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Preregistration for Quantitative Research in Psychology Template

Orange = heading

Not all of the following are
relevant for every study;
registries will make fields

Title and title page

Name	Description
Title	Leaders as role models: Effects of leader job crafting on team and employee job crafting.
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Date of Preregistration	15/3/2021
Versioning information	
Identifier	
Estimated duration of project	2 Years
IRB Status (Institutional Review Board/Independent Ethics Committee/Ethical Review	Ethics Committee Johannes Gutenberg-University Mainz, Institute of Psychology: 2020-JGU-psychEK-S025
Conflict of Interest Statement	The authors declare that the research was conducted in the absence of any commercial or financial relationships that could
Keywords	job crafting, leadership, role models, team crafting, emotional yes
Data accessibility statement and planned repository	Data available upon email request by member of scientific community
Optional: Code availability	yes
Optional: Standard lab practices	

Abstract (150 words)

Name	Description/Instructions: See instructions in relevant sections below
Background	(See introduction I1)
Objectives and Research questions	(See introduction I2)
Participants	(See methods M4)
Study method	(See methods M10-14)

Introduction (no word limit)

Name	Description/Instructions
Theoretical background	proactive behavior of employees to shape, mold, and change their jobs (Tims, Bakker & Derks, 2012; Tims & Bakker, 2010; Wrzesniewski & Dutton, 2001). While Wrzesniewski and Dutton (2001) refer to the three dimensions (1) task crafting (2) social, and (3) cognitive crafting, Tims and colleagues (2010) have applied the construct to the Job Demands-Resources Model and indicate four dimensions. The four dimensions are (1) increasing structural job resources, (2) increasing social job resources, (3) increasing challenging job demands, and (4) decreasing hindering job demands. Our research takes a closer look at Tims and colleagues' (2010) conceptualization. Meta-Analysis showed, that Job Crafting as a whole is positively related to work engagement, job satisfaction, job performance, person-job-fit, meaningfulness, psychological well-being, and other constructs (Rudolph et al., 2017, Lichtenthaler & Fischbach, 2019, Wang et al., 2020, Frederick & VanderWeele, 2020). In addition, job crafting is negatively connected with burnout, job strain, negative affect, and psychological distress (Zhang et al., 2019; Hu et al., 2020). Some studies already focused on team and leadership relations. For example, there are indications that employees reproduce the job crafting behaviors of their leaders (Xin et al., 2020). The study focused on the social learning theory and examined the effects of 64 teams. The team leaders' job crafting showed a positive link to team members' job crafting. Moreover, empowering leadership was used as a mediator, to explain these effects. But it resulted, that against prediction, this leadership style does not support predictions based on social learning theory. The aim of the study is to analyze the interrelationships of job crafting by leaders and their teams. The focus is on the four job crafting dimensions according to Tims and Bakker (2010) and the time-spatial crafting according to Wessels (2017). Based on a study by Xin et al. (2020), it is assumed that each dimension of job crafting (Tims & Bakker, 2010) shown by leaders is positively related to the team members' job crafting. Moreover, the leadership identification is tested as a moderator. It is examined
Objectives and Research question(s)	

Hypothesis (H1, H2, ...)	H1: Leaders Job Crafting (a) increasing structural resources, (b) increasing social resources, (c) decreasing hindering demands, (d) increasing challenging demands, (e) increasing time crafting, (f) increasing spatial crafting is positively related to team members job crafting on the matching dimensions
	H2: The relationship between leaders' job crafting (a-f) and team members matching job crafting (a-f) is moderated by identity leadership. With high identity the relationship is stronger.
Exploratory research questions (if applicable; E1, E2,)	

