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Validation and Measurement Invariance of the Multidimensional Qualitative Job Insecurity Scale

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Abstract

This contribution introduces the Multidimensional Qualitative Job Insecurity Scale (MQJIS). Drawing from the qualitative job insecurity literature and addressing some of other scales' limitations, a multidimensional model is proposed and investigated by means of confirmatory factor analysis and multilevel confirmatory factor analysis. Study 1 aims to explore the psychometric properties and factorial structure of MQJIS in an Italian sample of blue-collar workers ($N = 583$), showing that a model with one higher-order factor (i.e., qualitative job insecurity) and four dimensions (i.e., social relationships, employment conditions, working conditions, and work content) shows a good fit to the data and good reliability indices. Study 2 aims to investigate MQJIS measurement invariance across several groups, based on country of origin, age, and gender. Results on a sample of Belgian and Italian workers ($N = 710$) show that MQJIS met the criteria for uniqueness invariance across genders and scalar invariance across countries and age groups. Significance, implications, and future directions stemming from the initial validation and the confirmed measurement invariance of this scale are discussed.

Keywords: Qualitative job insecurity; multidimensional scale; measurement invariance; validation.

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Initial Validation and Measurement Invariance of the Multidimensional Qualitative Job

Insecurity Scale

1. Introduction

Ongoing changes in the work environment may bring along many uncertainties. Employees may fear to lose valued aspects of their job such as their career prospects in the organization and changing work tasks in the future (Hellgren, Sverke, & Isaksson, 1999). These perceived threats concerning a significant deterioration of the working situation in the future are labelled as “qualitative job insecurity.” Qualitative job insecurity may be experienced as highly stressful by employees and may also have negative consequences for the organization (e.g., De Witte et al., 2010; Hu & Zuo, 2007). Previous research linked qualitative job insecurity, for instance, to lower levels of wellbeing and performance (Cheng & Chan, 2008). Although quantitative job insecurity – defined as the fear of job loss – has received considerable research attention, qualitative job insecurity remains relatively underexplored. Few recent contributions addressed qualitative job insecurity using a global measure, but the field remains quite unexplored (Stynen, Forrier, Sels, & De Witte, 2015; Urbanaviciute, Lazauskaite-Zabielske, Vander Elst, Bagdziuniene, & De Witte, 2015; Van den Broeck et al., 2014; Vander Elst, Richter, Sverke, Näswall, De Cuyper, & De Witte, 2014). Given that qualitative job insecurity is connected to one’s job because it concerns the perceived threat of deteriorating working conditions, rather than job loss, and that changes in working conditions are the core of the current global labor market, qualitative job insecurity is an especially relevant construct to investigate due to its potential effect on the working population and beyond.

Unfortunately, only few qualitative job insecurity scales have been presented in the literature, possibly explaining the gap of research on qualitative in comparison with quantitative job insecurity. These scales are also characterized by important shortcomings.

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For instance, the few existing scales that have tapped into threatened aspects of the job, have mainly focused on a particular set of job aspects (e.g., employment conditions in Hellgren et al., 1999) or have not differentiated between multiple types of threatened components of the job (e.g., multiple types of threatened job aspects were combined in one multiplicative scale in Ashford, Lee, & Bobko, 1989). Another often used scale focuses on measuring qualitative job insecurity in a global, encompassing manner, without differentiating between various aspects of the job (e.g. Urbanaviciute et al., 2015; Van den Broeck et al., 2014). The lack of a differentiated, multidimensional job insecurity scale may hamper the process of investigating the different mechanisms underlying the effects of multiple types of qualitative job insecurity, and hinder possibilities to implement tailored interventions to decrease employees' specific experiences of qualitative job insecurity in practice.

In reply, the aim of this contribution is two-folded. We introduce a new multidimensional measure of qualitative job insecurity based on a well-known framework of the work situation (i.e., job content, social relationships, employment conditions and working conditions) and evaluate the scale's psychometric proprieties via multilevel confirmatory factor analysis (MCFA; study 1), and then evaluate the scale's measurement invariance across several subgroups (study 2).

1.1 Measurement of Qualitative Job Insecurity

There are only a few scales that aim to measure job insecurity (Shoss, 2017; Sverke & Hellgren, 2002) and they can be conceptually distinguished as global versus multidimensional operationalizations. Following Hellgren et al.'s reasoning (1999; Sverke & Hellgren, 2002), we argue that while a global approach is justified when attempting to measure quantitative job insecurity (see e.g., Probst, 2003; Vander Elst, De Witte, & De Cuyper, 2014), a multidimensional approach may be more suitable when dealing with qualitative job insecurity because of the breadth of the construct, which encompasses

