefore hypothesize:

Hypothesis 3: Institutional collectivism practices moderate the relationship between PCB and work behaviors. More specifically, relationships will be less negative for in-role performance **(H3a)** and organizational citizenship behavior **(H3b)**, and less positive for turnover intentions **(H3c)** and actual turnover **(H3d)**, the higher the levels of institutional collectivism practices.

*Performance orientation practices, PCB, and work behaviors*

In the GLOBE framework, performance-orientation practices refer to the degree to which a society encourages excellent performance and innovation practices (House *et al.*, 2004). Performance oriented societies appreciate individuals who produce results (House *et al.*, 2004; Javidan *et al.*, 2006; Thomas *et al.*, 2003). Societies high in performance orientation are likely to emphasize the importance of training and feedback to improve performance (Messner and Rosenfeld, 2001; Rabl *et al.*, 2014). Similarly, people who live in high performance-oriented societies care about achieving professional success (Cullen *et al.*, 2004; Newbury & Yakova, 2006). In contrast, employees who live in low performance-oriented societies tend to care less about the competition (Rabl *et al.*, 2014).

Given that recognition is given for high performance (Daumiller and Janke, 2019), employees might still be encouraged to perform better following a breach in high-performance societies (Rabl *et al.*, 2014). In contrast, in low-performance-oriented societies, limited recognition is given of employee title, salary, and achievement (Salamin and Hom, 2005). These practices might hinder employee performance (Nanda and Sorensen, 2010). In addition, in high performance orientation societies, employees tend to strive to find better jobs associate with higher turnover (Salamin and Hom, 2005). In contrast, low performance orientation societies emphasize harmony over performance (Thomas *et al.*, 2003) and are likely not to challenge employees for underperforming or quitting (Rahman *et al.*, 2017). Performance orientation practices also have a direct link with work outcomes such as performance (Jackofsky, 1987) and turnover (Sturman *et al.*, 2012).

Therefore, based on social cognitive theory (Bandura, 1998; Stajkovic and Luthans, 1997) and above reasoning, we argue that individuals who live in low performance societies are less likely to improve performance following breach. On the contrary, it follows that in the event of breach, employees who live high performance societies tend to set ambitious goals

and still perform well in the event of breach and are less likely to leave their jobs. Thus, we expect that people who are exposed to high-performance orientation practices will respond less negatively to PCB than those who are exposed to low-performance orientation cultural practices. We therefore hypothesize:

Hypothesis 4: Performance orientation practices moderate the relationship between PCB and work behaviors. More specifically, relationships will be less negative for in-role performance **(H4a)** and organizational citizenship behavior **(H4b)**, and less positive for turnover intention **(H4c)** and actual turnover **(H4d)**, the higher the levels of performance orientation practices.

*Power distance practices, PCB, and work behaviors*

In the GLOBE framework, power distance practices refer to “the extent to which the community accepts and endorses authority, power differences, and status privileges” (House *et al.*, 2004). Accordingly, in societies that have high power distance practices, the social norms of the society are that the followers are expected to obey the commands of their leaders without questioning any of their actions (Daniels and Greguras, 2014; Ghosh, 2011; House *et al.*, 2004). Similarly, people who live-in high-power distance societies experience a vertical subordinate–supervisor relationship at work (Carl *et al.*, 2004). In contrast, people who live in low-power distance societies expect that people will display less obedience to authority in the workplace (Praboteeah *et al.*, 2005; Rao and Pearce, 2016).

Power distance practices can have an impact on work behaviors (Heales *et al.*, 2004; Khatri, 2009). Research in high power distance societies has shown that senior employees possess more autonomy over decision making (Earley and Erez, 1997; Sturman *et al.*, 2012). Empirical evidence suggests that people who live in societies with high power distance are more tolerant to poor employment relations and are not expected to negotiate at work (Herriot

and Stickland, 1997) in comparison to those who live in low power distance societies (Haybatatollahi and Gyekye, 2015; Sturman *et al.*, 2012). Moreover, research has shown that those who value power and authority are likely to put more efforts in maintaining better relationships with the leaders (Ghosh, 2011) and prefer to follow leaders passively (Khatri, 2009) and this might lead to employees putting more efforts into increasing job performance (Gul *et al.*, 2018; Rafiei and Pourreza, 2013) and reducing voluntary turnover. Besides, management practices in high power distance societies would restrict underperformance and voluntary turnover (Gul *et al.*, 2018; Rafiei and Pourreza, 2013).

A few studies have indicated that power distance is associated with PCB (Thomas *et al.*, 2003) and breach responses (Vantilborgh *et al.*, 2013; Zagenczyk *et al.*, 2015). In higher power distance societies, employees are more likely to accept managerial decisions and respect authority (Daniels and Greguras, 2014; Ghosh, 2011) even when they experience negative events at work. In contrast, employees in low-power distance societies are more likely to react strongly to breach as they are less likely to respect authority (Parboteeah *et al.*, 2005). Typically, stronger reactions to breach would indicate lowering performance and increasing voluntary turnover. Thus, we hypothesize that those who live in high-power distance societies are more likely to display higher job performance and lower turnover in responding to breach when compared to low power distance countries. We hypothesize:

Hypothesis 5: Power distance practices moderate the relationship between PCB and in-role performance (**H5a**), organizational citizenship behavior (**H5b**), turnover intention (**H5c**) and actual turnover (**H5d**). Relations will be less negative (in-role performance, organizational citizenship behavior), and less positive (turnover intention, turnover), the higher the levels of power distance practices.



*Future orientation practices, PCB, and work behaviors*

Future orientation refers to the degree to which society collectively encourages and rewards future-oriented behaviors such as planning and delaying gratification (House *et al.*, 2004). In societies high in future orientation, individuals tend to plan for the future (Trommsdorff, 1983) and give priority to long-term success (Grove, 2005). In future-oriented societies, individuals prefer longer-term gain rather than shorter-term gain (Orpen, 1995, Palthe, 2014). In contrast, individuals who live in low future-oriented societies are less willing to invest in long term prospects and are more interested in the present (Aspinwall, 2005; Aspinwall and Leaf, 2002). Social norms of future-oriented culture direct individuals towards achieving future goals (Kucharska and Bedford, 2019).

People who live in high future-oriented societies are likely to feel more job insecurity at work following negative work experiences (De Hauw and De Vos, 2010; Peretz *et al.*, 2017). Lack of job security can significantly reduce job performance or increase turnover (Avital, 2000; Pettigrew, 1997). Future-oriented individuals are more likely to be make conscious decisions favorable to their career growths (Qian *et al.*, 2015). Individual career goals shape how an individual responds to a breach (Aspinwall, 2005; Sadowski and Schragner, 2016). PCB is a future risk, as it means that past promises were not kept and that future promises might thus also not be kept, motivating individuals to pursue other career goals and change their existing jobs (Schragner and Sadowski, 2016) and reduce job performance (Lu and Lin, 2014). Similarly, PCB can be seen as an obstacle for long-term career growth, promotion, and success (De Hauw and De Vos, 2010). Consequently, individuals who live in future-oriented societies are more likely than individuals who live in societies embedded in the present, to pursue actions to restore balance in breach in the interest of their own career growth and development. Restoring balance in replying to PCB indicates lowering performance and increasing turnover (Zhao *et al.*, 2007). Thus, we expect that those who live in cultures that

encourage them to plan for the future will have lower levels of job performance and higher levels of turnover following PCB, in comparison to those individuals who live in cultures that encourage less to plan for the future. Our sixth set of hypotheses reads:

Hypothesis 6: Future orientation practices moderate the relationship between PCB and key work behaviors. More specifically, relationships will be more negative for in-role performance (**H6a**) and organizational citizenship behavior (**H6b**), and more positive for turnover intention (**H6c**) and actual turnover (**H6d**), the higher the levels of future orientation practices.

