MULTIDIMENSIONAL SCALE OF SUBJECTIVE WELL-BEING FOR EMPLOYED PERSONS: THEORETICAL MODEL AND STAGES OF DEVELOPMENT

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Abstract

The lack of theoretical models and comprehensive scientific tools to study employees' subjective well-being (SWB) has attracted much scientific attention. Therefore, there is a need for a multidimensional approach capable of measuring SWB at different levels in a reliable and standardized manner. This study aims to develop a theoretically valid and psychometrically tested Multidimensional Scale of Subjective Well-being for Employed Persons (MSWEP).

Methods: The MSWEP was developed based on the conceptual model frameworks of the Organization for Economic Co-operation and Development (OECD), the World Health Organization (WHO), and the Job Demands-Resources (JD-R) for well-being research. 4 organizations agreed to participate in the study: administration and services, healthcare, pharmaceutical, and energy sectors. 200 online surveys were sent to personalized emails provided by the organizations. Principal component analysis (PCA) with Varimax rotation was used to determine the factor structure. The Kaiser-Meyer-Olkin (KMO) indicator was used to determine the sample size. Bartlett's test of sphericity assessed the correlation between variables. To test the psychometric properties of the scale, internal consistency scores (Cronbach's alpha and MacDonald's omega coefficient), difficulty, and discrimination index were calculated.

Results: The Kaiser-Meyer-Olkin measure of sampling adequacy (KMO = 0.908). Bartlett's test showed a strong and statistically significant correlation (x^2 = 19479.18, $p < 0.001$). The weight factor on the respective scale was $\geq |0.40|$. The eigenvalue threshold for including items in the model was >1. After the PCA with 48 items, three items that did not fit into any factor structure were excluded from MSWEP. The final MSWEP consists of 45 items, grouped based on PCA results into 10 MSWEP determinants: subjective well-being, inclusion, social support, psychosocial risk, work intensity, psychosomatics, career development, health risks, financial security, and autonomy. The total variance explained by all factors is 62.39%. Cronbach's alpha indicated high internal consistency in 7 scales (0.797–0.925) and insufficient internal consistency in 3 scales (0.624–0.691). The difficulty index showed high values on three scales (5.05–5.69) and low values on one scale (1.57–1.74). The discrimination index scores comply with accepted scientific norms.

Conclusions: This research led to the development of the MSWEP, a reliable and valid instrument for assessing the subjective well-being of employees. The final version consists of 45 items grouped into ten theoretically based factors, providing a comprehensive assessment of occupational well-being. However, insufficient internal consistency was found for some scales, such as psychosocial risk (0.691), psychosomatic (0.671), and financial security (0.624). At the same time, high difficulty index values were found for social support and job insecurity (5.40-5.69), while lower values were observed for psychosomatic health (1.57-1.74). These shortcomings point to the need to refine or delete individual items to improve the accuracy and internal consistency of the instrument. Further studies with larger samples are needed to fully validate the suitability of the MSWEP for different domains and cultures.

Keywords: Subjective well-being, employed person, questionnaire, scale development, item analysis.

1. Introduction

The progress of nations, societies, and organizations is closely tied to improving individual well-being, which extends beyond economic indicators like gross domestic product (GDP). While GDP has traditionally been regarded as a key indicator of societal well-being, researchers have highlighted its

limitations and suggested the use of additional tools for a more accurate assessment of growth and welfare (Stiglitz et al., 2009).

In today's business environment, employee well-being is becoming a critical factor in ensuring organizational performance and growth (Mishra & Venkatesan, 2023). Studies indicate that a decline in well-being, particularly in the healthcare sector, leads to burnout, job turnover, dissatisfaction, and reduced productivity (Lee & Cha, 2021). Conversely, organizations that prioritize well-being often achieve higher employee satisfaction, better performance, and reduced sick leave (Monteiro & Joseph, 2023). These trends highlight the need for a multidimensional approach to assessing employee well-being, moving beyond traditional indicators like GDP or happiness metrics (Ruggeri et al., 2020). Existing tools often focus on narrow factors, overlooking the complexity of modern work environments.

The aim of this study is to develop the multidimensional scale of subjective well-being for employed persons: a theoretically grounded tool, and to evaluate its psychometric properties.

2. MSWEP development stages

2.1. Literature review

A review of the scientific literature on well-being at work, its determinants, conceptual models, and existing research instruments was conducted as part of this study.

2.2. Data analysis

The information obtained from the scoping review was analyzed to identify the conceptual models under which well-being at work is studied. The scientific community's lack of research tools often leads to a focus on the study of specific well-being factors.

2.3. Identifying research needs and problems

The scoping review of SBW research we conducted confirmed that many previous studies have focused on specific aspects of well-being at work, such as job satisfaction (Dreer, 2024), work engagement and the negative impact of the work environment (Felstead et al., 2013). However, several scholars have demonstrated the multidimensionality of the concept of well-being (Iglesias et al., 2017; Prilleltensky et al., 2015). Given the increasing understanding of well-being as a multidimensional phenomenon that includes mental health, job satisfaction, social relationships, and work-life balance, there is a growing need for more accurate and comprehensive measurement tools to capture the multidimensionality of well-being (Choi et al., 2022; Ruggeri et al., 2020).

2.4. Conceptualization and operationalization of research variables

Based on the OECD, WHO, and JD-R conceptual models, the research findings allowed the translation of theoretical concepts into observable and measurable variables. The conceptualization phase identified and refined the theoretical concepts of the study, such as subjective well-being, inclusion, social support, psychosocial risk, work intensity, psychosomatics, career development, health risks, financial security, and autonomy. This phase involved the development of detailed questions and indicators for each concept to ensure their empirical measurement.