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phenomena such as deterioration of working conditions, demotion, lack of career opportunities, and concern about one's fit with the organization in the future. Hellgren et al. (1999) developed a four-item scale measuring qualitative job insecurity, which has been variously adapted (ranging from 3 to 5 items) by several scholars (see e.g., Chirumbolo, Urbini, Callea, & Talamo, 2017; Vander Elst et al., 2014). This scale mainly focuses on employment conditions, such as career prospects and pay development (although one item also concerns a stimulating job content in the future). However, employees may additionally feel insecurity about other aspects of the job as well, including social relationships and working conditions. Ashford et al. (1989) proposed a multiplicative scale measuring both quantitative and qualitative job insecurity: however, that scale is problematic on both methodological and statistical grounds. In fact, multiplicative scales have been highly criticized (Evans, 1991) and it may not be possible to make any inference regarding qualitative job insecurity as such because of the way in which the scale was built. In fact, the items refer to a mixture of both qualitative and quantitative job insecurity (De Witte et al., 2010).

We introduce a differentiated and balanced qualitative job insecurity scale covering insecurity regarding multiple aspects of one's job, namely the Multidimensional Qualitative Job Insecurity Scale (MQJIS). Le Blanc, De Jonge & Schaufeli (2000) suggested four categories of job-related stressors: job content (e.g. complex or monotonous work, too many responsibilities, conflicting or ambiguous demands), working conditions (e.g. poor physical conditions regarding lighting, noise, vibrations, temperature, physically demanding work, lack of hygiene or protective devices, work posture), employment conditions (e.g. shift work, low pay, poor career prospect, flexible contract), and social relations (e.g. poor leadership, low social support, low participation in decision making, discrimination). The same model has been taken up by Lamberts et al. (2016), based on the 6th European Working Conditions

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Survey and is also used in the legislation of many European countries as a framework for the prevention of psychosocial risks at work. Undoubtedly, it might be recognized that the threat concerning deterioration of the situation of people at work could differently affect all these aspects, so that a qualitative job insecure workers could be scared by the possibility that their work in the future can be worst in comparison with the current situation, because of a deterioration one or more of these four aspects.

MQJIS was developed by the Work, Organisational, and Personnel Psychology research group based on this framework dividing the work situation into job content, social relationships, employment conditions, and working. In addition, the MQJIS grasps both the perceived change of losing valued job characteristics (i.e., cognitive component) and the worries related to those threats (i.e., emotional component). As such, it covers the entire experience of job insecurity (see Vander Elst et al., 2014, for a more detailed discussion). The added value connected with the possibility to better evaluate which of the four aspects of perceived qualitative job insecurity is more relevant must also be considered for a better diagnostic use, and a consequent more targeted and precise intervention.

2. The Present Contribution

Up to date, different versions of MQJIS have been used to measure qualitative job insecurity (De Witte et al., 2010; Handaja & De Witte, 2007) but its measurement properties have not been formally evaluated. Additionally, it is unclear whether the MQJIS may be used meaningfully to measure and compare levels of qualitative job insecurity across multiple groups. The MQJIS grasps the broadness of the qualitative job insecurity concept and using this scale in future studies may further add to theory development on qualitative job insecurity. Additionally, indicating that the MQJIS measures the same underlying construct across different contexts may stimulate comparative research on qualitative job insecurity across countries (i.e., Italy and Belgium) and groups (i.e., gender and age categories).

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Secondly, practitioners may use the MQJIS to measure qualitative job insecurity when screening potential psychosocial risk factors in the work environment.

The present contribution is organized as follows: Study 1 aimed to validate the MQJIS by investigating its factor structure in an Italian sample by means of multilevel confirmatory factor analysis. Study 2, using a different Italian sample and a Belgian one, deals with MQJIS measurement invariance analysis across two countries and several demographics. The need to identify a clear factorial structure for MQJIS is met in Study 1, providing evidence of construct validity. This is a very important theoretical step, which aims to test whether the four categories – looking at qualitative job insecurity as a potential stressor – are well covered by the scale. This first step, however, is not enough, because it involves workers from only one country, and it is important to verify whether the same scale can assess the same construct also in other countries. Therefore, we performed a measurement invariance analysis in Study 2. Measurement invariance analysis relies on the idea that a unique factor model undergoes a series of increasingly restrictive psychometrical tests to verify equivalence across groups and reduce inter-measurement error (e.g., countries; Milfont & Fischer, 2010).

Belgium and Italy have different labor markets and labor regulation, and perhaps also the economic prospects of both countries are different. Overall, these countries take a completely different approach: as an example, Eurofound (2018) noted that Belgium's labor relations are based on the social partnership model (Visser, 2009), which presents high levels of centralized collective bargaining, while Italy's labor relations are based on the "state-centered" model (Eurofound, 2018; Visser, 2009), which presents strong but uncoordinated collective bargaining institutions that rely mainly on state intervention (e.g., Italy has a national collective bargaining agreement for each industry sector). These differences are relevant because the overall legislative framework may affect employees' perceptions and expectations when it comes to qualitative job insecurity.