#### *Uncertainty avoidance practices, PCB, and work behaviors*

Uncertainty avoidance refers to the degree to which ambiguous and uncertain situations are threatening to individuals, to which predicted ordered are preferred (House *et al.*, 2004). People who live in societies with high uncertainty avoidance prefer to take fewer risks (Parboteeah *et al.*, 2005), trust in others (Hwang, 2009), and are likely to feel more uncomfortable in unknown or surprising situations (Ozorio *et al.*, 2010) in comparison to those who live in low uncertainty avoidance societies (House *et al.*, 2004).

Uncertainty avoidance societies often adopt rules and norms to manage uncertain situations (Hwang, 2009). Individuals who live in high-uncertainty-avoidant societies tend to avoid considering information that would seem ambiguous in favor of verifiable data such as seniority (Fischer, 2009). Research evidence suggests that people who live in societies with high uncertainty avoidance tend to have social norms that encourage people to experience more anxiousness when faced with unexpected situations (Krasnova *et al.*, 2012). Individuals who want to avoid risks such as potential loss of existing employment (Sturman *et al.*, 2012), will remain more tolerant to negative work events (Kalleberg, 2009; Rispens and Demerouti, 2016).

Given that performance and turnover decisions involve some degree of uncertainty related to things involved such as for pay (Bauer *et al.*, 2007), promotions, and relationships with co-workers and supervisors (Allen *et al.*, 2005), and advancement opportunities, employees who live in high-uncertainty-avoidant societies would see performance issues and voluntary turnover as less desirable (Maertz, 2004). Individuals who live in high-uncertainty avoidance societies are more likely, relative to individuals who live in low-uncertainty avoidance societies do not like situations that avoid ambiguity, and therefore are less likely to underperform or leave their organizations following breach as both underperforming and leaving the job to indicate a certain degree of uncertainty (Peretz *et al.*, 2017). Research has confirmed that in societies which are high uncertainty avoidance, decreasing performance (Sturman *et al.*, 2012) as resistance to management and voluntary turnover is undesirable (Maertz, 2004). Thus, we expect when a society favors consistency and orderliness, it is likely that individuals implement strategies to manage PCB and try to maintain performance and avoid turnover. We therefore hypothesize:

Hypothesis 7: Uncertainty avoidance practices moderate the relationship between PCB and work behaviors. More specifically, relationships will be more negative for in-role performance (**H7a**) and organizational citizenship behavior (**H7b**), and more positive for turnover intention (**H7c**) and actual turnover (**H7d**), the lower the levels of uncertainty avoidance practices.

#### *Gender egalitarianism practices, PCB, and work behaviors*

One of the often-neglected dimensions of GLOBE framework is gender egalitarianism, which refers to "the degree to which a collective minimizes gender inequality" (House *et al.*, 2004). Gender egalitarianism is reflected in social norms that set limits for what men and women can do (Burda *et al.*, 2007; Lyness and Judiesch, 2014) and can shape gender roles

among people (Grove, 2005; Lyness and Judiesch, 2014). Gender egalitarian societies encourage power, and appreciate the worth of other people by building participation (Rosner, 1990). Moreover, in such societies, managers encourage members to perform well by lowering competition (Betz *et al.*, 1989).

Gender-egalitarian societies might be linked to high-performance organizations (Burda *et al.*, 2013; Gupta, 2011) and increased turnover among employees (Camgoz *et al.*, 2016). Individuals who live in high gender-egalitarian societies tend to have fewer differences in the way in which they allocate roles for men and women (Emrich *et al.*, 2004). Furthermore, people who live in high gender-egalitarian societies tend to formalize relationships and take precedence over satisfaction derived from achieving job tasks. In contrast, employees from low-gender egalitarian societies believe that loyalty to their supervisors is more important than completing job obligations (Gupta, 2011). People in low gender-egalitarian society are generally loyal to their employers (Gupta, 2011) and might be more tolerant to breach. Given that breach indicates a failure to fulfil obligations indicating a state of poor formal relationship with the organization, following a breach, people in a high gender-egalitarian society might react more strongly to breach by lowering performance and increasing turnover in comparison to societies that are not gender-egalitarian. More specifically, we hypothesize:

Hypothesis 8: Gender egalitarianism practices moderate the relationship between psychological contract breach and key work behaviors. More specifically, relationships will be more negative for in-role performance (**H8a**) and organizational citizenship behavior (**H8b**), and more positive for turnover intention (**H8c**) and actual turnover (**H8d**), the higher the levels of gender egalitarianism practices.

## Methods

### *Meta-analytic search strategy and coding procedure*

We adopted meta-analysis to examine our model and we used several complementary steps to collect relevant studies. We used the following search strategy to identify studies measuring “psychological contract breach” from the studies that were conducted from the 1980s to 2019 (since the first empirical studies on PCB were published; Rousseau, 1989). We searched the key databases of Web of Science, PsycINFO, EBSCO, and Google Scholar for studies. Akin to prior meta-analyses, we also searched manually through OB and HRM journals. We also retrieved studies from the reference lists of previous meta-analyses (Bal *et al.*, 2008; Zhao *et al.*, 2007), and also searched for available Ph.D. theses. We contacted members of both the OB and HRM divisions of the Academy of Management requesting unpublished studies. As a final check, we contact the authors who published abstract papers on psychological contract breach at the Academy of Management or Society of Industrial and Organizational Psychology meetings and requested unpublished papers.

To be included a study must report psychological contract breach or fulfillment. We initially identified 2,897 studies. Second, we retained only empirical studies, and this resulted in 2,436 studies. Third, we retained only those following quantitative methods, resulting in 2,088 studies. Fourth, we retained those studies that investigated PCB or fulfillment, and this resulted in 1,791 studies. Fifth, we removed duplicates and retained 838 articles. Sixth, only studies measuring the relations between PCB and fulfillment and the relevant work outcomes (in-role performance, OCB, turnover intention, and/or actual turnover) were included, and this resulted in 205 studies. Seventh, only the studies reporting in English, French, or Dutch were included, and we retained 172 studies. Finally, only studies that reported the statistical information that was required to calculate the necessary correlations were included, and eventually, the above exclusions resulted in a final set of 134 studies based on 95 published

articles. Since the 95 published articles reported more than one variable, in total, we found 34 studies reporting in-role performance, 33 studies reporting citizenship behavior, 61 studies reporting turnover intention, and 6 studies reporting actual turnover. As proposed by Hunter and Schmidt (2004), when multiple sample data that are presented in a single paper, we treated these samples as separate studies by assuming that samples are independent in the meta-analysis.

