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## Transitory effects of personality on employee turnover

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**Purpose** – examining transitory effects of extraversion and openness to experience on employee turnover.

**Design/Method/Approach.** Fully observed recursive mixed process model.

**Findings.** Results show that (i) extraversion positively predicts turnover and that (ii) openness does not predict turnover. Moreover, comparing size effects between studies reveals that only extraversion has significantly more positive effect on employee turnover, which is in contradiction with previous meta-analysis.

**Theoretical implications.** This research identifies a plausible boundary condition – national culture – in examining how a person's personality impact employee turnover in organizations. It highlights the shortcomings of previous meta-analysis that failed to incorporate differences in societal values and business contexts and identifies.

**Practical implications.** In studying cultural contexts and value congruencies, this study contributes to the international human resources literature by identifying boundary conditions that explain how personality impacts employee turnover.

**Originality/Value.** This study is the first to analyze the effects of personality on turnover using a within-individual unfolding and holistic model.

**Research limitations/Future research.** The current study incorporates only a sample from a single country. Future research that analyzes the moderating effects of societal and business values in cross-national samples could corroborate and extend on the findings from this study.

**Paper type** – empirical.

**Keywords:** recursive model; personality; value congruency; societal values; change of influence.

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## Вплив на плинність кадрів зміни особистісних якостей

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**Мета роботи** – протестувати перехідний вплив екстраверсії та відкритості до досвіду роботи на плинність кадрів.

**Дизайн/Метод/Підхід дослідження** – рекурсивна модель змішаного процесу, яку повністю спостерігають.

**Результати дослідження.** Показано, що (1) екстраверсія позитивно пророкує плинність і що відкритість (2) не є передумовою плинності. Порівняння величин впливу в дослідженнях показало, що тільки екстраверсія має значно більш позитивний вплив на плинність кадрів, і що це суперечить попередньому мета аналізу.

**Теоретичне значення дослідження.** В даному дослідженні визначено правдоподібну граничну умову – національна культура – при розгляді того, як особистість людини впливає на плинність кадрів в організаціях. Виділено і враховано недоліки попереднього мета аналізу, а саме: неврахування відмінностей в соціальних цінностях і бізнес-контекстах.

**Практичне значення дослідження.** Вивчення культурних контекстів і зіставлення цінностей, проведене в даному дослідженні, додало внеску в міжнародні наукові джерела, присвячені вивченню людських ресурсів, шляхом визначення граничних умов, що пояснюють як особистість впливає на плинність кадрів.

**Оригінальність/Цінність/Наукова новизна дослідження.** Вперше проаналізовано вплив особистості на плинність кадрів за окремими якостями індивідуума і як цілісна модель.

**Обмеження дослідження/Перспективи подальших досліджень.** Дане дослідження засноване на вибірці тільки з однієї країни. У майбутніх дослідженнях доцільно проаналізувати стримуючий вплив громадських і ділових цінностей на основі вибірок з різних країн, що, можливо, підтвердить і розширить висновки з даного дослідження.

**Тип статті** – емпірична.

**Ключові слова:** рекурсивна модель; особистість; співвідношення цінностей; суспільні цінності; транзиторийний ефект.

## Влияние на текучесть кадров изменения личностных качеств

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**Цель работы** – протестировать переходное влияние экстраверсии и открытости к опыту работы на текучесть кадров.

**Дизайн/Метод/Подход исследования.** Полностью наблюдаемая рекурсивная модель смешанного процесса.

**Результаты исследования.** Показано, что (1) экстраверсия положительно предсказывает текучесть и что открытость (2) не является предпосылкой текучести. Сравнение величин влияния в исследованиях показало, что только экстраверсия имеет значительно более позитивное воздействие на текучесть кадров, и что это противоречит предыдущему мета анализу.

**Теоретическое значение исследования.** В данном исследовании определено правдоподобное граничное условие – национальная культура – при рассмотрении того, как личность человека влияет на текучесть кадров в организациях. Выделены и учтены недостатки предыдущего мета анализа, а именно: неучтенность различий в социальных ценностях и бизнес-контекстах.

**Практическое значение исследования.** Изучение культурных контекстов и сопоставление ценностей, проведенное в данном исследовании, добавило вклад в международные научные источники, посвященные изучению людских ресурсов, путем определения граничных условий, объясняющих, как личность влияет на текучесть кадров.

**Оригинальность/Ценность/Научная новизна исследования.** Впервые проанализировано влияние личности на текучесть кадров по отдельным качествам индивидуума и как целостная модель.

**Ограничения исследования/Перспективы дальнейших исследований.** Данное исследование основано на выборке только из одной страны. В будущих исследованиях целесообразно проанализировать сдерживающее влияние общественных и деловых ценностей на основе выборок из разных стран, что, возможно, подтвердит и расширит выводы данного исследования.

**Тип статьи** – эмпирическая.

**Ключевые слова:** рекурсивная модель; личность; сопоставимость ценностей; общественные ценности; транзиторийный эффект.

## Introduction

losing an employee can cost organizations between 16% and 213% of the employee's annual gross salary, with losses in productivity (approximately 60%) making up the largest portion (Hinkin, & Tracey, 2000). Going beyond these measurable direct costs, high turnover rates have also been associated with a decrease in customer satisfaction, productivity, future revenue growth, and profitability (Zimmerman, 2008). Moreover, turnover has contagious effects on organizations, which leads to additional financial losses, i.e. an employee leaving an organization indirectly also encourages other employees to search for employment opportunities outside their current organization (Hancock et al., 2017).