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Additionally, Dutch is a German language whereas Italian is a Latin language, and this means that we are testing measurement invariance across two very different languages. So, in Study 2 we evaluate the invariance of the psychometric properties of this scale across two countries that differ in essential aspects, such as language, labor markets, labor regulations, and economic prospects.

3. Study 1

The aim of the first study is to evaluate the factor structure underlying the MQJIS by conducting both traditional confirmatory factor analysis (CFA) and multilevel confirmatory factor analysis (MCFA; Muthén, 1994). We predict that a four-factor model with uncertainty about the job content, about social relationships, about employment conditions and about working conditions as latent factors will fit the data best. Measures were collected at the individual level, but workers were grouped in work teams. This nested structure of the data needs to be considered, and a proper analysis requires adjustment to incorporate the multilevel nature of the data (Muthén, 1991). While CFA at a single level of analysis uses the total variance–covariance matrix of the observed variables, MCFA decomposes the total sample covariance matrix into pooled within-group and between-group covariance matrices and uses these two matrices in the analyses of the factor structure at each level. Multilevel analysis allows to investigate whether qualitative job insecurity perceptions are shared inside each work-team and whether these perceptions are different across work teams.

3.1. Method

3.1.1 Participants

Data collection involved several Italian manufacturing companies with a total of 583 blue-collar workers (81% of them were employed in two companies), from 72 work groups. Each group was composed of workers of the same department and of the same shift, and all data were collected at the individual level. After collecting the data, the original dataset was

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reduced, according to two criteria: work group size and missing values. First, in order to perform a MCFA considering work group as the grouping variable, group size of each group was checked and groups with less than three respondents were deleted from the dataset. This was the case for 23 work groups (17 groups with 1 respondent and 6 groups with 2 respondents, for a total number of 29 workers).

Secondly, we used the Little's MCAR test to test whether missing data were 'missing completely at random' (MCAR), i.e., no identifiable pattern exists in the missing data. The results demonstrated that the data were indeed missing completely at random ($\chi^2(106) = 116.42; p = .230$), and hence, all respondents with missing values could be deleted from the original dataset. The final dataset consisted of 510 workers from 48 work groups (median group size: 7.5 workers). In this final sample, 81% of the respondents were male; 27% had an educational tenure lower than 9 years; only 5% of the participants worked in the company for less than 1 year and 80% worked for the same company for five year or more; 88% of participants had a permanent contract. Data for this study were collected as a part of the first author's doctoral dissertation. All data were anonymized right after collection and a unique numerical ID was assigned to each completed questionnaire.

3.1.2 Measures

The Multidimensional Qualitative Job Insecurity scale (MQJIS) consists of eight items tapping into the following job insecurity dimensions: social relationships (e.g., "*I fear I might get another supervisor in the future*"), employment conditions (e.g., "*I am insecure about my chances of promotion*"), working conditions (e.g., "*I feel insecure about the future content of my job*"), and job content (e.g., "*I think my work will become less interesting in the future*"). Responses were given on a seven-point Likert scale, from 1 = "Not at all true to me" to 7 = "Completely true to me". The MQJI scale was originally developed in Dutch and then translated into English. However, the Italian version of the MQJI scale has been used in this

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study, which was obtained by means of back-translation (English to Italian and back Italian to English). In addition, the exact correspondence between the back-translated English version and the Dutch version was checked. At the end, the correspondence between the Italian version and the original Dutch one was checked by several subject-matter experts, and a few small adjustments were proposed due to the different legal and cultural work setting (see Appendix for the scale in the three languages). Some socio-demographic variables were collected as well, namely gender, age, educational level, nationality, organizational tenure, type of contract, department, and work shift when the survey was administered.

3.1.3 Procedure

All participants filled out the questionnaire during working hours, at the end or at the beginning of their work shift. At the end of the questionnaire, participants were asked to answer some socio-demographic questions. Participating in the survey only took about 10 minutes.

3.1.4 Data analysis

A series of Confirmatory Factor Analysis (CFA) and Multilevel Confirmatory Factor Analysis (MCFA) were performed to test construct validity of the MQJIS. We used MCFA because the collected data were nested within work groups. Preliminary to the MCFAs, we conducted conventional CFAs on the sample total covariance matrix to estimate within-group level variation (Muthén, 1994). In these analyses, different model structures, identified in the literature, were tested and compared. Subsequently, in MCFA, the variability in variables is decomposed into two latent components, a within-group component (variability at individual level) and a between-group component (variability at group level; Asparouhov & Muthén, 2009).

To test whether a multilevel analysis is appropriate for our data, we estimated between-group level variation. We analyzed variability between groups on each item by

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computing the intraclass correlation (ICC) for each item of the scale (Dyer, Hanges, & Hall, 2005; Muthén, 1994). The goodness of fit of the models was evaluated with the Tucker Lewis Index (TLI; Tucker & Lewis, 1973), the comparative fit index (CFI; Bentler, 1990), the root mean square error of approximation (RMSEA; Hu & Bentler, 1999), and the standardized root mean square residual (SRMR). Our interest in this study is focused on the validation of the scale and on the analysis of its dimension; for this reason, we used a multilevel approach but we looked mainly at the within-group level results.