A coding protocol was designed 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). In PC literature, many studies have used the term breach, fulfilment, and violation interchangeably; therefore, we relied on measurements used by the original authors to identify psychological contract breach to guide our coding. We followed Hunter and Schmidt (2004)'s formulas to calculate the composite correlations and reliabilities between the breach and the selected work outcomes. We computed composite scores<sup>1</sup> when studies were longitudinal studies reporting correlations over time or when studies were reporting multi-dimensions of the psychological contract.

The first and second authors coded all of the 134 studies (based on 95 independent research papers) and we calculated interrater reliability estimates. Among the authors, a 99 percent agreement on study characteristics and a 99 percent agreement on study numbers were reached. After three months, we checked all recorded information and we identifies few discrepancies (less than 1%) and solved through discussions (Geyskens *et al.*, 2006).

### *Measures*

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<sup>1</sup> There were 15 longitudinal studies in our database, and 4 studies reporting different dimensions of a breach, please refer to Annex 2.

When breach or fulfillment was measured in a study it was included and coded. Akin to the meta-analysis of Zhao and colleagues (2007), we reversed the signs of the correlations between fulfillment and job behaviors to indicate psychological contract breach. Measures of psychological contract violation were not included, as it is treated as a separate concept from the breach in the psychological contract literature (Morrison and Robinson, 1997). When multiple dimensions of breach or fulfillment were measured in a single study, a composite score was calculated using the formulas of Hunter and Schmidt (2004). Longitudinal studies typically reported findings at various time points and we, therefore, examined the correlations between the effects sizes across various time points for those studies.

In-role performance was coded when the performance outcome measure of a study reflected an employee performing activities that are directly contributing to the technical core of a job or one's in-role tasks (Borman and Motowildo, 1997). OCBs were coded as any extra-role performance that is not part of the core task description (e.g., Coyle-Shapiro, 2002). Composite correlations were calculated if one of these was measured using multi-dimensional scales. Turnover intentions were coded as intentions of employees leaving their positions and actual turnover was measured following employees leaving their positions (Schyns *et al.*, 2007). Globe cultural practices scores were measured as given in House *et al.* (2004) as the practices (not values) per country.

### *Statistical procedure*

The formulas of Hunter and Schmidt (2004) were used to test the hypotheses. We applied the Fisher Z-transformation to all correlations. We tested our hypotheses using SPSS. Moderator analysis in the meta-analysis was conducted using a Weighted Least Squares (WLS) estimation. This is because Weighted Least Squares (WLS) estimation allowed us to correct

for differences between sample sizes, as well as unreliability in the variables measured (Hunter & Schmidt, 2004).

## Results

Our first aim was to assess overall effect sizes by looking at the correlations between PCB and the four work behaviors (i.e., in role-performance, citizenship behavior, turnover intention, actual turnover). Table 1 shows the results of the main-effects meta-analysis. True-score correlations are reported, as well as those reported in the Zhao and colleagues (2007) meta-analysis for comparison purposes. Zhao and colleagues (2007) found that PCB was negatively related to in-role performance and OCB and positively to turnover intention and actual turnover. We found similar effects, as PCB significantly related to in-role performance (true score correlation  $\rho = -.22$ ), citizenship behavior ( $\rho = -.24$ ), 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 and colleague's (2007) meta-analysis, while the correlations between PCB and OCB and 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 and colleagues (2007). In sum, our findings are thus largely similar to Zhao et al. (2007), although our study includes more studies (e.g., for turnover-intentions we have almost 3 times as many studies than Zhao et al.) as well as more *recent* studies and thus updates and sharpens contemporary knowledge.

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Insert Table 1 about here

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After assessing the main effects, we investigated the moderation effects (Table 2). For moderation to be possible, there needs to be heterogeneity in the findings and the last three columns of Table 2 shows that Q-statistics are all sizeable (Hunter and Schmidt, 2004). Table 2 shows that a nation's institutional collectivism practices moderated the relationship between PCB and in-role performance ( $\beta = .37, p < .05$ ), OCB ( $\beta = .37, p < .05$ ), and turnover intention ( $\beta = -.29, p < .05$ ). Institutional collectivism practices did *not* moderate the relationship between contract breach and actual turnover ( $\beta = -.81, ns$ ), yet this moderation effect approached significance ( $p = .052$ ) and might thus be something to investigate in the future research. Given that the correlations between PCB and in-role performance and OCB are negative (see table 1), the positive beta indicates that negative correlation between PCB and in-role performance ( $\beta = .37, p < .05$ ), as well as the negative correlation between breach and citizenship behavior ( $\beta = .37, p < .05$ ), becomes smaller when their institutional collectivism practices are higher. Given that the correlation between PCB and turnover intention is positive (see table 1), the negative beta indicates that that positive correlation between breach and turnover intention ( $\beta = -.28, p < .05$ ) becomes smaller when institutional collectivism practices are higher. Overall, these findings provide substantial support for H3, by showing that institutional collectivism practices can shape the PCB to work outcome relationships.

Performance orientation practices did not moderate the relationship between PCB and in-role performance ( $\beta = .33, ns$ ), yet this effect approached significance ( $p = .058$ ) and might thus be something for future research. Performance orientation practices significantly moderated the relationship between PCB and OCB ( $\beta = .40, p < .05$ ). Given that the correlation between PCB and OCB is negative (see table 1), the positive beta indicates that the negative correlation between PCB and OCB ( $\beta = -.24, p < .05$ ) becomes smaller when high-performance orientation practices are higher. However, performance orientation practices did not moderate the relationship between contract breach and turnover intention ( $\beta = -.03, ns$ ) and actual

turnover ( $\beta = .04$ , ns). Overall, these findings provide some support for H4, by showing that performance orientation practices can shape the PCB to (extra-role) performance outcome relationships.

Power-distance practices moderated the relationship between PCB and in-role performance ( $\beta = .37$ ,  $p < .05$ ). Given that the correlation between the breach and in-role performance is negative (see table 1), the positive beta indicates (table 4) that negative correlation between the breach and in-role performance ( $\beta = .37$ ,  $p < .05$ ) becomes smaller when power-distance practices are higher. However, power-distance practices did not moderate the relation between PCB and OCB behavior ( $\beta = .27$ , ns), turnover intention ( $\beta = -.23$ , ns), and actual turnover ( $\beta = .59$ , ns). Although for turnover intentions the significance level approached significance ( $p = .069$ ) and this might thus be something or future research to investigate further. Overall, these findings provide some support for H5, by showing that power-distance practices can shape the PCB to in-role performance outcome relationship.

Future society practices moderated the relationship between PCB and in-role performance ( $\beta = -.35$ ,  $p < .05$ ), turnover intention ( $\beta = .27$ ,  $p < .05$ ), and actual turnover ( $\beta = .90$ ,  $p < .05$ ). Future society practices did *not* moderate the relationship between contract breach and citizenship behavior ( $\beta = .08$ , ns). Given that the correlation between PCB and in-role performance is negative (see table 1), the positive beta indicates that negative correlation between PCB and in-role performance ( $\beta = -.35$ ,  $p < .05$ ) becomes larger when future society practices are higher. Given that the correlations between PCB and turnover intentions and turnover are positive, the positive beta indicates that these positive relations become larger when future society practices are higher. Overall, these findings provide substantial support H6, by showing that future society practices can shape the PCB to work outcome relationships.