Personality is considered a useful concept for predicting individuals' work behaviors because "it helps explain how individuals process and respond to various situational cues and environmental features" (Woo et al., 2016, p.358). As cognitive-affective personality system theory (Mischel, & Shoda, 1998) suggests, personality affects behaviors by influencing a person's affective responses and values, e.g., beliefs regarding the consequences for behaviors and interpretation of events and situations (Zimmerman, 2008). The five-factor model of personality traits (Costa, & McCrae, 1985), a parsimonious model of five dimensions of personality (openness to experience, conscientiousness, extraversion, agreeableness, and emotional stability), is prevalent in the personality literature and explains differences among individuals' dispositions. The most recent meta-analysis that evaluated the relationship between personality and turnover (Zimmerman, 2008) revealed that personality dimensions predict intended and actual turnover, even beyond individuals' job satisfaction and performance. Particularly, all personality traits except extraversion predict actual turnover. However, 71 out of 86 studies covered in this meta-analysis were based in North America, therefore favoring North American cultural and business values and contexts. Considering the effects of personality on turnover, one might expect that these meta-analytic results also generalize to other countries as personality profiles across countries remain similar (Kajonius, & Mac Giolla, 2017). Previous research neglected value systems as a confounding variable, however. Workplace behaviors and standards, beliefs, values, and other environmental features in the workplace differ across countries (Steelcase, 2012). Similarly, societal cultures also differ across countries and the literature established several well-known models for their classification (Schwartz, 1994; Hofstede, 2001; Leung & Bond, 2004). Looking at the strength of relationship among various models of societal cultures and personality traits, an empirical study across 27 countries found evidence that only some aspects of culture strongly correlate with certain personality traits (see McCrae et al., 2005 for details). Therefore, despite the similar personality profiles across countries (Molina, 2016), cultural values might moderate the effects that personality traits have on turnover in different countries.

The present study contributes to turnover and personality literature by emphasizing the importance of country specific cultural contexts. Particularly, it provides evidence that Zimmermann's (2008) meta-analysis offers little generalizability outside the North American cultural context. I show that the value congruence between contemporary labor market requirements and societal values, and societal values and personal values, provide the theoretical framework necessary for identifying boundary conditions. Failing to account for these findings may result in potentially adverse organizational outcomes, such as losses in performance, reputation, and finances. Accordingly, this study benefits executives and human resources managers responsible for their organizations' human capital.

## Research Questions

1. What are the transitory effects of extraversion and openness to experience on employee turnover?
2. Compared to Zimmerman's meta-analysis on the effects of personality on turnover, how well do the effects of extraversion and openness to experience from Zimmerman's study generalize to Germany?

## Theoretical background

Labor markets used to be characterized by long-term employment structured around organizational career advancement schemes (Sullivan, 1999). However, the 1990s US recession led to rising employment uncertainty over long-term, secure employment (Acosta, 2010). Consequently, as career self-development and creation of meaningful careers became more prominent, it was expected that voluntary interorganizational mobility would increase (Hall, 1996) as individuals would begin to manage their employability, i.e., "an individual's ability to gain initial employment, maintain employment, move between roles within the same organization, obtain new employment if required and (ideally) secure suitable and sufficiently fulfilling work" (McQuaid, & Lindsey, 2005, p.200).

Social networks can help a person to reduce career uncertainty, however. According to Colakoglu (2011, p.50), "wide networks of relationships help [individuals] to be informed of and recommended for new opportunities in other employment settings". The concept of social capital reflects the idea that social ties (e.g., friendships and membership in various social groups) and the goodwill these ties may confer transfer to other settings, such as work (Adner, & Helfat, 2003). Creating and maintaining social networks provides critical information and resources, like access to new contacts, and possible job referrals and job opportunities (Arthur, 1994) that increase an individual's marketability (Seibert et al., 2001). Extensive empirical research recognizes socialization as a critical skill for finding jobs (Granovetter, 1973; Lin, & Dumin, 1986; Boxman et al., 1991) as it improves a person's perceived internal and external marketability (Eby et al., 2003) and provides job seekers with crucial information and opportunities that allow for greater interorganizational mobility (Saxenian, 1996).

Individuals with extravert personality are more comfortable with networking and spend more time maintaining their social networks (Wanberg, & Kammeyer-Mueller, 2000). Extraversion, one of the five personality dimensions, measures the extent to which a person engages with the external world. Individuals high in extraversion are excitement seeking, action-oriented, gregarious, enthusiastic, and often experience positive emotions. When in groups or surrounded by people, extraverts are outgoing, talkative, active, cheerful, they like to assert themselves and to draw attention to themselves (Teng, 2008; John, & Srivastava, 1999). However, the empirical evidence on the effects of extraversion on turnover behavior is mixed. Most studies report a higher turnover for individuals high in extraversion (Timmermann, 2006; Mayende, & Musenze, 2014). Yet, a recent meta-analysis finds a negative, yet insignificant effect (Zimmermann, 2008). Although the study does not provide an argument for the effect's absence, the negative sign is explained by extraverts' higher job embeddedness (Mitchell et al., 2001): Extraverts' dispositions to seek positive emotions and establish social ties will also be pronounced inside their work organizations, resulting in higher acculturation and social integration with their current organization, which therefore lowers their perceived ease of movement to other organizations.