3.2. Results

As a preliminary step to check for multivariate normality, we verified that skewness (range: 0.04-0.71) and kurtosis (range: 0.44-1.48) values for each item did not exceed 2.0 and 7.0, respectively, supporting normality assumptions (Curran, West, & Finch, 1996). Means, standard deviations and correlations of the variables are shown in Table 1. Cronbach's alpha of .78 showed a good level of reliability of the scale.

Insert Table 1 about here

In the first step, to test the factorial structure of the MQJIS, we conducted a series of CFAs to verify the consistency between the theoretical expectations and the empirical data. Three competitive models were tested: a one-factor model (model 1), a four-factor model treating all dimensions of qualitative job insecurity as separate factors (model 2), and a model with a second-order factor and four first-order factors (model 3). The first model, with qualitative job insecurity as a mono-factorial scale, showed acceptable fit indexes (see Table 2), and factor loadings were all statistically significant ranging from .42 to .72. Model 2 showed that the estimated covariance matrix was not positively definite, and so it was not considered. Finally, model 3 was normally estimated, and fit indexes were very closed to

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those of the one-factor model. Factor loading were statistically significant ranging from .45 to .71.

 Insert Table 2 about here

The second step concerned the analysis of the between-group level variation. First, for each item of the MQJIS, we calculated the variability between groups. Intraclass correlations varied from .01 to .11, justifying the use of multilevel techniques to analyze our data. Next, we ran the same competing models presented above in a series of MCFAs. We ran the three models using the same factor's structure at within and between level. Again, the estimated covariance matrix in model 5 was not positively definite. Comparing the results of the unidimensional model (model 4) with the second order factor model (model 6), it is evident that the latter model fitted the data better (see Table 2).

Nevertheless, the SRMR_b was high (.40), showing that perhaps another factorial structure could be more appropriate at the between level. For this reason, two other models, one with a single factor at the between level (model 7) and another with four covarying factors at the between level (model 8) were tested. Unfortunately, neither showed a relevant improvement in the SRMR_b index. For this reason, results support model 6, the one with one second-order and four first-order factors at both individual and group level. The path diagram of model 6 is depicted in Figure 1. As shown in the figure, all the items' factor loadings at the individual level are significantly different from zero, ranging from .39 to .66.

Figure 1 shows an isomorphic model, so the within-level factorial structure (lower half) and the between-level structure (upper half) are identical. At the within level, the model is a classic CFA on disaggregated data. Eight observed indicators (boxes) load into four first-level latent orthogonal dimensions (circles). In turn, these latent dimensions load into a single second-order factor. At the between level, the structure is identical but there are eight circled

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indicators (QJI-1 to QJI-8). These are not observed data, but rather represent the group means for each observed indicator at the within level.

 Insert Figure 1 about here

3.3. Discussion

The aim of this study was to evaluate the factor structure of the MQJIS, a scale which allows to measure qualitative job insecurity as a multifaced construct. In particular, this scale considers four different aspects of the work situation: job content, social relationships, employment conditions, and working conditions. Uncertainty concerning each of these facets contributes to the perception of qualitative job insecurity.

Furthermore, if the data collected are multilevel in nature --as in this case, which considers workers belonging to 48 work groups within two organizations-- they should be analyzed accordingly. Data from individual survey respondents cannot be treated as independent if individuals are aggregated in groups, and a proper data analysis requires to incorporate the multilevel nature of the data (Shannon & Norman, 2009). Muthén (1991) stated that this involves decomposing the variances into between-group and within-group estimates. For this reason, a simple CFA is not appropriate to test the factorial structure of MQJIS, and a multilevel approach is needed.

Results from Study 1 showed that the multidimensional structure of the MQJIS is supported by the data. The model with four first order factors and one second order factor, either at the within-group level and at the between-group level, seems to be the best one. This model describes an instrument that measures a single construct, that is qualitative job insecurity, which is defined by four different facets: job content, social relationships, employment conditions, and working conditions. At the same time, these four sub-dimensions are correlated, but these correlations are not very high, ranging from a minimum

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of .31 (between employment conditions and social relationships) to a maximum of .51 (between employment conditions and working conditions). This result suggests that, even though these dimensions, combined together, all refer to qualitative job insecurity and allow its assessment, nevertheless, they cover different facets of this construct.

4. Study 2

The second study aims to verify the measurement invariance (MI) of the MQJIS across two countries, namely Italy and Belgium. MI relates to how the factor structure of a scale remains invariant across different groups and to how the content of each item is interpreted in the same way (Chen, 2007). We tested measurement invariance of the MQJIS across countries, gender and age. Using the best model identified in Study 1, the invariance of the measurement model across countries, genders and age categories was tested by means of multigroup analysis.

