Author’s response to reviews

Title: Interactional justice at work is related to sickness absence: a study using repeated measures in the Swedish working population

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Author’s response to reviews:

Thank you very much for the opportunity to resubmit the manuscript entitled ‘Interactional justice at work is related to sickness absence: a study using repeated measures in the Swedish working population’. We are very grateful for the constructive comments from the reviewers.

We respond to the comments as follows:

Reviewer reports:

Petri Böckerman (Reviewer 1): Comments

1. The empirical context of the study should be better motivated in the introduction.

Answer: We are sorry to hear that the reviewer found the motivation of the empirical context of the study incomplete. As we indicate in the introduction, the topic of sickness absence is highly relevant in Sweden (as elsewhere) and we write on p. 3, line 9-12 ‘sickness absence has increased by 70% since 2010 and governmental spending on health insurance has increased by 11 billion Swedish crowns (around 1.2 billion Euro by December, 31 2014) between 2010 and
2014.’ (i.e., the time span covered by our study). Also, we justify our study by writing that ‘relatively few studies have examined the organizational justice–sickness absence relationship using longitudinal analysis techniques which take repeated measurements of organizational justice into account’ (p. 4, line 8-14). To further underline the need for longitudinal studies with repeated measures, we added on p. 4, line 4-8 ‘However, to be able to look at different indicators of sickness absence, and to differentiate between long term and short term sickness absence, truly longitudinal studies with repeated measures of both predictor and outcome are needed.’ Indeed, the Slosh study offers a unique source to study relationships between justice and health over a time frame as long as 6 years. Few, if any studies have this type of longitudinal data, covering a population approximately representative of the working population of a country.

2. The response rate to the longitudinal survey that is used in the analyses varies from 53% to 57%, depending on the wave (page 5). If those who work in worst working conditions are more likely not to respond to the survey questions, the estimates may be biased, at least to some degree.

Answer: We know that from attrition analyses (as provided in the technical reports) that older women and persons with higher income and longer education are more likely to respond to Slosh, that is, persons with probably better working conditions. It might also be the case that persons with worse working conditions refrain already from participating in the Swedish Work Environment Survey (on which the Slosh sample is based on). Still, such a bias would likely to be in a direction towards more conservative estimates as opposed to inflated ones. Furthermore, we did not find any significant differences in interactional justice between the full sample and the sample with missing data in some waves. We discuss this topic on p. 12, line 37-48: ‘One problem that may arise from missing data and drop out is that the distribution of the observed data may not be the same as the distribution of the complete data. The GEE models may yield biased estimates unless drop out is MCAR (missing completely at random) although it is not clear from the literature how important this bias really is.[1] However, a sensitivity analysis based on a sample including only those who had answered on at least two out of three waves provided very similar results as the here presented ones.’

3. Do the data contain (survey) weights or not? Why they have not been used in the estimations?
Answer: There are weights provided in the survey data, but as the aim of the study was to investigate relationships between interactional justice and sickness absence, not to calculate the prevalence of sickness absence, weights were not used.

4. SES is measured using dichotomous variable (manual/non-manual). Do the data contain more detailed information on SES?

Answer: We chose to dichotomise socioeconomic position to facilitate the interpretation of the results. In line with your suggestion, we also ran the analyses with socioeconomic position measured in four categories (i.e., skilled manual workers, assistant non-manual employees, intermediate non-manual employees, professionals and upper-level executives) and results remained very similar. However, for simplicity reasons, we decided to keep the two initial categories of socioeconomic position. We also added on p. 7, line 39-43, writing ‘The measure of socio-economic position was based on the Swedish socio-economic classification with original 18 basic categories and dichotomised into manual and non-manual employees’.

5. Employees are not randomly assigned into workplaces. Failure to account for sorting of employees will bias estimated effects. The size of the bias is not known. This problem can be addressed using information on employees' wage and work histories (Bockerman et al. 2012). This issue should be noted in the revised version.