In order to disentangle the mixed effects of extraversion on turnover, I draw on value congruence theory which describes “the degree to which an individual’s values match the values found in their work environment” (Molina, 2016, p.1). Particularly, two value congruences must be satisfied: person – work environment and work environment – labor market. In this sense, the work environment moderates the value systems between a person and the labor market. Accordingly, the work environment values determine the direction of the effects that personal values have in labor markets which in turn might explain inconsistent effects of extraversion on turnover previously found in literature. Hofstede’s (2001) model of six dimensions of national cultures reflects workplace behaviors and standards, beliefs, values, and other environmental features across countries. In particular, its fifth dimension – long-term versus short-term orientation – relates to the choice of focus for people’s efforts, where long term focuses on the future and the short term on present and past (for an overview of the remaining five dimensions of national cultures, see Hofstede, 2010). Ranked on a continuous scale ranging from 0 (short-term orientation) to 100 (long-term orientation), countries like South Korea (100), Taiwan (93), Japan (88), and China (87) scored the highest (Hofstede et al., 2010), while for the European countries, Ukraine (86) scored the highest, followed by Germany (83). However, the United States (21) and Canada (36) score low in this cultural attribute.

Cultures with long-term orientation believe that both individuals and tradition should adapt to contemporary circumstances. As a result, individuals are thrifty and persevering, family life is guided by shared tasks, and success is attributed to effort and failure to lack of effort. When doing business, cultures with a long-term orientation put greater focus on market position, value adaptiveness, accountability, and self-discipline, and invest in lifelong social ties (Hofstede et al., 2010). Therefore, values, behaviors, and standards of cultures with long-term orientation are more congruent with people with high extraversion values and beliefs. In the same vein, a culture high in long-term orientation is also congruent with the value system of contemporary labor markets that put greater emphasis on career autonomy and career self-development. Consequently, in situations when cultural norms are reflected both in a person’s and labor market’s values, person’s values will be predictive of labor market outcomes. Particularly, in cultures with high long-term orientation that emphasize social ties and adaptability, high extraversion will positively predict an employee’s turnover behavior.

Certainly, a single congruence tie of person – work environment is insufficient for explaining the differing effects of extraversion on turnover. The value congruence between individuals and work environment implies higher extraversion of individuals in cultures with high long-term orientation compared with cultures with short-term orientation. This follows because societal values are a reflection of individuals’ values. However, recent research finds no differences in personality profiles across countries (Kajonius, & Mac Giolla, 2017). In the same vein, the value congruence between work environment and labor market would imply that only contemporary career patterns are encouraged and thus also rewarded in cultures high in long-term orientation. However, recent research finds that interorganizational mobility results in

higher compensation (Lam et al., 2012) and higher job satisfaction (Boswell et al., 2005; Chadi, & Hetschko, 2018) in developed countries, regardless of societal values. I therefore hypothesize:

**Hypothesis 1: Extraversion positively predicts turnover behavior in countries high in long-term orientation.**

A person’s propensity to change employers might originate in higher dispositions for new experiences, need for change and novelty, greater intellectual curiosity, and openness to new ideas and with a wider array of interests. These traits are captured by the openness to experience personality dimension. A person high in this dimension is curious, open-minded and change oriented, imaginative, creative, and appreciative of unusual ideas and art (Costa, & McCrae, 1985; Nieß, & Zacher, 2015). A stronger need for change and novelty means that a person with strong openness to experience would value changing jobs, and “be more active and skillful in seeking out new job opportunities” (Feldman, & Ng, 2007, p.362), regardless of job satisfaction (Zimmermann, 2008). Empirical evidence unanimously supports these theoretical expectations by finding that individuals high in openness to experience report higher interorganizational mobility (Zimmermann, 2008; Wille et al., 2010; Vinson et al., 2007; Woo, 2011). Therefore, I assert that individuals high in openness to experience are more apt to change organizations.

**Hypothesis 2: Openness to experience positively predicts a person’s turnover.**

## Data and methodology

### Sample

I use yearly individual-level employment data from the German Socio-Economic Panel (GSOEP; Schupp, 2009). Each year, respondents provided detailed information on their employment status. In the case of a job change, they had to indicate if it included the transition to a new organization. I only considered individuals employed prior to interorganizational job change as even shorter unemployment gaps can result in detrimental career outcomes (Kronberg, 2013) and only respondents with no missing information. I also excluded first-time employment because these do not include an interorganizational job change. Accounting for the independence of observations assumption, each respondent was included only once in the analysis. Where a same person’s personality was measured in multiple years, only the latest response was included. Lastly, as individuals’ personality was only measured in 2005, 2009, and 2013, and following the one year lagged structure of the model (how a person’s personality at time  $t$  impacts their propensity to change employers at time  $t+1$ ), I only consider observations in years 2006, 2010, and 2014. Consequently, all predictors including respondents’ salaries and job satisfaction were measured one year prior to their interorganizational job change (fig. 1).

The sample includes 11,525 respondents (48% women) between the ages of 20 and 86 ( $M = 44$ ,  $SD = 10.5$ ), with an average working experience of 20 years, and 13 years of school education. A total of 834 individuals reported changing organizations (tab. 1).