4.1. Method

4.1.1 Participants

The survey involved eight companies, two from Belgium and six from Italy. The final sample consisted of 710 workers; 238 from Italy and 472 from Belgium. In Belgium, data were gathered among the white-collar workers of a logistic company, as well as among employees of a company providing in high technical services; 70% with a statutory contract (i.e., a civil servant contract), 55% female, 54% between 36 and 55 years of age. Italian participants were employed in six healthcare companies; 60% with permanent contract, 75% female, 80% of Italian nationality, and 48% of them were aged between 36 and 55. We used Little's MCAR test to test whether missing data were 'missing completely at random' (MCAR). This was confirmed by the results for the total sample ($\chi^2(59) = 72.98; p = .104$).

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4.1.2 Measures and procedure

The same measure was used as in Study 1, and similar demographic data were collected. The employees of the Belgian companies were asked to fill out a questionnaire on psychosocial risks and wellbeing at work by their human resources manager. They received an invitation email with an Internet link to the online survey, sent by the researchers. Participation was voluntary and anonymous, and participants were allowed to complete the online survey during working hours. Since data were collected before 2014, ethical approval for the Belgian data collection was not needed for academic surveys/questionnaires. Nonetheless, the authors adequately protected participants' welfare and civil rights. All Italian participants completed the paper-and-pencil questionnaire during work hours, at the end or at the beginning of their work shift. At the end of the questionnaire, participants were asked to answer some socio-demographic questions. Filling out the questionnaire took about 10 minutes. Ethical approval for the Italian data collection was granted by the second author's previous institution (Drury University), within the framework of a larger, multinational project on job insecurity. Data were collected between 2017 and 2018, and subsequently anonymized. A unique numerical ID was assigned to each completed questionnaire.

4.1.3 Data analysis

Measurement Invariance (MI) was tested running a multigroup CFA using the model that fitted best in study 1, namely the model including one second-order factor and four first-order factors. Specifically, MI analyses examined hypotheses on the similarity of the covariance structure across groups differing for country, gender or age considering: (a) configural invariance, allowing all the parameters to be freely estimated; (b) metric invariance, requiring invariant factor loadings; (c) scalar invariance, requiring also invariant intercepts; and (d) uniqueness invariance, requiring invariant residuals. Scholarly guidelines

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recommend evaluating metric invariance by examining the chi square and at least two other fit indexes (Kline, 2015). We report chi square, CFI, and RMSEA. Criteria for metric invariance are $\Delta CFI \leq -.010$ or $\Delta RMSEA \leq .015$, and criteria for scalar and uniqueness invariance are $\Delta CFI \leq -.010$, or $\Delta RMSEA \leq .015$ (Chen, 2007). To test MI across age the sample was split in two classes: young workers (younger than 35 years old) and old workers (older than 35).

4.2. Results

Means, standard deviations and correlations of the variables, separately for the Italian and the Belgian sample, are shown in Table 3. McDonald's omega was .79 for the Italian sample and .74 for the Belgian one, showing a good level of reliability of the scale in both countries.

Insert Table 3 about here

At the first step, the best model found in study 1 (baseline model, i.e. the model with one second-order factor and four first-order factors) was tested separately for countries, genders, and age groups. The baseline model showed good fit indexes for both countries, for both genders and for both age groups, as seen in Table 4. Items' factor loadings were all significantly different from zero.

Next, we evaluated whether MQJIS met the criteria for configural invariance by estimating the hypothesized model simultaneously across the different groups (i.e., Italy vs. Belgium, young vs. old, and men vs. women), without including equality constraints. Configural invariance criteria were met, as noted by the models' good fit indexes across countries, age groups, and genders (Table 4). Criteria for metric invariance were also met: MQJIS was invariant across age groups ($\Delta CFI = -.004$; $\Delta RMSEA = .000$) and across genders ($\Delta CFI = -.007$; $\Delta RMSEA = .000$). The scale can be also considered metric invariant across

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countries even though the CFI variation exceeded the recommended thresholds ($\Delta\text{CFI} = -.024$), because the RMSEA variation was well below the recommended threshold ($\Delta\text{RMSEA} = -.005$; Chen, 2007).

Further, we analyzed whether MQJIS met the criteria for scalar invariance. Therefore, we additionally constrained the intercepts of the observed variables to be equal across groups. The results showed that the hypothesized model was again invariant across countries, genders and age categories. The criteria for scalar invariance were fully met across age groups ($\Delta\text{CFI} = -.015$; $\Delta\text{RMSEA} = .002$) and genders ($\Delta\text{CFI} = -.008$; $\Delta\text{RMSEA} = -.001$). According to Chen (2007) we can also consider the scale to be scalar invariant because although the CFI variation exceeded the threshold ($\Delta\text{CFI} = .017$), the RMSEA variation was very low ($\Delta\text{RMSEA} = -.002$). Last, we tested whether MQJIS met the criteria for full uniqueness invariance. Criteria were met across countries ($\Delta\text{CFI} = -.014$; $\Delta\text{RMSEA} = -.004$) and age groups ($\Delta\text{CFI} = -.009$; $\Delta\text{RMSEA} = -.001$), but not across genders ($\Delta\text{CFI} = -.051$; $\Delta\text{RMSEA} = -.002$).