Uncertainty avoidance practices did *not* moderate the relationship between PCB and in-role performance ( $\beta = .18$ , *ns*), OCB ( $\beta = .24$ , *ns*), turnover intention ( $\beta = .08$  *ns*), and actual turnover ( $\beta = -.49$ , *ns*). Overall, H7 is therefore not supported.

Gender egalitarianism practices moderated the relationship between PCB and in-role performance ( $\beta = -.44$ ,  $p < .01$ ) and turnover intention ( $\beta = .26$ ,  $p < .05$ ). Given that the correlation between PCB and in-role performance is negative (see table 1), the negative beta indicates this negative correlation becomes larger when gender egalitarianism is higher. Given that the correlation between breach and turnover intention is positive (see table 1), the positive beta indicates that this positive correlation becomes larger when gender egalitarianism is higher. Gender egalitarianism practices did *not* moderate the relationship between PCB and OCB ( $\beta = -.33$ , *ns*), and actual turnover ( $\beta = -.49$ , *ns*). However, for OCB it approached significance ( $p = .058$ ) and future research might thus want to investigate this. Overall, these findings provide partial support for H8.

## **Discussion**

Our findings show that psychological contract breach (PCB) is strongly linked to key work outcomes (i.e., in-role performance, OCBs, turnover intentions, and actual turnover) based on most up to date PCB studies in the literature. Most importantly, the novel findings of our study are that the cultural practices moderate the PCB and work outcome relationship. Previous studies have found that cultural differences such as institutional collectivism and power distance can influence breach-related work outcomes. For example, Kickul and colleagues (2004) found that the association between PCB and job performance and turnover differed across cultures based on data collected from employees from Hong Kong and the US. Zagenczyk and colleagues (2015) found that power distance moderated the association between breach and turnover based on 180 full-time employees using a survey from the USA. Our

findings expand those findings and add a new contribution to the literature. Firstly, our study examined the impact of six cultural dimensions, namely: institutional collectivism practices, performance orientation practices, power distance practices, future orientation practices, uncertainty avoidance practices, and gender egalitarianism practices. In doing so, we focused on understanding their moderating impact on the relationships of PCB with job performance and turnover. Second, we used meta-analytic techniques as opposed to survey methods used by previously, and this allowed us to use a large, international dataset to increase statistical power to detect moderating effects of cultural practices on breach-related job performance and turnover. Third, most of the previous studies have measured individual-level culture perceptions but we examined society-level cultural scores in this study.

Based on the GLOBE's cultural dimensions, this study revealed that national cultural practices indeed moderate the relationships between PCB and work outcomes as we expected. Specifically, we expected people to be less affected by PCB when there are higher institutional collectivism practices, performance-oriented practices, and power-distance practices. Moreover, we expect people to be more strongly affected by a breach when there are higher future-orientation practices, uncertainty practices, and gender egalitarianism practices. Overall, our results support the notion that society's cultural practices can shape PCB-to-work-behavior relationships, although some specific relationships were found to be non-significant.

Most strikingly, we found that almost all of the four relationships between PCB and the work behaviors were moderated by institutional collectivism, while none were moderated by uncertainty avoidance practices. This can be explained based on social cognitive theory (Albert, 1998) which suggests that personal and environmental factors influence behavior bidirectionally. It may be that employees are influenced by environmental factors other than their distal cultures such as economic and political factors (Behery *et al.*, 2016). For example, empirical evidence suggests that macro-economic factors shape employee behaviors following

a breach (Behery *et al.*, 2016). Besides, personal factors such as proximal goals (intentions) and expectations (Bandura, 1986) might have impacted employee behaviors. For example, it may well be due to proximal cultural factors (Bandura, 1998), organizational politics, or family circumstances (Azim *et al.*, 2015; Kiewitz *et al.*, 2009) and also due to various other demographic factors (Bal *et al.*, 2008).

Our study combined individual-level data with country-level data, thereby adding multi-level sources of information to understand PCB effects, which is, to our knowledge, the first time this has been done. It is important to understand the impact of national culture specifically, because evidence suggests that national culture is a key determinant of work perceptions (Thomas *et al.*, 2003) and outcomes (Papademetriou and Masouras, 2014). In addition, culture at the national level might impact individual work outcomes differently than the culture at the organizational level or the individual level (Palthe, 2014; House *et al.*, 2004). Therefore, future research could explore the impact of national culture (at the individual level) on work outcomes (Papademetriou and Masouras, 2014) by using multi-level models (Fischer *et al.*, 2005).

### **Theoretical implications**

Our study provides several theoretical implications. First, psychological contract research has primarily assumed that psychological contract evaluations are influenced by people's immediate environment (e.g., Morrison and Robinson, 1997), individual perceptions of culture (Aldossari, 2016; Thomas *et al.*, 2003; 2010), or organizational culture (Chen *et al.*, 2007). However, our findings indicate that societal-cultural practices can influence work outcomes in line with more general literature that found national cultural practices can shape individual work outcomes (e.g., Autio *et al.*, 2013; Fischer and Mansell, 2009; Markus and Kitayama, 1991). Our findings show that national cultural practices shape individual work

outcomes and we suggest that these findings should be taken into account in future PCB research. More specifically, our findings reveal the impact of national cultural practices may not follow a uniform pattern in how they signal to individuals how they are expected to cope with psychological contract breaches but may depend on the type of cultural dimension and the specific job behavior. Based on our findings, we suggest that psychological contract theory would benefit from taking a wider perspective on the coping processes of people following the breach and incorporate national cultural dimensions into consideration.

Moreover, our study also offers implications for HRM literature. There is now increasing evidence that individual decision making does not just occur in isolation, but is increasingly dependent on the context (Johns, 2018). Our findings show that a nation's institutional collectivism practices moderated the relationship between PCB and in-role performance and turnover intention of employees. Previous studies have examined cultural values particularly focusing on individualism and collectivism dimensions (Thomas *et al.*, 2003; 2010). However, the impact on other cultural practices at the society level was not well understood. Our study addresses these limitations by developing a multi-level theoretical framework to establish an association between national culture and PCB and work outcomes. There has been some indication that performance orientation impacts psychological contract perceptions (Rahman *et al.*, 2017), and in line with previous findings, our findings indicate that performance orientation practices significantly moderated the relationship between PCB and OCB of employees. Interestingly, the novel findings of our study show that future society practices and gender egalitarianism practices moderated the breach related job performance and turnover. We encourage future researchers to explore how future society practices and gender egalitarianism practices might differ across various industries and individuals. However, as opposed to what we expected, uncertainty avoidance practices did not moderate the breach related job performance and turnover.

In sum, we recommend that PCB researchers consider national culture when theorizing the effects of a breach on work outcomes. We suggest that it is crucial to understand the impact of national cultural practices because cultural practices profoundly influence how people feel, behave, and make a decision in the workplace (Bal and Dóci, 2018). In addition, we suggest that future researchers could explore how national cultural practices at both distal (society-level) and proximal level (individual-level) might influence PCB-related work outcomes.