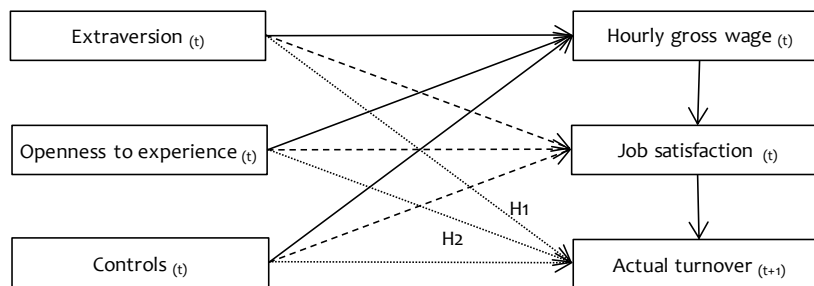


Fig. 1. Fully observed recursive mixed process model of turnover

Table 1

## Descriptive statistics and correlations

Variable name		Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1	ln (real gross hourly wage)	2,68	0,51																									
2	job satisfaction (11-point Likert)	7,12	1,93	0,08																								
3	interorganizational job change (1/0)	0,07	0,26	-0,07	-0,06																							
4	openness to experience	0,05	0,73	0,06	0,11	0,03																						
5	conscientiousness	0,11	0,68	-0,03	0,14	-0,02	0,16																					
6	extraversion	0,05	0,76	-0,02	0,14	0,03	0,37	0,18																				
7	agreeableness	0,00	0,70	-0,06	0,14	-0,02	0,16	0,30	0,13																			
8	emotional stability	0,06	0,73	0,13	0,23	0,01	0,08	0,10	0,15	0,12																		
9	gender (1 = female)	0,48	0,50	-0,24	0,01	-0,01	0,06	0,06	0,15	0,16	-0,20																	
10	life satisfaction (11-point Likert)	7,25	1,58	0,17	0,44	-0,03	0,13	0,11	0,17	0,14	0,30	-0,01																
11	married (1/0)	0,65	0,48	0,12	0,02	-0,05	-0,04	0,07	-0,02	0,01	-0,02	-0,05	0,05															
12	children in household (1/0)	0,40	0,49	0,03	0,03	0,02	-0,03	0,00	0,02	0,00	-0,02	-0,02	0,02	0,30														
13	# years of education	13,06	2,76	0,39	0,06	0,02	0,14	-0,11	-0,02	0,00	0,07	-0,01	0,10	-0,02	-0,02													
14	age	43,37	10,55	0,21	-0,02	-0,10	0,03	0,11	-0,05	0,02	0,01	-0,03	-0,02	0,35	-0,18	0,03												
15	yearly GDP change	3,79	0,93	0,02	-0,02	0,01	-0,03	-0,01	-0,02	-0,04	0,00	-0,01	-0,03	0,00	0,02	-0,03	-0,04											
16	# years of working experience	19,41	10,70	0,19	-0,03	-0,11	-0,01	0,13	-0,04	-0,01	0,01	-0,12	-0,03	0,31	-0,22	-0,13	0,90	-0,02										
17	# years with same company	11,29	9,93	0,30	-0,03	-0,14	-0,01	0,04	-0,04	-0,03	0,02	-0,10	0,04	0,20	-0,12	-0,03	0,52	-0,01	0,59									
18	self-employed (1/0)	0,11	0,31	0,06	0,05	0,00	0,10	0,01	0,06	0,00	0,04	-0,07	0,02	0,02	0,00	0,10	0,12	-0,01	0,09	-0,03								
19	region (ger, Bundesland)	7,94	3,86	-0,18	-0,03	-0,01	-0,02	0,02	-0,02	0,00	-0,02	0,02	-0,09	-0,04	-0,03	0,02	-0,01	0,20	0,03	-0,04	-0,01							
20	year of observation	2008	3,29	-0,12	0,04	0,13	0,02	-0,07	0,02	-0,01	0,06	0,07	0,06	-0,11	-0,02	-0,01	-0,01	-0,11	-0,06	-0,10	0,00	0,00						
21	organizational size (categorical)	2,15	0,84	0,22	-0,03	-0,05	-0,03	-0,04	-0,02	-0,04	0,03	-0,08	0,03	-0,01	0,00	0,04	-0,04	0,00	0,00	0,17	-0,40	-0,04	0,00					
22	managerial position (1/0)	0,54	0,50	0,32	0,05	0,00	0,08	-0,05	0,01	-0,01	0,05	0,05	0,10	0,00	-0,01	0,38	0,00	0,00	-0,03	0,12	-0,35	-0,02	-0,01	0,25				
23	part-time job (1/0)	0,23	0,42	-0,19	0,01	0,01	0,01	-0,01	0,06	0,10	-0,12	0,48	0,01	0,14	0,16	-0,06	0,07	0,00	-0,05	-0,07	-0,10	-0,07	0,09	-0,10	-0,05			
24	public sector (1/0)	0,09	0,29	0,16	0,04	-0,07	0,02	-0,06	0,00	-0,03	0,02	-0,03	0,07	0,04	0,00	0,25	0,07	-0,02	0,05	0,22	-0,11	-0,07	-0,03	0,16	0,12	-0,03		
25	occupational prestige	45,70	13,18	0,46	0,07	0,01	0,14	-0,08	0,00	-0,02	0,07	-0,05	0,13	0,00	-0,01	0,61	0,05	-0,01	-0,02	0,10	0,09	-0,02	-0,03	0,10	0,45	-0,11	0,24	
26	occupation, 2-digit	69,52	19,08	0,06	0,05	0,01	0,11	-0,03	0,09	0,09	-0,04	0,37	0,05	-0,01	-0,03	0,27	0,07	-0,04	-0,04	-0,02	0,02	-0,02	0,04	0,02	0,24	0,23	0,18	0,21

Notes: n = 11,525 respondents;  
standardized values for personality dimensions shown.