Answer: Thank you for pointing out this interesting paper. Indeed, it is possible that healthier employees more often enter jobs with high justice or that healthier employees perceive more justice as they are less sensitive to unfair treatment. We partly control for this problem in the autoregressive analyses, where we control for prior health. We also add on this topic on p. 13, line 17-26: 'Further, employees are not randomly assigned into workplaces and failure to account for sorting of employees could bias estimated effects.[34] We addressed this concern at least partly by using autoregressive GEE, controlling for prior health. However, despite using autoregressive GEE in addition to standard GEE, causality cannot be established and reversed effects as suggested by Lang et al. and Ybema et al. cannot be excluded.[10, 37]'

6. The estimates may suffer from the omitted-variable bias (see also point 5 above). For example, personality traits are most likely correlated with all measures that are used in the analyses. This limitation should be fully acknowledged in the revised version.
Answer: Thank you for raising this important topic, which we now discuss on p.12, line 57-59 writing ‘Also, estimates may suffer from the omitted-variable bias, such as e.g. personality traits might be correlated with measures that are used in the analyses.[34]’.

7. The paper does not consider the potential heterogeneity in the estimated effects. The relationships can differ significantly e.g. by gender, because women might be more sensitive to the lack of justice in the organization.

Answer: The reviewer raises an important point here. It might be the case that estimated effects differ between certain groups, as e.g. by gender. Still, a number of studies has found that women and men react rather similar to stress at work and that it is rather the exposure which differs.[2, 3] On the other hand, it has been suggested that women and men may be differently sensitive to different types of justice. This question is indeed very important and deserves certain attention. A sufficient discussion of this topic would not place in the current paper due to space restrictions. Thus, we decided not to investigate this topic further in the discussed manuscript, but acknowledge this shortcoming in the revised version: ‘A further shortcoming is found in the fact that heterogeneity was not taken into account and further studies should investigate potential effects of gender as there are indications that women reacted more strongly with ill-health to injustice perceptions compared to men.[35, 36]’ (p. 13, line 12-17)

8. The concluding section should discuss more about the practical policy lessons that can be drawn from the estimation results.

Answer: We agree with the reviewer and added to the conclusion on p. 13, line 48 ff: ‘Perceived fairness at work is a modifiable aspect of the work environment, as is job insecurity. Organizations have significant control over both aspects and our results suggest that organizations may gain by investing or improving their policies and rules for fair treatment of their workforce and by improving job security. Further, organization might gain by selection of supervisors for their qualities associated with fair practices, training supervisors in justice principles, and implement performance management practices for them that consider their use of organizational justice.[43] Indeed, training in justice principles has been shown to be successful in different organizational contexts and is connected with relative lower costs as compared to other justice interventions (e.g. raising pay).[44]’
Reference


Andrea Lynn Steege, PhD MPH (Reviewer 2):

This was a very nice paper, I found the analysis interesting and the topic compelling. I have only a few critiques. My main comment is that the text and tables implied that your variables were dichotomous even though they ranged from 0-3/0-4. This should be corrected throughout the results, discussion, and tables.

Answer: Thank you for your encouraging words. We agree with your observation that our wording implied that variables were dichotomous while being continuous and corrected this accordingly throughout the paper.

My other comments with page (P) and Line numbers:

P4 line 12 Use -SA- to abbreviate sickness absence(?) without previously defining your abbreviation, not sure it is used again.

Answer: The abbreviation SA was replaced by the full term ‘sickness absence’.

Aims are buried in text.

Answer: In the revised version of the manuscript, aims have their own paragraphs and are in bold text.

P5 Study population: This is very unclear, a diagram would help.
Answer: A flow chart is now included in the paper (figure 1).

Is it true that some participants were cross-sectional (only in one wave), not longitudinal? How does that work with the time variable?

Answer: All participants, who answered the questionnaire for those in paid work at least once between 2010 and 2014, were included in the study. Thus, for some participants information is indeed only measured at one point in time (i.e., cross-sectional). However, in GEE, subjects with incomplete data are not excluded from the analyses, but as much data as is available is used to calculate estimates. A number of studies have shown that this way of handling missing data is superior and yields more trustworthy estimates than deletion methods would.[1, 4] Also, results were similar when the population was restricted to those who answered at least to 2 out of the 3 waves. (p. 12, line 44-48)

P6 line 29 1st sentence in paragraph seems to be missing words?