Insert Table 4 about here

4.3 Discussion

Measurement invariance is demonstrated when the association between the items and the latent factor(s) do not depend upon group membership or measurement occasion (i.e., time; Mellenbergh, 1989). We tested MQJIS in a series of increasingly more restrictive tests of invariance (i.e., configural, metric, scalar, and full uniqueness; Van de Schoot, Lugtig, & Hox, 2012) using three grouping variables, country, age, and gender. Construct validity results showed that the items of MQJIS loaded as expected in all subsamples, and the factorial structure was the same across all groups; thus, we can conclude that MQJIS is configurally invariant (Milfont & Fischer, 2010; Vandenberg & Lance, 2000). Results

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showed that the same basic organization of the construct is supported across all tested subgroups. This implies that the construct measured by MQJIS, that is, qualitative job insecurity, was conceptualized in the same way by responders across all subsamples. Stated differently, it means that participants across different groups employed the same conceptual framework when answering to MQJIS items.

If configural invariance is supported, the next step is to test for metric invariance: a model where factor loadings are fixed but intercepts are free of constraints (metric invariance) was run. This provides evidence that respondents across groups give the same meaning to the latent construct and each item contributes to the latent construct to a similar degree across subgroups. We found MQJIS to be metric invariant considering all three grouping variables, entailing that the observed scores on the MQJIS are calibrated to the score of our latent construct, qualitative job insecurity, equally across the two countries (and therefore languages), age groups, and genders.

If metric invariance is supported, the next step is to test for scalar invariance: we ran a model in which the loadings and intercepts are constrained to be equal across groups. This provided evidence that respondents interpreted both the meaning of qualitative job insecurity (the latent construct) and each item equally across groups. As a consequence, groups can be compared on their scores on qualitative job insecurity. Our results show MQJIS to be scalar invariant, which entails that means of the observed MQJIS scores are related to the means of the qualitative job insecurity construct in the same way across all subsamples. As a result, this allows researchers to meaningfully compare scores across countries (and languages).

Last, if scalar invariance is supported, the final step is to test for full uniqueness invariance: we ran a model where residual variances are also fixed to be equal across groups. If established, this means that the explained variance for every item is the same across all groups. In other words, this means that qualitative job insecurity is measured identically

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across groups. Our results suggest that MQJIS met the criteria for uniqueness invariance only across countries and age groups. However, it is worthy of note that this last test is considered to be optional and sometimes unreasonably strict (Byrne & van de Vijver, 2010; Milfont & Fischer, 2010). In sum, we can consider the two versions of MQJIS invariant measures of the same latent construct, qualitative job insecurity.

5. General Discussion

Besides responding to the need to develop a version of the MQJIS in the Italian and Dutch language, this work aimed to test the two versions' measurement invariance across a variety of factors. MQJIS showed good psychometric properties, confirming the goodness of the underlying theoretical model both at the between- and within-person level (MCFA results, study 1). In addition, this contribution showed that the factorial structure of the measurement model was confirmed as substantially invariant, enabling to compare qualitative job insecurity levels across the three subdivisions, namely country, gender, and age (study 2). Testing for measurement invariance plays a pivotal role in psychology as a science, enabling multigroup comparisons and ensuring that those comparisons are meaningful and valid. Testing for measurement invariance of qualitative job insecurity is therefore critically important to help increase the robustness and validity of empirical research. In sum, our study findings demonstrate that the Italian and Belgian (Dutch language) versions of the MQJIS can be considered as a valid and reliable scale measuring qualitative job insecurity, conceptualized as the experienced threat of four job dimensions (i.e., social relationships, employment conditions, working conditions, and work content). Scholars and practitioners may use the Italian and Belgian versions of the MQJIS to measure qualitative job insecurity and to make meaningful comparisons across subgroups.

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5.1 Limitations

Besides showing the merits and psychometric characteristics of MQJIS, this contribution has some limitations that should be acknowledged. First, this contribution did not consider convergent validity. We believe that testing the extent to which the scores obtained via MQJIS compare with other qualitative job insecurity scales may be interesting and would offer additional insights into the psychometric proprieties of MQJIS. Additionally, criterion-related validity should be established, but we were not able to do so in this contribution. MQJIS versions were shown to be invariant across Italian and Belgian samples and extending the measurement invariance analysis to other languages/countries (e.g., English) is warranted to further explore MQJIS psychometric properties. Last, employees that participated in this research project come from organizations in the healthcare and manufacturing sectors. This may hinder the generalizability of our findings across all working populations.