## Measures

*Interorganizational job change* was coded 1 when individuals reported changing employers, 0 otherwise. As the survey allows for differentiating between self-initiated and non-self-initiated turnover, I only analyzed self-initiated interorganizational job changes.

*Individuals' personality* was measured using the five factor model personality traits (Costa, & McCrae, 1985), which is a parsimonious model of five dimensions of personality that explain differences among individuals' dispositions: openness to experience, conscientiousness, extraversion, agreeableness, and emotional stability. In GSOEP, individuals' personality was measured using the short form of the Big Five Inventory (BFI-S; Gerlitz, & Schupp, 2005), which consists of 15 questions, i.e. three questions per personality dimension. The BFI-S strongly correlates with the full version of the Big Five Inventory (Soto, & Luhmann, 2013) and shows acceptable levels of reliability and validity (Hahn et al., 2012). It uses a 7-point Likert Scale ranging from 1 (*Does not apply to me at all*) to 7 (*Applies to me perfectly*).

*Openness to experience* describes individuals' propensity to make independent decisions, degree of initiative and control, and their intellectual curiosity, i.e. perceptive or reflective; imagination, and broad-mindedness (John, & Srivastava, 1999). Internal consistency, measured with the Cronbach's alpha ( $\alpha$ ), amounts to 0,63. *Extraversion* ( $\alpha = 0,68$ ) describes a person's tendency to seek stimulation and novelty. It aims to capture qualities, such as gregariousness, talkativeness, excitement seeking, and positive emotions.

I also included the remaining three personality dimensions in the analysis. *Conscientiousness* ( $\alpha = 0,64$ ) describes the extent to which an individual is hardworking, organized, and dependable as opposed to lazy, disorganized, and unreliable. It measures individuals' tendency to follow rules and schedules and is related to the need for achievement. *Agreeableness* ( $\alpha = 0,53$ ) describes qualities, such as modesty, tendermindedness, trust, and altruism. It incorporates the willingness to help others and to act in accordance with the interests of others, and concerns the degree to which an individual is cooperative, warm, and agreeable versus cold, disagreeable, and antagonistic. *Emotional stability* ( $\alpha = 0,61$ ) describes the degree to which an individual may be termed calm, self-confident, and cool rather than tense, insecure, anxious, depressed, and emotional. A person low in this dimension is considered more temperamental or easily angered and tends to be self-conscious and unsure (Lebowitz, 2016).

*Real hourly gross salaries.* Each year, individuals reported their nominal annual gross base salaries in Euros. To account for any inflationary effects and economic cycles, I first used the yearly consumer price indices to convert nominal values to their respective real values. Next, using the number of hours worked in a given year, I scaled down their real annual gross salaries to real hourly gross salaries. Lastly, because the variable was skewed right, I transformed it using the natural logarithm function.

*Job satisfaction.* If employed, respondents were asked how satisfied they are with their current jobs. Respondents had to rate their answer on an 11-point Likert scale ranging from 0 (*completely dissatisfied*) to 10 (*completely satisfied*).

*Control variables.* To alleviate potential endogeneity issues, I included a set of sociodemographic and employment related variables. The list of sociodemographic variables includes *gender* (binary, 1 = female), *marital status* (binary, 1 = married), *having children in household* (binary, 1 = child present in household), *years of education*, *age*, and *satisfaction with life* (11-point Likert scale ranging from 0 = completely dissatisfied to 10 = completely satisfied). The list of employment related control variables includes *years of working experience*, *length of stay with the organization*, and *self-employment* (binary, 1 = self-employed), *part-time employment* (binary, 1 = part-time), *public sector position* (binary, 1 = public sector), *managerial job position* (binary, 1 = managerial responsibility), *Treiman's*

*occupational prestige scale*, *organizational size* (ordinal, 0 = small, 1 = medium, 2 = large), a set of *occupational sector* dummy covariates. I also control for *gross domestic product growth*, *region of living*, and *year fixed-effects*. Given the aim of this study and the nature of both household surveys, all predictor and control variables were lagged by one year with regard to the outcome variable.

## Analysis

I used the fully observed recursive mixed process model (Roodman, 2011), a class of simultaneous-equation systems in which the errors share a multidimensional distribution. The full observability means that outcome variables can also appear as predictor variables, therefore, allowing for linked functions. The recursivity underlines that linked functions can be organized in stages. Both features together facilitate the implementation of a mediation analysis, which is achieved using seemingly unrelated regressions. Lastly, the mixed process describes how each equation can have different kinds of dependent variables, including continuous, binary, ordinal, and interval-censored. As a result, compared with other traditional analysis of mediation, such as path analysis (Boker, & McArdle, 2014), the fully observed recursive mixed process model is in general more efficient, featuring a simultaneous estimation system that accounts for the full covariance structure and features estimation techniques adjustable to the outcome type of each linked function. Consequently, compared with other estimation techniques typically used in mixed process models (e.g., diagonal weight least squares), standard errors are not inflated.