### **Limitations, and suggestions**

Despite the strengths, our study has limitations. One limitation is that our sample size for actual turnover is derived from a small sample. This is because PC scholars have traditionally paid little attention to understanding the impact of PCB on actual turnover, but we included this variable because some evidence suggested that the national culture might impact turnover intention and actual turnover differently (Wong and Cheng, 2019). Actual turnover can have a relatively strong impact on organizational consequences such as performance and cost (Wong and Cheng, 2019). Moreover, the turnover intention might have or might not have a link with the actual turnover of people following breach across societies. Therefore, given the limited number of studies available at present, we urge future researchers to pay more attention to understanding how national cultural practices might impact breach-related actual turnover. Besides, we recommend exploring the possible connection between national cultural practices with both turnover intention and turnover following a breach. Also, how national culture might impact breach-related to other work outcomes beyond job performance and turnover warrant further investigations.

Second, we did not examine the impact of culture at the group level on work outcomes. However, examining the cultural impact across broad levels can impede the possibility of exploring specific predictions about when and how national culture matters to understand

individual-level outcomes. Therefore, this study attempted to examine the impact of national culture on the associations between the breach and individual job behaviors. However, we encourage future researchers to explore these areas.

Third, by applying a multi-level model, we assumed that national culture can impact individual level work outcomes via a direct distal path in line with previous researchers (Van der Vijver *et al.*, 2008). This approach is particularly useful in providing insights when there is an absence of individual scores to measure individual-level cultural scores (Parboteeah *et al.*, 2005). It would be interesting to explore how the distal path fits with the proximal path (i.e., the impact of national culture at the individual level on breach-related work outcome across countries), and this is an area for future research. Besides, there may be various mechanisms through how national culture directly or indirectly impact work outcomes. We suggest that future researchers could explore these areas. Fourth, national culture may be subject to change over time (Oyserman *et al.*, 2002). We treated distal culture as permanent enough to allow us to understand its consequences on the associations between breach and work outcomes. We recommend future researchers to consider exploring temporal factors in understanding the national cultural impact on individual-level work outcomes.

### **Practical implications and conclusions**

Previous studies have shown that employee outcomes such as performance and turnover are influenced by the national culture (Doellegast and Marsden, 2018; Johnson and Meade, 2010; Pudelko, 2006). In line with previous studies (see for example Kickul *et al.*, 2004), our study shows that while generally, PCB is negatively related to performance-related outcomes, and positively with turnover (intentions), these relationships are contingent upon the general state of the cultural practices at the country level as suggested by scholars (Lelchook and Sully de Luque, 2015). Thus, organizations and managers should be aware that employees



may respond differently to PCB depending on their culture. Understanding how different cultural practices shape employee breach-related outcomes can help global managers to better understand managing employee job performance and turnover across cultures.

International managers tend to assume that one policy would suit all organizations that operate across cultures in managing employment relations (Edwards *et al.*, 2019). However, the practice of designing management policies centrally must be done with caution while allowing the flexibility to incorporate local management practices that suit local context based on national cultural context. There are many lessons we can draw from this study and also lessons for managerial implications and practice.

Our findings show that people who live in low-collectivist societies such as the UK and the USA tend to decrease job performance and increase turnover following a breach in comparison to those who are from high collectivist societies. Therefore, we recommend that managers who deal with an employee who is from low collectivist societies should adopt more strategies such as by enhancing job autonomy through job redesigning or rotating to enhance job performance and reduce turnover following breaches. Managers may consider group-based incentives and rewards in high-collectivist societies to maintain employee job performance following breaches.

Moreover, our findings suggest that performance orientation practices moderated breach-related work outcomes. People who are exposed to low-performance orientation practices of the society such as employees in Argentina will respond more negatively to PCB concerning OCB, such that they are less willing to perform extra-role behaviors. Therefore, knowing individual employees in low-performance societies are less interested in job performance but more interested in relationships, managers could improve relationships with employees to enhance their performance following breaches. This can be achieved by promoting communication and helping employees to feel valued and inspiring employees by

developing and maintaining effective informal communication channels through various levels of employees within the organizations to maintain smooth work relationships. On the contrary, employees in the USA and Europe will respond less negatively to PCB concerning OCB, and we recommend managers consider reforming programs that emphasize organizational mechanisms to improve the performance management systems and rewarding practices to maintain employee performance following breaches.

Power-distance practices moderated the relationship between PCB and in-role performance such that people who live-in high-power distance countries such as China are more tolerant to breach (Mathew and Taylor, 2019). In low power distance countries such as the Netherlands and the United Kingdom, managers should take extra strategies to enhance job performance and reduce turnover, and this may be achieved by creating a participatory decision-making process within the organizations. Moreover, future society practices moderated the relationship between PCB and in-role performance, turnover intention, and actual turnover. Based on our findings, we recommend that managers could take extra steps to help employees to plan and invest in their career within the organizations and also to embrace future-oriented decisions of their employees to retain them, particularly when managing employees from high future society countries such as Canada.

Our findings showed no impact on breach-related work outcomes of society's uncertainty avoidance. This is surprising as this is opposed to what we expected but the findings can be explained. For example, it may be that employees who live in low uncertainty societies did not experience the uncertainty of finding an alternative job if they underperformed or left voluntary the existing job due to having other employment opportunities in their countries. Regarding gender-egalitarian societies, our findings showed that gender egalitarianism practices moderated the relationship between PCB and in-role performance and turnover intention. In high gender-egalitarian societies, more effort needs to develop national policies

to enhance employee performance and reduce turnover through ongoing training, reward management system, and an effective communicational channel between the managers and employees across all levels. In contrast, in low gender-egalitarian societies, policies related to recruitment, training, and performance management could be developed to recognize and promote gender role differences at work.

In conclusion, we recommend policymakers to use these results to guide them in adopting a strategic perspective to manage breach-related employee performance and turnover. We recommend implementing national reforms that concern the dominant national culture (based on GLOBE's scores) in more affected countries. Moreover, we recommend managers to introduce HRM policies to suit national cultural practices based on geographic areas or clusters as identified in the GLOBE (House *et al.*, 2004). To enhance employee performance and reduce turnover following breaches, managers should prioritize developing strategies to promote high-performance management system within their organizations and among employees in the GLOBE European cultures while prioritizing to enhance employee relations through establishing a sense of team when organizing work and rewarding teams in employees who belong to the GLOBE Asian clusters. It may be beneficial to include more feedback mechanisms in low power distance and high gender-egalitarian countries that belong to the GLOBE European clusters. However, at the moment, we have only a limited number of original studies reporting the findings related to the GLOBE culture clusters or geographic areas beyond Europe and Asia. Thus, there is a need for future researchers to address this limitation.

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**Table 1**

Meta-analysis results of the main effects of psychological contract breach

Outcomes	<i>k</i>	<i>N</i>	<i>r</i>	$\rho$	<i>SD</i> $\rho$	95% Confidence Interval		90% Credibility Interval		<i>Q</i>	Fail safe <i>k</i>
						Lower	Upper	Lower	Upper		
In-role performance	34	8287	-.21	-.22	.12	-.26	-.17	-.42	-.01	138	54
OCB	33	20268	-.22	-.24	.06	-.24	-.21	.39	-.06	211	54
Turnover intentions	61	20753	.32	.34	.18	.29	.39	.02	.70	947	79
Actual turnover	6	6869	.13	.18	.04	.07	.12	.03	.16	13	2

Note: *k* = number of studies; *N* = number of observations; *r* = mean uncorrected correlation;  $\rho$  = true score correlation; *SD* $\rho$  = standard deviation of true score correlation; *Q* = Cochran's *Q* test; fail safe *K* = the number of additional studies.