Method

Name	Description/Instructions
Time point of registration	Registration prior to accessing the data
Proposal: Use of pre-existing data (re-analysis or secondary data analysis)	no
Sampling Procedure and Data Collection	
Sample size, power and precision	<p>1) Target size: 200 teams with a total of around 700 participants.</p> <p>2) Simulation studies suggest that the sample size at Level 2 is more relevant than the average group size for estimating statistical power (Scherbaum & Ferreter, 2009; Snijders, 2005). Results of simulation studies are consistent that size of 100 or more units at Level 2 leads to unbiased estimates for the calculation of more complex hypotheses (Moineddin et al., 2007; Scherbaum & Ferreter, 2009). Therefore, a minimum of 100 teams at the third time point is targeted for the present study. This will be achieved by recruiting a minimum of 200 teams to participate in the study and attending the first survey time point. Due to the complex design involving a large number of surveys for a single individual, some dropout is to be expected. Griffin and Patrick (2015) report that approximately 50-70% of individuals who completed the entry questionnaire at the beginning of each survey week participated in subsequent diary questionnaires.</p>

Participant recruitment, selection, and compensation	(a) Recruitment through cold calling to companies and authorities in Germany (b) age: 18-70 years, German-speaking, at least 50% part-time. (e) Participants will be provided with a report on the results after completing the study. Participating companies with a high participation rate will be offered feedback on the results of the characteristics of work in the context of a risk assessment of mental stress. As an incentive, 1 euro will be donated to the Irrsinnig Menschlich e.V. association for each complete participation at all three survey dates.
How will participant drop-out be handled?	The data of participants who do not fit the criteria will be deleted from the dataset.

Masking of participants and researchers	Pseudonymized storage for employees and leaders. A coding list is kept on which the e-mail addresses of all participants are recorded with a code for the person and a code for the team affiliation. Based on this, a participant-specific URL is created for each of the three surveys. The responses are anonymized, and the e-mail address is not associated with the data collected. The coding list is stored for a period of three months, so that over this period the data are available in pseudonomized form. Once the coding list is deleted, the data is available in anonymized form and will be stored for at least 10 years after the end of the survey (until 2031).
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Data cleaning and screening	Participants with more than 50% of missing values will be removed from the analyses.
How will missing data be handled?	The remaining missing data will not be imputed, but Full-Maximum Likelihood procedures will be considered for multi-wave analyses.

Other information (optional)

Name	Description/Instructions
Conditions and design	
Type of study and study design	This is a longitudinal questionnaire survey using an online tool (SoSci Survey) with a nested data design (teams and their leaders). The survey will take place at three-time points with an interval of 4 weeks.
Randomization of participants and/or experimental materials	

leadership level (independent variable) and at employee level (dependent variable)(Tims, Bakker & Derks, 2012 - German version: Lichtenthaler & Fischbach, 2016) with the different dimensions.

Hypotheses 1e-f are tested using the time-spatial crafting items at leader level (independent variable) and employee level (dependent variable) by Wessels et al. (2017).

Regarding the moderation hypotheses 2a-f the Identity Leadership Inventory by Van Dick et al. (2018) with the dimension Identity prototypicality (moderator) is used.

Measured variables,
manipulated variables,
covariates

Additional Analyses are planned using the following questionnaires:

Autonomy: Morgeson & Humphrey (2006), German version: Stegmann (2010);
cognitive demands: Bova et al., 2015; De Jonge et al., 2004;
time pressure: Semmer et al., 1998;
emotional demands: VanVeldhoven & Meijman (1994), Van Veldhoven et al., 2002;
feedback from others: Morgeson & Humphrey (2006), German version: Stegmann (2010),
social support from colleagues: Rimann & Udris, 1997;
role conflict: Bowling et al. (2017); role ambiguity: Bowling et al. (2017);
flexibilization Poethke et al. (2019);
initiated interdependence: Morgeson & Humphrey (2006), German version von Stegmann (2010); received

Study Materials

Study Procedures

The longitudinal survey is conducted at three points in time, each one month apart. The questionnaire consists of about 200 items at all time points. The objective is to survey leaders at different hierarchical levels as well as their team members from various companies, authorities and offices in Germany. At t1 a sample of 700 persons (level 1) from different 200 teams (level 2) is to be reached. After dropouts in the course of the longitudinal survey, we expect a final sample of 500 persons.

Other information (optional)

Analysis plan (NOTE: If this varies by hypothesis, repeat analysis plan for each)

Name	Description/Instructions
Criteria for post-data collection exclusion of participants, if any	Participants must be employed and working at least 50% part-time. Participants who do not meet these requirements will be excluded. Participants with more than 50% of missing values will be removed from the analyses.