The analysis was performed using the *cmp* package specified for the Stata software, including full information maximum likelihood (FIML) estimator (Roodman, 2011). The model included three endogenous variables: real hourly salaries and job satisfaction as mediators; and interorganizational job change as the main outcome. To estimate the linked equations in serial mediation, I used the ordinary least square model for the real hourly salaries (first mediator), ordered probit for job satisfaction (second mediator), and probit model for interorganizational job change. Certainly, calculating the bias corrected confidence intervals would be a preferred approach; however, bootstrapping confidence intervals for this type of model is currently not available in Stata, MPLUS, or R.

To compare the size effects of personality dimensions on turnover between this and Zimmerman's (2008) studies, I use Cumming and Finch's (2005) recommendation on the comparison of the estimates' 95% confidence intervals (CIs). Specifically, whenever 95% confidence intervals do not overlap, conventional knowledge suggests that these effects are statistically different. However, it is a common misconception that a predictor has similar effects whenever confidence intervals overlap. As with all null-hypothesis significance testing, the true answer depends on the chosen significance level. Cumming and Finch's (2005) study shows that at a significance level of  $\alpha < 0,01$ , the confidence intervals of the two comparing effects should indeed not overlap. Yet, the overlapping 95% CIs will still be statistically different at the traditional significance level of  $\alpha \leq .05$ , contingent upon their confidence intervals are not overlapping for more than half the average margin of error. Moreover, the use of this calculation dictates that the margins of error, i.e. the length of one arm of a CI and an indication of precision, between the comparing effects must not differ by more than a factor of two.

## Results

The analysis was conducted in three stages that correspond to the two mediators (real hourly salaries and job satisfaction) and outcome (turnover). In the first stage (tab. 2), I observed that only agreeableness and emotional stability predicted salary outcomes. Respondents with a one standard deviation higher agreeableness had lower salaries (Column 1:  $\beta = -0,03$ ;  $p < 0,001$ ) and respondents higher in emotional stability had higher salaries (Column 1:  $\beta = 0,02$ ;  $p < 0,001$ ).

Table 2

Fully observed recursive mixed process model: main results

Outcome:	salary	job satisfaction	turnover
	(1)	(2)	(3)
Openness to experience	0,00 (0,01)	0,02 (0,02)	0,05 (0,03)
Conscientiousness	0,00 (0,01)	0,15*** (0,02)	0,05 (0,03)
Extraversion	0,00 (0,01)	0,05*** (0,01)	0,07* (0,03)
Agreeableness	-0,03*** (0,01)	0,08*** (0,02)	-0,03 (0,03)
Emotional stability	0,02*** (0,01)	0,14*** (0,02)	0,05 (0,03)
ln(real hourly salary)		0,06 (0,24)	-0,02 (0,06)
job satisfaction			-0,16*** (0,05)
Gender (1 = female)	-0,13*** (0,01)	0,00 (0,04)	-0,16** (0,05)
Married (0/1)	0,02 (0,01)	-0,02 (0,03)	0,02 (0,05)
Children in household (0/1)	0,07*** (0,01)	0,05 (0,03)	0,06 (0,04)
# years of education	0,10*** (0,01)	-0,04 (0,03)	0,06* (0,03)
Age	0,01 (0,02)	-0,01 (0,04)	-0,33*** (0,08)
Satisfaction with life	0,00*** (0,00)	0,00*** (0,00)	0,00*** (0,00)
# years of working experience	0,07*** (0,01)	0,00 (0,04)	0,16* (0,07)
# years with the same organization	0,07*** (0,00)	-0,05* (0,02)	-0,28*** (0,03)
Self-employed (0/1)	0,13*** (0,02)	0,10 (0,05)	-0,24** (0,08)
Part-time employment (0/1)	-0,06*** (0,01)	-0,01 (0,03)	0,02 (0,06)
Public sector position (0/1)	-0,03 (0,02)	0,02 (0,05)	-0,51*** (0,13)
Managerial position (0/1)	0,10*** (0,01)	0,05 (0,04)	-0,03 (0,05)
Occupational prestige	0,13*** (0,01)	-0,04 (0,04)	0,11 (0,07)
Company size	Included	Included	Included
GDP yearly change	0,02 (0,02)	-0,08 (0,05)	0,15 (0,09)
Occupation fixed-effects	Included	Included	Included
Region fixed-effects	Included	Included	Included
Year fixed-effects	Included	Included	Included

Notes: standardized regression coefficients are reported with standard errors in brackets. For output brevity, categorical variables with two or more states are not reported in full; \* p < 0,05; \*\* p < 0,01; \*\*\* p < 0,001.

The second stage analyzed the effects of personality on job satisfaction. I found that individuals higher in extraversion (Column 2:  $\beta = 0,05$ ;  $p < 0,001$ ) and higher in emotional stability (Column 2:  $\beta = 0,14$ ;  $p < 0,001$ ) were more satisfied with their jobs. Moreover, individuals higher in conscientiousness (Column 2:  $\beta = 0,15$ ;  $p < 0,001$ ) or higher in agreeableness (Column 5:  $\beta = 0,08$ ;  $p < 0,001$ ) also had higher job satisfaction.