Answer: To clarify, we now write ‘To calculate scale values for interpersonal and informational justice, we subtracted the number one from the original value…’ (p.6, line 25-26).

P6 Job Insecurity—not clear. Higher score = more insecurity?

Answer: We now included a sentence ‘Higher values indicated more job insecurity.’ (p.6, line 44-46)

P6 line 51 'for up to one week' is not precise, 1-7 days

Answer: We agree that the term ‘for up to one week’ is rather imprecise. However, it is the reading of the original question (How often have you taken sick leave for a week or less in the past 12 months? Do not count taking care of a sick child.). For that reason, we decided to keep the original formulation.
P6 line 52 don't really need to state the categories if you are going to say 2 occasions or more. Also think 'responded' is a better word than 'stated' since it is a postal questionnaire.

Answer: Changes have been made according to the suggestions.

P7 Covariates/Confounders? Is there evidence that marital status is related to sickness absence in the base population? Is there information about how marital status is related to perception of Informational / Interpersonal justice at work? There is not a discussion of why covariates are included. Many researchers include variables as confounders without thinking about why they are doing it because others did it in the past.

Answer: We based the selection of covariates on the literature and own considerations. Regarding marital status, the idea is that cohabiting is a source of social support, a resource that can help to alleviate stress. In the revised version, we shortly justify the choice of covariate variables writing p. 7, line 28-30: ‘Age, sex, socio-economic position and marital status were included as covariates; these variables are likely to influence both the outcome and the exposure.[23, 24]’

P8 Is maternity/paternity leave considered sickness absence?

Answer: No, parental leave is not considered as sickness absence and respondents were instructed to not report parental leave days as part of their sickness absence. To clarify this, we now write on p.7, line 4 ‘Sickness absence (excluding parental leave) was measured in two ways.’

P8-12 & tables Your 'Job insecurity' is not a binary variable (range 0-4), so need to say higher job insecurity.

Answer: We changed to higher job insecurity where appropriate.
Likewise, you present results in table and text of 'low informational/interpersonal justice' but your variable is 'Informational/Interpersonal Justice' with a range of 0-3, not a binary variable. Need to say lower justice or less perceived justice since it is a self-administered questionnaire.

Answer: In the revised version of the manuscript, we only use the term informational/interpersonal justice, but state in the table heading that ‘(higher values indicate lower levels of perceived justice)’.

P15 ref 17 'approac' should be 'approach'

Answer: Done.

P15 ref 23 'New Jersy' should be 'New Jersey'

Answer: Done.

P11 Does 'low job insecurity' mean 'job security'? typo?

Answer: Thank you, we now omit the word “low”.

P11 'did report no job insecurity at all' -double negative is confusing, rephrase

Answer: We clarified the sentence and now write ‘did not report any job insecurity…’

P11 line 21-25 this sentence seems to come out of nowhere

Answer: We decided to omit the sentence in question.
Answer: Thank you for pointing out these mistakes.

We now write on p. 12, line 17-19 (previous p. 11, line 41-42) ‘Also, job insecurity might not be bad for everyone, e.g., a temporary work contract might be accepted as a step in career or as a possibility which offers flexibility,’ and on line 27-31 (previous line 10-12) ‘Furthermore, our analysis relies on a longitudinal analysis technique, which allows an efficient adjustment for correlated data and provides more robust results than traditional regression analysis.’

On p. 12, line 44-50 (previous line 10-12) the wording was changed to ‘However, a sensitivity analysis based on a sample including only those who had answered on at least two out of three waves provided very similar results as the here presented ones. Thus, there is some evidence that missing values are not a problem for our analysis.’

On p. 13, line 43-48 (previous p. 12, line 50) ‘Our findings indicate that lower levels of informational and interpersonal justice are associated with an increased risk for long and frequent sickness absence. Also, higher levels of job insecurity turned out as an important predictor of both long and frequent sickness absence.’

P17 Table 1 Category should be 'Frequency of Sickness Absence' consider changing 'times' to 'periods' ‘<2 periods during the past 12 months' / '2 or more periods during the past 12 months' or use occasions as you did in your methods—but think periods is a better term. Please list covariates that are included in table instead of just saying 'covariates'.