Criteria for post-data collection exclusions on trial level (if applicable).	If the information provided for weekly hours is implausible (e.g. 100 hrs/week) or if different and contradictory information is provided across time points, the participants will be excluded.
Data preprocessing	First, the scales will be conducted as preferred in the provided scales.
Reliability analysis (if applicable).	The reliability will be conducted via cronbachs alpha.
Statistical models (provide for each hypothesis if varies).	We use the hierarchically structured data with teams as level 1 and leadership as level 2 and use the full-information likelihood method. To make the best use of the collected data, we use multilevel structural equation modeling (MSEM) (Preacher et al., 2016) to compute. To further test the moderation hypotheses, we adopt the remedy that uses random latent moderated structural equations (LMS) for unbiased tests of multilevel moderation and use the doubly latent sampling of person method. We will compute the hypotheses using Mplus, version 7.4 (Muthén & Muthén, 1998-2015).
Inference criteria	For each hypothesis the p values will be used. A p value below .05 will be considered significant.
Exploratory analysis (optional)	Several exploratory analyses are performed to confirm further reinforcing or buffering effects. In the process, further moderation is added to the hypotheses specified in b). These concern the variables specified in M12.
Other information (optional)	

Other information, optional (NOTE: If needed, multiple lines with other information can be included)

Name	Description/Instructions
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Other information (optional)

References

- Bova, N., De Jonge, J., & Guglielmi, D. (2015). The demand-induced strain compensation questionnaire: A cross-national validation study. *Stress and Health*, 31(3), 236-244.
- Bowling, N. A., Khazon, S., Alarcon, G. M., Blackmore, C. E., Bragg, C. B., Hoepf, M. R., ... & Li, H. (2017). Building better measures of role ambiguity and role conflict: The validation of new role stressor scales. *Work & Stress*, 31(1), 1-23.

- de Jonge, J., Le Blanc, P. M., Peeters, M. C., & Noordam, H. (2008). Emotional job demands and the role of matching job resources: A cross-sectional survey study among health care workers. *International Journal of Nursing Studies* , 45(10), 1460-1469.
- Dempster, A. P., Laird, N. M., & Rubin, D. B. (1977). Maximum likelihood from incomplete data via the EM algorithm. *Journal of the Royal Statistical Society : Series B (Methodological)*, 39(1), 1-22.
- Frederick, D. E., & VanderWeele, T. J. (2020). Longitudinal meta-analysis of job crafting shows positive association with work engagement. *Cogent Psychology* , 7(1), 1746733.
- Griffin, J. & Patrick, M. E. (2015). Understanding participation in a web-based measurement burst design: Response metrics and predictors of participation. *Survey Practice* , 8(2).
<https://doi.org/10.29115/SP-2015-0011>
- Hu, Q., Taris, T. W., Dollard, M. F., & Schaufeli, W. B. (2020). An exploration of the component validity of job crafting. *European Journal of Work and Organizational Psychology* , 29(5), 776-793.
- Lichtenthaler, P. W., & Fischbach, A. (2016). The conceptualization and measurement of job crafting. *Zeitschrift für Arbeits-und Organisationspsychologie A&O [Journal of Industrial- and Organizational Psychology]* . 60(4), 173-186.
- Lichtenthaler, P. W., & Fischbach, A. (2019). A meta-analysis on promotion-and prevention-focused job crafting. *European Journal of Work and Organizational Psychology* , 28(1), 30-50.
- Moineddin, R., Matheson, F. I., & Glazier, R. H. (2007). A simulation study of sample size for multilevel logistic regression models. *BMC medical research methodology* , 7(1), 1-10.
- Morgeson, F. P., & Humphrey, S. E. (2006). The Work Design Questionnaire (WDQ): developing and validating a comprehensive measure for assessing job design and the nature of work. *Journal of Applied Psychology* , 91(6), 1321-1339
- Muthén, L. K., & Muthén, B. O. (1998-2015). Mplus user's guide (7th ed.). Muthén & Muthén.
- Rimann, M., & Udris, I. (1997). Subjektive arbeitsanalyse: der fragebogen SALSA. Unternehmen arbeitspsychologisch bewerten. Ein Mehr-Ebenen-Ansatz unter besonderer Berücksichtigung von Mensch, Technik und Organisation, Hochschulverlag Zürich, 1, 281-298.