Hypotheses 1 asserted that extraversion positively predicts turnover. Results corroborate this as extraversion positively predicts turnover behavior (Column 3:  $\beta = 0,07$ ;  $p = 0,01$ ; 95% CI = [0,02; 0,13]). For comparison, in Zimmerman's (2008) predominantly North American study, the effect of extraversion on

actual turnover was insignificant ( $\beta = -0,04$ ; 95% CI = [-0,10; 0,02]). As a result, I find full support for Hypothesis 1 and conclude that extraversion has a positive effect on turnover.

To evaluate if the effects of extraversion are statistically different between this and Zimmerman's studies, I observed if and to what extend their confidence intervals overlap (fig. 2). First, I observed that their margins of error are similar in size (0,05 in this study and 0,06 in Zimmerman's) and that their confidence intervals touch end to end. Drawing on Cumming and Finch (2005), this observation implies that these effects are statistically different at the significance level of  $\alpha \leq 0,01$ .

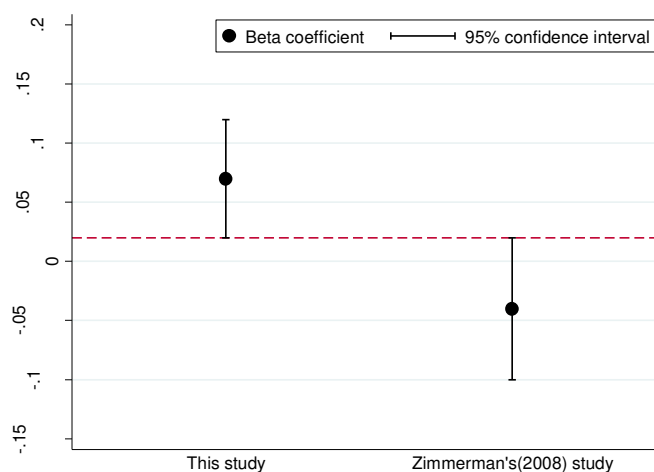


Fig. 2. Effects of extraversion on turnover between studies

Hypothesis 2 asserted that openness to experience positively predicts turnover. However, I did not find evidence that openness to experience predicts turnover (Column 3:  $\beta = 0,05$ ;  $p = 0,07$ ; 95% CI = [0,00; 0,11]). For comparison, Zimmermann's study found a positive effect of openness to experience on turnover ( $\beta = 0,10$ ; 95%

CI = [0,03; 0,17]). Looking at their confidence intervals' overlap (fig. 3), I cannot conclude that these effects are different across countries, despite their differing predictive power. Therefore, I do not find support for Hypothesis 2.



Fig. 3. Effects of openness to experience on turnover between studies

## Discussion and implications

The impact of personality on turnover was primarily analyzed using data sampled in North America (Zimmermann, 2008): Well over 82% of studies used in previous meta-analysis were conducted in North America. It therefore remains an open question the extent to which these results can be generalized to other cultural and business contexts. Drawing on the cultural differences among countries (Hofstede, 2001), this study's findings challenge the aforementioned generalizability of previous findings. Drawing on value congruency theory, I show that the alignment between personal and societal values, and societal and labor market values explain the heterogeneous effects of personality on turnover.

With a focus on extraversion and openness to experience, I used social capital theory (Seibert et al., 2001) and value congruency theory (Molina, 2016), and argued that social ties positively contribute to turnover in cultures high in long-term orientation (Hofstede, 2001) as individuals high in extraversion are more likely to establish and manage external social ties, making them particularly prone to changing employers. Furthermore, in line with previous and unanimous research, I expected openness to experience to positively predict turnover, regardless of cultural context.

As expected, extraversion positively predicts turnover. Comparing the size effects between this and Zimmerman's (2008) meta-analysis revealed that these effects were statistically significant in size at the significance level of  $\alpha \leq .01$ . However, I did not find evidence that openness to experience predicts interorganizational turnover. There are two possible explanations: First, items used to measure openness to experience in the German survey by and large do not capture individuals' self-directed career development. For example, in the German survey, openness to experience measures a person's imagination, originality, and art appreciation. Put differently, none of these items measure a person's appreciation of, or desire to engage in, different working experiences. In face of previous research, this cause is however less likely: Compared with a person low in openness to experience, a person high in this dimension is 64% more likely to exhibit the hobo syndrome, i.e. undergo frequent interorganizational job changes (Woo, 2011). A more likely cause of the insignificant effect

in this study might therefore be due to the study's covered time horizon as it primarily covers the period including and immediately after the recent financial crisis. Facing financial and labor market uncertainty, a person would therefore be reluctant to undergo employer changes in order to satisfy an intrinsic desire for novelty and would prefer employment and stable income (Wynen, & Op de Beeck, 2014). This would also explain the non-significant differences in size effects of openness to experience on employee turnover between this and Zimmerman's study.

This study extends the previous literature by identifying the boundary condition that explains the mixed effects of extraversion on turnover. In so doing, it highlights the limited generalizability of recent meta-analytic study outside the North American cultural context and calls for the consideration of societal values when analyzing the effects of personal values in contemporary labor markets. Accounting for the boundary condition might help managers and human resources professionals reduce the tremendous financial losses associated with employee turnover and help with more efficient planning of internal labor markets.