**Table 2**

Meta-analytic results of the moderating roles of national cultural factors in the relationships  
between contract breach and job behaviors

<b>Outcome</b>	<b>k</b>	<b>n</b>	<b>Coef.</b>	<b>s.e.</b>	<b>p</b>	<b>R<sup>2</sup></b>
<i>Institutional collectivism practices</i>						
In-role performance	34	8632	.37	.01	.02	.14
Citizenship behaviour	33	20268	.37	.01	.03	.13
Turnover intention	61	20753	-.29	.01	.02	.08
Actual turnover	6	6879	-.81	.00	<i>ns</i>	.65
<i>Performance-oriented practices</i>						
In-role performance	34	8632	.33	.01	<i>ns</i>	.10
Citizenship behaviour	33	20268	.40	.01	.01	.16
Turnover intention	61	20753	-.03	.01	<i>ns</i>	.00
Actual turnover	6	6879	.04	.01	<i>ns</i>	.00
<i>Power distance practices</i>						
In-role performance	34	8632	.37	.01	.03	.13
Citizenship behaviour	33	20268	.27	.01	<i>ns</i>	.07
Turnover intention	61	20753	-.23	.01	<i>ns</i>	.05
Actual turnover	6	6879	.59	.00	<i>ns</i>	.35
<i>Future society practices</i>						
In-role performance	34	8632	-.35	.01	.04	.12
Citizenship behaviour	33	20268	.08	.01	<i>ns</i>	.00
Turnover intention	61	20753	.27	.01	.03	.07
Actual turnover	6	6879	.90	.00	.01	.81
<i>Uncertainty avoidance practices</i>						
In-role performance	34	8632	.18	.01	<i>ns</i>	.03
Citizenship behaviour	33	20268	.24	.01	<i>ns</i>	.06
Turnover intention	61	20753	.08	.01	<i>ns</i>	.00
Actual turnover	6	6879	-.49	.00	<i>ns</i>	.24
<i>Gender egalitarianism practices</i>						
In-role performance	34	8632	-.44	.01	.00	.19
Citizenship behaviour	33	20268	-.33	.01	<i>ns</i>	.11
Turnover intention	61	20753	.26	.01	.04	.06
Actual turnover	6	6879	.49	.01	<i>ns</i>	.24

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

Authors	Country and the Sample	Sample Size	Reliability Breach	In-role performance	Citizenship behavior	Turnover intention	Actual turnover
1. Akhtar et al. (2016)	Pakistan Financial employees	398	.85			.20 (.93)	
2. Arain et al. (2012)	Pakistan Blue and white collar workers	250	.74			.26	
3. Aykan (2014)	Turkey Manufacturing employees	166	.92			.28 (.86)	
4. Bal et al. (2010)	USA Public/private employees	266	.89	-.19 (.86)	-.20 (.90)		
5. Bal et al. (2013) *	Netherlands Multinational employees	240	.87	.17 (.84)			
6. Bal et al. (2010)	Netherlands Retired workers	176	.82	-.25	-.16		
7. Bohle et al. (2017)	Chile Various employees	615	.86	-.12 (.86)	-.17 (.77)		
8. Bunderson (2001) *	USA Healthcare employees	283	.89			.34	.18
9. Büyükyılmaz & Cakmak (2013)	Turkey University employees	570	.94			.63 (.95)	
10. Carbery et al. (2003)	Ireland Hotel managers	280	.94			.32 (.85)	
11. Cassar et al. (2016)	UK Manufacturing employees	420	.80			.48 (.88)	
12. Cavanaugh & Noe (1999)	USA Seminars Attendants	136				.25	
13. Cesario et al. (2014)	Portugal Expatriates	100				.39 (.80)	
14. Chambel & Alcover (2011)	Portugal Call Centre employees	363			-.07 (.90)		
15. Chen & Wu (2017)	Taiwan Hotel employees	226	.82			.75 (.89)	
16. Cheung et al. (2016)	Hong Kong Hospitality employees	182	0.95	-.38 (.94)	-.48 (.94)		
17. Clinton & Guest (2014)	UK Air force employees	6001					.09
18. Cohen & Diamant (2017)	Israel Teachers			-.17 (.74)	-.17 (.74)		
19. Costa & Neves (2017)	Portugal Managers/ water industry	220	.86	-.04 (.91)	-.13 (.85)		

20. Coyle-Shapiro & Kessler (2000)	UK Managers	6953	.87	-.17 (.63)	
21. Coyle-Shapiro & Kessler (2003)	UK Various employees	5709	.81	-.26 (.74)	
22. De Cuyper & De Witte (2006)	Belgium Hospital employees	544	.80	-.24 (.74)	
23. De Jong et al. (2009)	Netherlands Various employees	313	.93		.35 (.78)
24. De Jong et al. (2009)	Netherlands Various employees	523	.96		-.14 (.79)
25. De Jong (2009)	Netherlands Various employees	779			.01 (.79)
26. Dulac et al. (2008) *	Belgium Academic staff	152	.95		.57 (.96)
27. Freese et al (1999) *	Netherlands Healthcare workers	119	.91		.31 (.88)
28. Freese & Schalk (2008)	Netherlands Healthcare workers	480	.92		.33
29. Gardner et al. (2015) *	China Various employees	462	.82	-.02 (.87)	.07 (.79)
30. Granrose & Baccili (2006)	USA Aerospace employees	145			.04 (.88)
31. Gregory et al. (2007) (2007)	Canada Healthcare employees	343	.70		.38 (.72)
32. Griep et al. (2016) *	Belgium Voluntary employees	247		-.16	
33. Guchait et al. (2015)	India Restaurant employees	289	.90		.38 (.82)
34. Guerrero & Herrbach (2005)	France Various employees	217			.30
35. Hartmann & Rutherford (2015)	USA Sales employees	308	.94	-.12 (.92)	.55 (.69)
36. Henderson et al. (2008)	USA Industrial employees	278	.80	-.17 (.89)	-.16
37. Huiskamp & Schalk (2002)	Netherlands Various employees	1331	.83		.33 (.86)
38. Jafri (2012)	India Bank executives	90	.84		-.15 (.86)
39. Johnson & O'Leary-Kelly (2013)	USA Bank employees	103	.94	-.33 (.95)	-.07
40. Kraak et al. (2017)	Netherlands Various employees	1066	.95		.39 (.95)
41. Lapalme et al. (2011)	Canada Agency workers	186	.95		-.14 (.91)
42. Lapointe et al. (2013)	Canada Various employees	224	.95		.22 (.90)
43. Larwood et al. (1998)	USA Various employees	257	.75		.44 (.85)
44. Lee et al. (2014)	USA Nonprofit employees	141	.86	-.20 (.76)	-.12 (.72)
45. Lee et al. (2011)	China	136			.24