5.2 Research/practical implications and future directions

We added to the existing knowledge by demonstrating that the experience of qualitative job insecurity may be more multifaced than assumed and treated in previous research (e.g., Ashford et al., 1989; Hellgren et al., 1999). In this study, we demonstrated that employees may perceive threats to different aspects of the work situation—namely social relationships, employment conditions, working conditions, and work content—to different extents. In previous studies (Ashford et al., 1989; Hellgren et al., 1999), these more faceted experiences of qualitative job insecurity were overlooked, as all aspects were combined into one general job insecurity scale, which additionally also mixed quantitative and qualitative job insecurity. Using the MQJIS, scholars and practitioners may measure qualitative job insecurity in its full meaning.

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A valid measurement of qualitative job insecurity is important in scientific research, as well as for diagnostic reasons in organizations. In scientific research, measuring different types of qualitative job insecurity may enhance research on the different/similar antecedents and outcomes of these types; for instance, do all types relate to well-being in the same extent or may one of the types appears to be more important? For instance, previous research with a similar scale for instance suggested that insecurity regarding the job content was a more important predictor of job satisfaction, whereas insecurity regarding working conditions was more strongly related to emotional exhaustion (Handaja & De Witte, 2007).

To further validate MQJIS, it may be interesting to compare it with the Hellgren et al.'s scale (1999) or with a global scale to measure qualitative job insecurity (e.g. Fischmann, De Witte, Sulea, & Iliescu, 2018). This may also provide clues on the differences (if any) of using global vs. multidimensional scales to measure qualitative job insecurity. Depending on the specific research question, a multidimensional (rather than global) scale might be preferable. Linked to this point, MQJIS will allow researchers to further investigate the relationship between qualitative job insecurity, its predictors, its outcomes, and its moderators and mediators. These variables may be clustered in individual variables and stable dispositions (e.g., wellbeing, self-esteem, overall health) and organizational attitudes and behaviors (e.g., job satisfaction, organizational commitment, organizational citizenship behaviors). Exploring the effect of job insecurity on those and other outcomes (e.g., willingness to retire early or actual early retirement) will help understanding the consequences of qualitative job insecurity.

In practice, the MQJIS may be used as part of psychosocial risk assessments in organizations. The added value of using a multidimensional scale rather than other available scales lies in that MQJIS may help practitioners to identify which, if any, of the multiple aspects of qualitative job insecurity (e.g., deterioration of working conditions, demotion, lack of career

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opportunities, and overall concern about one's fit within the organization) is prevalent. As such, the MQJIS may inform and tailor specific interventions designed to tackle qualitative job insecurity; which specific aspects of the work situation are perceived as threatened and should be focused on in actions at the workplace?

6. Conclusion

The MQJIS is an eight-item scale that measures qualitative job insecurity, conceptualized as the subjectively perceived possibility of deterioration of current working conditions. This contribution shows that the MQJIS is a reliable scale with a clear and invariant factorial structure across several subsamples. This implies that MQJIS may be used to investigate qualitative job insecurity in a more differentiated way and researchers may benefit from being able to meaningfully compare scores from different groups, overcoming potential barriers due to language or other factors. Using MQJIS may improve practitioners' ability to understand which dimension is more relevant for employee dealing with qualitative job insecurity and thus better inform organizational decision making.

Conflict of Interest Disclosure

The authors declare that they have no conflict of interest.

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Table 1.

Correlations, Means, and Standard Deviations in Study 1

Variable	1	2	3	4	M	SD
1. Qualitative job insecurity	-				4.21	1.23
2. Social relationships	.74	-			4.05	1.68
3. Employment conditions	.72	.31	-		4.65	1.88
4. Work conditions	.77	.51	.35	-	4.42	1.50
5. Work content	.76	.41	.39	.50	3.72	1.55

Note. For all the correlations $p < .001$

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Table 2

Results of Confirmatory Factor Analyses on the Multidimensional Qualitative Job Insecurity scale

Model	χ^2	df	<i>p</i>	CFI	TLI	RMSEA	SRMR _w	SRMR _b	BIC
Mod. 1: One factor model	149.13	19	<.001	.91	.87	.091	.046		26873.96
Mod. 2: Four Factors with covariances*	-	-	-	-	-	-	-		-
Mod. 3: Second Order Factor	149.07	18	<.001	.91	.86	.094	.046		26880.61
Mod. 4: Multilevel, One Factor W and B	97.68	41	<.001	.93	.91	.052	.067	.528	16945.44
Mod. 5: Multilevel, Four Factors with covariances, W and B*	-	-	-	-	-	-	-	-	-
Mod. 6: Multilevel, Second Order Factor W and B	82.07	40	<.001	.95	.93	.045	.062	.396	16930.26
Mod. 7: Multilevel, Second Order Factor W, and One Factor B	79.05	39	<.001	.95	.93	.045	.062	.493	16934.88
Mod 8: Multilevel, Second Order Factor W, Four Factors B*	-	-	-	-	-	-	-	-	-