## Practical implications

The current research strengthens the importance of analyzing the effects of personality on turnover within a context. Particularly, societal values significantly offset expectations regarding effects of extraversion on employee turnover. For managers and human resources professionals, these findings have two important implications. First, in societies high in long-term orientation, individuals high in extraversion are more likely to change employers. However, some individuals' desire for an interorganizational job change might be inhibited given labor market and financial instabilities, which is reflected in the absence of effects of openness to experience on turnover. These findings prove important to organizations that continuously manage their internal labor force. Moreover, employee turnover is not a localized challenge for organizations, but it has contagious effects that result in even greater financial losses (Hancock et al., 2017). In the same vein, positive turnover rates are also associated with decreases in customer satisfaction, productivity and human capital, future revenue growth, and profitability (Zimmerman, 2008).



Second, these results are particularly of interest to multinational organizations. As *Levy and colleagues (2010, p.20)* noted, “as companies expand globally, corporate culture often lags behind; it frequently remains too headquarters-centric [and] core values often originate at corporate headquarters and fail to reflect and incorporate diverse cultural influences”. The person-environment fit literature (*Cable, & Edwards, 2004*) explain how either congruency in values or fulfilment of needs trigger a person’s higher job satisfaction and therefore decrease likelihood of turnover. However, as local employees’ beliefs, standards, and values are reflected in their societal values, multinational organizations should assess employees’ turnover probability with regard to the local national societal values and not that of the corporate and societal values that originate in organizations’ headquarters.

The practical benefits of this study also extend to researchers. Certainly, previous studies already acknowledge the importance of using cultural context in explaining a person’s changes in personality over time (*Helson et al., 2002*). However, the current study also highlights personality’s heterogeneous predictive power that originates from diverse societal values. As a result, incorporating context might shed more light on the research areas that suffer from mixed results. Accordingly, this would provide a richer understanding of the underlying processes, which would then contribute to a greater transferability and applicability of research into practice.

## Strengths and limitations

This study is the first to analyze the effects of personality on turnover using a within-individual unfolding and holistic model. Unlike *Zimmermann’s (2008)* seminal meta-analysis, I observe individuals throughout all processes. Moreover, I use a large national household survey rich on sociodemographic and employment related data and identify a boundary condition grounded in societal values that might explain mixed results found in previous literature. As a result, this study can more likely draw stronger inferences on the effects of personality on turnover. Lastly, this study introduces the human resources and career literatures with a statistical approach helpful in assessing the size effects across independent samples.

Some limitations of the study must be acknowledged. First, this study does not directly test for the cultural differences among countries. However, the study uses detailed person- and job-specific characteristics, which leave little room for an alternative explanation of the mixed results. Second, I compare the results in this study with those of *Zimmermann (2008)*. However, the efficiency of this comparison depends on the generalizability of *Zimmermann’s* study outside the North American societal and business values and contexts. Certainly, 15 out of 86 studies covered in *Zimmermann’s* meta-analysis include data sampled outside of North America and across 13 countries, where majority of these countries are only represented with a single study. It therefore remains an open question the extent to which *Zimmermann’s* meta-analysis can warrant generalizability of its results across all included countries. Third, compared with *Zimmermann’s* study, this study lacks data on job complexity and individuals’ performances. Regarding the former, this limitation might be partially alleviated due to the use of employment related information (hierarchical position, occupational prestige, type of employment, and organizational size) as this might be indicative of individuals’ job complexity. Fourth, the boundary condition relies on the assumption that in contemporary labor markets and cultures high in long-term orientation, individuals high in extraversion are more apt to build external social networks. Because the data availability precludes me from testing this directly, further research examining this relationship is required to corroborate this argument. Nonetheless, this limitation is of minor concern because this study still finds a positive effect of extraversion on employee turnover, despite also including a period that covers the recent financial crisis when employees are even

more likely to maintain stable employment in current organization and build stronger internal social ties.

## Future research

Using a sample of 132,515 individuals from the United States and Canada, *Srivastava and colleagues (2003)* challenged the plaster hypothesis of the unchanging personality after the age of 30. Instead, they found that personality changes well into individuals’ senior ages. For example, extraversion slowly increases (decreases) over time for men (women). This implies that in cultures high in long-term orientation, men but not women would become more apt to change employers over time. However, the hobo syndrome literature (*Ghiselli, 1974*) that looks into the behavior of frequent interorganizational job changers receives mixed empirical support (*Dlouhy, & Biemann, 2018; Munasinghe & Sigman, 2004*). Relating this stream of literature with personality research, *Woo (2011)* found that the hobo syndrome is characteristic of individuals’ high in openness to experience but not extraversion, and their turnover propensity decreases over time. Consequently, despite the increasing extraversion over time, men’s propensity to change employers might actually decrease over time. This suggests that either the predictive validity of extraversion for men decreases over time or that this relationship is offset by some other construct, such as family obligations or desire for employment stability.

## Conclusion

This study sought to test the generalizability of findings from a predominantly North America focused meta-analysis on the effects of extraversion and openness to experience on turnover in Germany. Drawing on value congruency theory, I argue that in countries high in long-term orientation, given the contemporary labor market requirements, individuals high in extraversion are more likely to use their external social networks to facilitate interorganizational turnover. Using a large national household survey, I found that extraversion has a positive effect on turnover, however, openness to experience does not predict turnover. To conclude, this study introduces a new boundary condition – societal values – that helps to redress mixed effects of extraversion on turnover in literature, gives researchers a methodological framework beneficial in comparing size effects across studies, and helps managers and human resources professionals to adjust their expectations regarding employee turnover.

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