46. Lemire & Rouillard (2005)	Graduate students Canada Public sector employees	132				.44 (.82)	
47. Lester et al. (2001)	USA MBA students/ full time employees	268	.90	-.03	-.02	.14	
48. Lester et al. (2002)	USA MBA students	134	.90	-.35 (.93)			
49. Li et al. (2016)	China Hotel staff	272	.82	-.12 (.44)			
50. Lo & Aryee (2003)	Hong Kong MBA students	152		-.31 (.78)	-.31 (.78)	.48	
51. Millard & Brewerton (1999)	UK Employees	117				.63	
52. Orvis et al. (2008) *	USA University employees	106		-.15		.19	
53. Paille & Dufour (2013)	Quebec Occupational therapist	414	.91			.10 (.86)	
54. Piccoli et al. (2017)	Italy Blue collar workers	570	.85		-.25 (.72)		
55. Quratulain et al. (2018)	Pakistan Education workers	247	.71			.22 (.78)	
56. Raja et al. (2004)	Pakistan Clerical workers	197	.79			.48 (.83)	
57. Restubog et al. (2007)	Philippines Sales executives	162	.87	-.20 (.89)	-.49 (.80)		
58. Restubog et al. (2007)	Philippines Pharmacy employees	189	.82	-.47 (.89)	-.59 (.72)		
59. Restubog et al. (2006)	Philippines IT employees	167	.87	-.47 (.77)	-.39 (.78)		
60. Restubog et al. (2010)	Philippines Manufacturing employees	250	.72	-.31 (.87)	-.31 (.72)		
61. Restubog et al. (2010)	Philippines Pharmacy employees	158	.88	-.60 (.95)	-.24 (.84)		
62. Restubog (2008) *	Philippines Bank employees	240	.78		-.22 (.81)		
53. Restubog et al. (2008) *	Philippines Various employees	137	.80		-.13 (.83)		
64. Rigotti (2009)	Germany Various employees	592				.28 (.79)	
65. Robinson (1996) *	USA Alumni managers	125			-.25 (.67)	.38 (.86)	.20
66. Robinson & Morrison (2000) *	USA Various employees	147	.92	-.18 (.95)			
67. Robinson & Rousseau (1994) *	USA Various employees	128	.78			.42	.32
68. Rodwell, J. & Ellershaw (2016)	Australia Nurses/ healthcare	459	.89			.51	
69. Rosen et al. (2009)	USA Various employees	319			-.29 (.75)		
70. Salin & Notelaers (2017)	Finland Business	1148	.90			.52 (.89)	

71. Schalk et al. (1995)	Professionals Netherlands	338	.72			.39	
	Various employees					(.87)	
72. Shahnawaz, & Goswami (2011)	India Private sector managers	100	.80			-.08	(.87)
73. Shahnawaz, & Goswami (2011)	India Public sector managers	100	.80			.17	(.87)
74. Shih et al. (2012)	Taiwan Theme park employees	204	.94	-.19 (.90)	-.19 (.90)		
75. Si et al. (2008)	China Various employees	524				.32	(.84)
76. Steve & Cheng (2007)	Taiwan Company employees	135	.88			.42	(.82)
77. Stoner et al. (2011) *	USA Various employees	126	.95			.41	(.92)
78. Stoner et al. (2010)	USA Various employees	126				.46	(.92)
79. Sturges et al. (2005)	UK Media employees	151	.91	-.38			.04
80. Suazo (2009)	USA Managerial employees	196	.89	-.13		.35	(.87)
81. Suazo et al. (2005)	USA Various employees	234	.88	-.18 (.87)	-.28 (.93)	.57	(.76)
82. Sutton & Griffin (2004) *	Australia Occupational therapy students	235				-.32	(.90)
83. Takase et al. (2016)	Japan Nurses and mid- wives	766	.91			.54	(.93)
84. Tekleab et al. (2013)	USA University employees	106		-.07 (.88)		-.15	(.97)
85. Tekleab and Taylor (2003)	USA Various employees	298	.81	-.14 (.81)	-.16 (.85)	.23	(.85)
86. Tekleab et al. (2005)	USA University employees	191	.83			.14	(.85) -.02
87. Turnley et al. (2003)	USA Various employees	134	.85	-.38 (.93)	-.41 (.85)		
88. Turnley & Feldman (1999)	USA Managerial employees	781				.38	(.92)
89. Turnley & Feldman (2000)	USA Managerial employees	804	.83	-.46 (.81)	-.46 (.81)	.48	(.93)
90. Uen et al. (2009)	Taiwan High-tech employees	127	.80	-.24 (.83)	-.21 (.83)		
91. Van den Heuvel et al. (2017)	Netherlands Communication employees	669				.38	(.81)
92. Van der Vaart et al. (2015)	South Africa Various employees	246				.60	(.72)
93. Vantilborgh (2015)	Belgium Various employees	215	.83			.18	(.82)
94. Wu & Chen (2015)	Taiwan High-tech employees	258	.89	-.41 (.91)			

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95. Zagenczyk et al. (2015) *	USA Various employees	265	.35 (.87)
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*Note: Reliabilities are presented between brackets, however, only 2 out of the 6 studies reported internal reliabilities for turnover.*

*\* Longitudinal study.*

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

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**Appendix C: Overview of the Cultural practices scores (based on GLOBE) included in the Meta-Analysis**

<b>Authors</b>	<b>Institutional collectivism practices</b>	<b>Performance orientation practices</b>	<b>Power distance practices</b>	<b>Future orientation practices</b>	<b>Uncertainty avoidance practices</b>	<b>Gender egalitarianism practices</b>
1. Akhtar et al. (2016)	4.38	4.25	5.47	4.19	4.15	2.90
2. Arain et al. (2012)	4.38	4.25	5.47	4.19	4.15	2.90
3. Aykan (2014)	4.03	3.83	5.57	3.74	3.63	2.89
4. Bal et al. (2010)	4.20	4.49	4.88	4.15	4.15	3.34
5. Bal et al. * (2013)	4.46	4.32	4.11	4.61	4.70	3.50
6. Bal et al. (2010)	4.46	4.32	4.11	4.61	4.70	3.50
7. Bohle et al. (2017)	3.66	3.65	5.64	3.08	3.65	3.49
8. Bunderson * (2001)	4.20	4.49	4.88	4.15	4.15	3.34
9. Büyükyılmaz & Cakmak (2013)	4.03	3.83	5.57	3.74	3.63	2.89
10. Carbery et al. (2003)	4.63	4.36	5.15	3.98	4.30	3.21
11. Cassar et al. (2016)	4.27	4.08	5.15	4.28	4.65	3.67
12. Cavanaugh & Noe (1999)	4.20	4.49	4.88	4.15	4.15	3.34
13. Cesario et al. (2014)	3.92	3.60	5.44	3.71	3.91	3.66
14. Chambel & Alcover (2011)	3.92	3.60	5.44	3.71	3.91	3.66
15. Chen & Wu (2017)	4.59	4.56	5.18	3.96	4.34	3.18
16. Cheung et al. (2016)	4.13	4.80	4.96	4.03	4.32	3.47
17. Clinton & Guest (2014)	4.27	4.08	5.15	4.28	4.65	3.67
18. Cohen & Diamant (2017)	4.46	4.08	4.73	3.85	4.01	3.19
19. Costa & Neves (2017)	3.92	3.60	5.44	3.71	3.91	3.66
20. Coyle-Shapiro & Kessler (2000)	4.27	4.08	5.15	4.28	4.65	3.67
21. Coyle-Shapiro & Kessler (2003)	4.27	4.08	5.15	4.28	4.65	3.67
22. De Cuper & De Witte (2006)	4.46	4.32	4.11	4.61	4.70	3.50
23. De jong et al. (2009)	4.46	4.32	4.11	4.61	4.70	3.50
24. De jong et al. (2009)	4.46	4.32	4.11	4.61	4.70	3.50