Note. χ^2 = Chi Squared; CFI = comparative fit index; TLI = Tucker Lewis Index; RSMEA = Root-mean-square error of approximation; SRMR = Standardized root-mean-square residual; BIC = Bayesian information criterion

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Table 3

Correlations, Means, and Standard Deviations in Study 2

Variable	1	2	3	4	5	M	SD
1. Qualitative job insecurity		.77	.69	.71	.74	3.92	1.34
2. Social relationships	.79		.33	.48	.47	3.55	1.70
3. Employment conditions	.76	.37		.32	.28	4.66	1.84
4. Work conditions	.85	.64	.51		.40	4.05	1.44
5. Work content	.81	.58	.56	.68		3.42	1.63
M	2.70	2.37	3.17	2.70	2.57		
SD	.59	.81	.94	.65	.85		

Note. Correlations, means, and standard deviations of the Italian sample are presented below the diagonal, while Correlations, means, and standard deviations of the Belgian sample are presented above the diagonal.

* $p < .05$, ** $p < .01$, *** $p < .001$.

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Table 4

Results of Invariance Analyses for the Model of Qualitative Job Insecurity across Country (Italian, Belgian), Age (Young, Old), and Gender (Male, Female)

Groups	Model	χ^2	df	CFI	RMSEA	Δ CFI	Δ RMSEA
Country	Italy (N = 238)	47.77	19	.914	.080	–	–
	Belgium (N = 472)	69.69	18	.928	.078	–	–
	Configural invariance	123.23	38	.926	.056	–	–
	Metric invariance	154.47	42	.902	.061	-.024	-.005
	Scalar invariance	154.47	50	.919	.054	.017	-.002
	Uniqueness invariance	166.98	58	.905	.052	-.014	-.004
Age	Young (N = 182)	22.81	19	.981	.033	–	–
	Old (N = 510)	61.65	19	.949	.066	–	–
	Configural invariance	84.46	38	.956	.042	–	–
	Metric invariance	92.48	42	.952	.042	-.004	.000
	Scalar invariance	115.59	50	.937	.044	-.015	.002
	Uniqueness invariance	137.89	58	.928	.045	-.009	.001
Gender	Male (N = 252)	51.33	19	.918	.082	–	–
	Female (N = 438)	36.66	19	.972	.046	–	–
	Configural invariance	80.71	34	.954	.045	–	–
	Metric invariance	92.09	38	.947	.045	-.007	.000
	Scalar invariance	107.88	46	.939	.044	-.008	-.001
	Uniqueness invariance	114.00	52	.888	.042	-.051	-.002

Note. χ^2 = Chi squared; CFI = comparative fit index; RSMEA = root-mean-square error of approximation; Δ CFI = change in comparative fit index; Δ RMSEA = change in root-mean-square error of approximation.

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Figure 1

MQJIS Factorial Structure

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Appendix

Items of the MQJIS.

#	Dutch Version	English version	Italian version	Dimension
4	Ik vrees dat ik een andere directe leidinggevende zal krijgen in de toekomst.	I worry I might get another supervisor in the future.	Temo che potrei avere supervisore diverso in futuro.	Social relationships
8	Ik weet niet goed met welke collega's ik binnenkort zal moeten samenwerken.	I am not sure which colleagues I will be soon cooperating with.	Non sono certo di quali saranno i colleghi con cui dovrò lavorare prossimamente.	Social relationships
2	Ik ben onzeker over mijn kansen op bevordering.	I am insecure about my chances of promotion.	Non sono sicuro di avere la possibilità di avanzare di livello o di ottenere una promozione.	Employment conditions
7	Ik maak me zorgen over de verdere evolutie van mijn loon.	I worry about the growth of my salary.	Sono preoccupato rispetto alla possibilità di ottenere aumenti di paga in futuro.	Employment conditions
3	Ik ben bang dat ik binnenkort op een andere locatie of dienst zal moeten gaan werken.	I am afraid I might soon have to work in a different location or in a different department.	Ho paura che prossimamente dovrò lavorare in un luogo diverso o in un'altra struttura.	Working conditions
6	Er bestaat een kans dat ik in de toekomst meer werk zal krijgen	Chances are my workload will increase in the future.	C'è la possibilità che il mio carico di lavoro possa aumentare in futuro.	Working conditions
1	Ik voel me onzeker over de toekomstige inhoud van mijn functie.	I feel insecure about the future content of my job.	Non sono certo/a di quali saranno le mansioni che dovrò svolgere prossimamente.	Work content
5	Ik denk dat mijn werk in de toekomst minder interessant zal worden.	I think my work will become less interesting in the future.	Penso che il mio lavoro potrebbe diventare meno interessante in futuro.	Work content