Poethke, U., Klasmeier, K. N., Diebig, M., Hartmann, N., & Rowold, J. (2019). Entwicklung eines Fragebogens zur Erfassung zentraler Merkmale der Arbeit 4.0. *Zeitschrift für Arbeits- und Organisationspsychologie A&O*. [Journal of Industrial- and Organizational Psychology]. 63, 129-151.
<https://doi.org/10.1026/0932-4089/a000298>

Preacher, K. J., Zhang, Z., & Zyphur, M. J. (2016). Multilevel structural equation models for assessing moderation within and across levels of analysis. *Psychological methods*, 21(2), 189-205.
<http://dx.doi.org/10.1037/met0000052>

Rudolph, C. W., Katz, I. M., Lavigne, K. N., & Zacher, H. (2017). Job crafting: A meta-analysis of relationships with individual differences, job characteristics, and work outcomes. *Journal of Vocational Behavior*, 102, 112-138.

Scherbaum, C. A., & Ferreter, J. M. (2009). Estimating statistical power and required sample sizes for organizational research using multilevel modeling. *Organizational Research Methods*, 12(2), 347-367.

Semmer, N. K., Zapf, D., & Dunckel, H. (1998). Instrument zur Streßbezogenen Arbeitsanalyse ISTA Version 6.0. Bern (Frankfurt, Flensburg): Psychologisches Institut Bern.

Snijders, T. A. (2005). Power and sample size in multilevel linear models. *Encyclopedia of statistics in behavioral science*.

Stegmann, S., van Dick, R., Ullrich, J., Charalambous, J., Menzel, B., Egold, N., & Wu, T. T. C. (2010). Der work design questionnaire. *Zeitschrift für Arbeits- und Organisationspsychologie A&O*. [Journal of Industrial- and Organizational Psychology]. 54(1), 1-28.

Tims, M., & Bakker, A. B. (2010). Job crafting: Towards a new model of individual job redesign. *SA Journal of Industrial Psychology*, 36(2), 1-9.

Tims, M., Bakker, A. B., & Derks, D. (2012). Development and validation of the job crafting scale. *Journal of vocational*

van Dick, R., Lemoine, J. E., Steiner, N. K., Kerschreiter, R., Akfirat, S. A., Avanzi, L., Dumont, K., Epitropaki, O., Fransen, K., Giessner, S., Gonzalez, R., Kark, R., Lipponen, J., Markovits, Y., Monzani, L., Orosz, G., Pandey, D., Roland-Lévy, C., Schuh, S., Sekiguchi, T., Song, L., Stouten, J., Tatachari, S., Valdenegro, D., Veldhoven, M. V., & Meijman, T. (1994). Het meten van psychosociale arbeidsbelasting met een vragenlijst: de vragenlijst beleving en beoordeling van de arbeid (VBBA). van Veldhoven, M. J. P. M., Meijman, T., & Broersen, S. (2002).

Handleiding VBBA: onderzoek naar de beleving van psychosociale arbeidsbelasting en werkstress met behulp van de vragenlijst beleving en beoordeling van de arbeid. Stichting Wang, H., Li, P., & Chen, S. (2020). The impact of social factors on job crafting: A meta-analysis and review. *International*

wessels, C. (2017). Flexible working Practices: How Employees Can Reap the Benefits for Engagement and Performance (No. 118).
Wessels, C., Schippers, M. C., Stegmann, S., Bakker, A. B., van Baalen, P. J., & Proper, K. I. (2019). Fostering flexibility in the Revisioning employees as active crafters of their work. *Academy of management review*, 26(2), 179-201.

Xin, X., Cai, W., Zhou, W., Baroudi, S. E., & Khapova, S. N. (2020). How can job crafting be reproduced? Examining the trickle-down

Zhang, F., & Parker, S. K. (2019). Reorienting job crafting research: A hierarchical structure of job crafting concepts and