Answer: ‘Frequent sickness absence’ has been changed to ‘Frequency of sickness absence’ and ‘times’ has been changed to ‘periods’. Also, we now list all covariates.

You use sex and gender interchangeably, which do you mean?

Answer: We now use the term ‘sex’ throughout the paper.
Would like to see demographics at each of the time intervals.

Answer: Table 1 provides now the demographics at each of the data collections.

Julia Brütting, MPH (Reviewer 3):

Thank you for this interesting and informative approach of investigating the relationship between sickness absence and perceived unfairness. The results of this study are based on a large, nearly representative sample. Methods and the technical procedure for the statistical analysis are described comprehensibly, including sensitivity analysis. That makes the results comprehensible and important for everyday working practice.

Answer: Thank you for your encouraging words.

Nevertheless, there are some aspects that need essential revision:

1) Abstract:

Please place the abbreviation 'GEE' in braces in the method section when you use the term in full length for the first time. Otherwise, one does not know what 'GEE' stands for.

Answer: Done.

2) Background:

Please explain what is meant by the abbreviation -SA- (page 4, line 12)

Answer: The term ‘SA’ is now spelled out (sickness absence).
3) Main measurements:

Please give a short wording explanation what Cronbach's alpha numbers indicate, e.g. 'Cronbach's alpha ... varied between 0.89 and 0.90, indicating...' (page 6, lines 20-21 and 35).

Answer: In line with the reviewers suggestion we added ‘indicating a high interrelation between justice items.’ (p. 6, line 30-33, and 46-47).

4) Subsection Sickness absence:

What is the cut-off (31 days) for long-term sickness absence based on? Is there a definition by Swedish law or is it based on a statistical calculation? A short explanation on this would be desirable (page 6, lines 46-50).

Answer: There is no clear definition of long-term sickness absence and different definitions have been used in the literature.[5, 6] Our cut-off of >30 days is based on the fact that we were interested in longer periods of sickness absence, but not only those extreme cases where it lasts for 90 days or longer (which would have been the next response category). Also, the cut-off value we chose has been used previously and we now write on p. 7, line 10-13 ‘In line with definitions used in earlier studies,[21, 22] participants were defined as having been on long sickness absence if they stated that they had taken sick leave 31 days or more during the past 12 months.’

5) Subsection Covariates:

It is not necessary to report how you have coded variables for the statistical analysis to the reader. It is sufficient if you indicate that they have been dichotomized.

Answer: Thank you for this. We changed this according to your suggestions.
6) Discussion:
Could you please provide the heading 'strengths and limitations' over the respective section?

Answer: We now include the heading ‘Strengths and limitations’ over the section in question.

7) Discussion:
You state that actions to improve job security and justice at work might be a well suited measure to decrease sickness absence rates. Could you please name measures or suggest possible approaches (including references) as examples?

Answer: Different actions might be useful to increase different aspects of organizational justice. Here, we concentrate on interactional justice. A key person for implementing interactional justice is the supervisor. Indeed, a number of measures associated to supervisor behaviour has been shown to be a powerful tool to improve work environment.[7] We added to this topic in the conclusion writing on p.13, line 48 ff: ‘Perceived fairness at work is a modifiable aspect of the work environment, as is job insecurity. Organizations have significant control over both aspects and our results suggest that organizations may gain by investing or improving their policies and rules for fair treatment of their workforce and by offering secure job conditions. Further, organization might gain by selection of supervisors for their qualities associated with fair practices, training supervisors in justice principles, and implement performance management practices for them that consider their use of organizational justice.[43] Indeed, training in justice principles has been shown to be successful in different organizational contexts and is connected with relative lower costs as compared to other justice interventions (e.g. raising pay).[44])’

8) Page 12, line 50: The word 'out' is double.

Answer: One ‘out’ has been deleted.
9) Tables in general: It would be nice if you could highlight the significant results, so one can see them at the first glance.

Answer: Statistically significant results are now highlighted in bold style in tables 1-4.

References