25. De jong (2009)	4.46	4.32	4.11	4.61	4.70	3.50
26. Dulac et al. * (2008)	4.46	4.32	4.11	4.61	4.70	3.50
27. Freese et al* (1999)	4.46	4.32	4.11	4.61	4.70	3.50
28. Freese & Schalk (2008)	4.46	4.32	4.11	4.61	4.70	3.50
29. Gardner et al. (2015) *	4.77	4.45	5.04	3.75	4.94	3.05
30. Granrose & Baccili (2006)	4.20	4.49	4.88	4.15	4.15	3.34
31. Gregory et al. (2007)	4.38	4.49	4.82	4.44	4.58	3.70
32. Griep et al. * (2016)	4.46	4.32	4.11	4.61	4.70	3.50
33. Guchait et al. (2015)	4.38	4.25	5.47	4.19	4.15	2.90
34. Guerrero & Herrbach (2005)	3.93	4.11	5.28	3.48	4.43	3.64
35. Hartmann & Rutherford (2015)	4.20	4.49	4.88	4.15	4.15	3.34
36. Henderson et al. (2008)	4.20	4.49	4.88	4.15	4.15	3.34
37. Huiskamp & Schalk (2002)	4.46	4.32	4.11	4.61	4.70	3.50
38. Jafri (2012)	4.38	4.25	5.47	4.19	4.15	2.90
39. Johnson & O'Leary-Kelly (2013)	4.20	4.49	4.88	4.15	4.15	3.34
40. Kraak et al. (2017)	4.46	4.32	4.11	4.61	4.70	3.50
41. Lapalme et al. (2011)	4.38	4.49	4.82	4.44	4.58	3.70
42. Lapointe et al. (2013)	4.38	4.49	4.82	4.44	4.58	3.70
43. Larwood et al. (1998)	4.20	4.49	4.88	4.15	4.15	3.34
44. Lee et al. (2014)	4.20	4.49	4.88	4.15	4.15	3.34
45. Lee et al. (2011)	4.77	4.45	5.04	3.75	4.94	3.05
46. Lemire & Rouillard (2005)	4.38	4.49	4.82	4.44	4.58	3.70
47. Lester et al. (2001)	4.20	4.49	4.88	4.15	4.15	3.34
48. Lester et al. (2002)	4.20	4.49	4.88	4.15	4.15	3.34
49. Li et al. (2016)	4.77	4.45	5.04	3.75	4.94	3.05
50. Lo & Aryee (2003)	4.13	4.80	4.96	4.03	4.32	3.47
51. Millard & Brewerton (1999)	4.27	4.08	5.15	4.28	4.65	3.67
52. Orvis et al. (2008) *	4.20	4.49	4.88	4.15	4.15	3.34
53. Paille & Dufour (2013)	4.38	4.49	4.82	4.44	4.58	3.70
54. Piccoli et al.	3.68	3.58	5.43	3.25	3.79	3.24

(2017)						
55. Quratulain et al.	4.38	4.25	5.47	4.19	4.15	2.90
(2018)						
56. Raja et al.	4.38	4.25	5.47	4.19	4.15	2.90
(2004)						
57. Restubog et al.	4.65	4.47	5.44	4.15	3.89	3.64
(2007)						
58. Restubog et al.	4.65	4.47	5.44	4.15	3.89	3.64
(2007)						
59. Restubog et al.	4.65	4.47	5.44	4.15	3.89	3.64
(2006)						
60. Restubog et al.	4.65	4.47	5.44	4.15	3.89	3.64
(2010)						
61. Restubog et al.	4.65	4.47	5.44	4.15	3.89	3.64
(2010)						
62. Restubog *	4.65	4.47	5.44	4.15	3.89	3.64
(2008)						
53. Restubog et al.	4.65	4.47	5.44	4.15	3.89	3.64
(2008) *						
64. Rigotti	3.67	4.17	5.39	4.11	5.19	3.08
(2009)						
65. Robinson	4.20	4.49	4.88	4.15	4.15	3.34
*(1996)						
66. Robinson & Morrison *	4.20	4.49	4.88	4.15	4.15	3.34
(2000)						
67. Robinson & * Rousseau (1994) *	4.20	4.49	4.88	4.15	4.15	3.34
68. Rodwell, J. & Ellershaw (2016)	4.29	4.36	4.74	4.09	4.39	3.40
69. Rosen et al.	4.20	4.49	4.88	4.15	4.15	3.34
(2009)						
70. Salin & Notelaers	4.63	3.81	4.89	4.24	5.02	3.35
(2017)						
71. Schalk et al.	4.46	4.32	4.11	4.61	4.70	3.50
(1995)						
72. Shahnawaz, & Goswami (2011)	4.38	4.25	5.47	4.19	4.15	2.90
73. Shahnawaz, & Goswami (2011)	4.38	4.25	5.47	4.19	4.15	2.90
74. Shih et al.	4.59	4.56	5.18	3.96	4.34	3.18
(2012)						
75. Si et al.	4.77	4.45	5.04	3.75	4.94	3.05
(2008)						
76. Steve & Cheng	4.59	4.56	5.18	3.96	4.34	3.18
(2007)						
77. Stoner et al.	4.20	4.49	4.88	4.15	4.15	3.34
(2011) *						
78. Stoner et al.	4.20	4.49	4.88	4.15	4.15	3.34
(2010)						
79. Sturges et al.	4.27	4.08	5.15	4.28	4.65	3.67
(2005)						
80. Suazo	4.20	4.49	4.88	4.15	4.15	3.34
(2009)						
81. Suazo et al.	4.20	4.49	4.88	4.15	4.15	3.34
(2005)						
82. Sutton & Griffin*	4.29	4.36	4.74	4.09	4.39	3.40
(2004)						

83. Takase et al. (2016)	5.19	4.22	5.11	4.29	4.07	3.19
84. Tekleab et al. (2013)	4.20	4.49	4.88	4.15	4.15	3.34
85. Tekleab and Taylor (2003)	4.20	4.49	4.88	4.15	4.15	3.34
86. Tekleab et al. (2005)	4.20	4.49	4.88	4.15	4.15	3.34
87. Turnley et al. (2003)	4.20	4.49	4.88	4.15	4.15	3.34
88. Turnley & Feldman (1999)	4.20	4.49	4.88	4.15	4.15	3.34
89. Turnley & Feldman (2000)	4.20	4.49	4.88	4.15	4.15	3.34
90. Uen et al. (2009)	4.59	4.56	5.18	3.96	4.34	3.18
91. Van den Heuvel et al. (2017)	4.46	4.32	4.11	4.61	4.70	3.50
92. Van der Vaart et al. (2015)	4.50	4.38	4.63	4.38	4.34	3.46
93. Vantilborgh (2015)	4.46	4.32	4.11	4.61	4.70	3.50
94. Wu & Chen (2015)	4.59	4.56	5.18	3.96	4.34	3.18
95. Zagencyk et al. (2015)*	4.20	4.49	4.88	4.15	4.15	3.34

*Please note: Longitudinal study \**