2.5. Survey project design

A detailed development plan for the MSWEP was drawn up, defining the following aspects: the purpose of the survey, objectives, research questions, research sample, sample size, and data collection method.

2.6. Formulation and development of the MSWEP questions

Questions were carefully worded to ensure clarity and precision, avoiding ambiguous or unclear wording. A Likert scale was used to ensure a wide range of responses reflecting respondents' experiences and opinions. A question-word checklist was used to develop the questions (Fowler Jr & Cosenza, 2009).

3. Methods

3.1. Participants

The sample of respondents was selected using convenience sampling and the questionnaire was distributed to 200 participants. Participants represented a variety of genders, ages, occupations, and industries, including administration, healthcare, pharmaceuticals, and energy.

3.2. Measures

Employees' subjective well-being was measured using the researcher-developed MSWEP, which is based on 10 factors: subjective well-being, inclusion, social support, psychosocial risks, intensity, psychosomatics, career development, health risks, financial security, and autonomy.

Demographic questions included gender, age, work experience, and industry.

3.3. Procedure

The study was approved by the Ethics Committee of Riga Stradiņš University (No. 2-PEK-4/495/2024). Prior to participation, each respondent received an informed consent form explaining the purpose of the study, guarantees of anonymity and confidentiality, and the voluntary nature of participation. The questionnaire was distributed electronically and in paper format to ensure wider accessibility. Reminder emails were sent every four days.

3.4. Data analysis

Principal component analysis using Kaiser's criterion (eigenvalue > 1) and varimax rotation was used to determine the factor structure. Variables with factor loadings >0.4 were considered significant. Cronbach's alpha and McDonald's omega analyses were used to assess the internal consistency of the MSWEP. Means and discrimination indices were calculated to assess adherence to psychometric norms.

4. Results

4.1. Characteristics of respondents

The participants were 187 workers (29.9%), 130 women (69.5%) and 1 participant (0.5%) who identified as other. Participants ranged in age from 23 to 68 years (M = 46.91, SD = 11.83) and in work experience from less than one year to 47 years (M = 13.79, SD = 11.71). Participants came from the pharmaceutical sector (23.0%), the energy sector (24.6%), healthcare (20.9%) and administration/support services (31.6%).

4.2. MSWEP factor analysis

Previous studies have shown that a sample size of at least 150 respondents is required to obtain accurate results from exploratory factor analysis (EFA) (Hinkin, 1995). The criterion for item selection was a coefficient loading $\geq |0.40|$. The results showed that the sample size used for factor analysis (N=187) was adequate (KMO 0.908). Bartlett's tests pointed out to strong and statistically significant (x^2 = 19,479.18, p < 0.001). EFA revealed a 10-factor model structure: F1 – subjective well-being, F2 – inclusion, F3 – social support, F4 – psychosocial risk, F5 – intensity, F6 – psychosomatics, F7 – career development, F8 – health risks, F9. - financial security and F10 - autonomy. Factor loadings ranged from 0.437 to 0.870. All factors together explained 62.39% of the total variance. The eigenvalue threshold for retaining items in the model was >1 (Hair et al., 2013). These results confirm that the model effectively captures the main factors influencing well-being and provides a comprehensive and reliable framework for further analysis.

4.3. MSWEP reliability analysis

4.3.1. Difficulty index. The difficulty index measures the appropriateness of responses to Likert scale items, with accepted norms for a 6-point scale ranging from 2 to 5 (Kline, 2013). Difficulty index results indicate that subjective well-being, inclusion, professional growth, health risks, intensity, financial security, and autonomy were within the normative range. Elevated difficulty index scores were observed for Social Support (4.61-5.20), particularly for items related to trust in direct supervisors (5.17), matching skills to job responsibilities (5.20), and work that makes a positive contribution (5.05). Similarly, high scores were found on the Psychosocial Risk scale. In contrast, the Psychosomatics scale had lower difficulty index values (1.57-4.42), especially for items related to physical (1.57) and mental health (1.74).

4.3.2. Discrimination index. The discrimination indices for all scales fell within the scientifically accepted psychometric norms, ranging from 0.41 to 0.79. Overall, the survey questions demonstrate high accuracy and suitability for assessing various dimensions of well-being.

4.3.3. Internal consistency of the items. The reliability and internal consistency of the scale were assessed using Cronbach's alpha and McDonald's omega coefficients. As some of the MSWEP scales

contained only two items, McDonald's omega was also used for a more objective reliability assessment, as it is more appropriate for smaller scales (Kline, 2013). Cronbach's Alpha: high reliability for scales such as Subjective Well-Being (0.925), Inclusion (0.873), Social Support (0.813), Intensity (0.809), Health Risks (0.801) and Autonomy (0.800). Moderate reliability was observed for Professional Development (0.797). Lower scores were found for Psychosocial Risk (0.691), Psychosomatic (0.671), and Financial Security (0.624). McDonald's Omega: high reliability for the Subjective Well-Being (0.924), Inclusion (0.873) and Professional Development (0.800) scales. Acceptable reliability for the Social Support (0.774), Intensity (0.794) and Psychosomatics (0.705) scales. Lower values for the Psychosocial Risk scale (0.658), indicating a need to review or adjust the items. Omega coefficients could not be calculated for Health Risks, Financial Security, and Autonomy as these categories contained fewer than three items.

5. Discussion

This study developed and psychometrically validated MSWEP, which demonstrated high overall internal consistency. Dimensions such as Subjective Well-being (Cronbach's alpha = 0.925) and Inclusion (Cronbach's alpha = 0.873) showed strong reliability, further supported by McDonald's omega values (0.924 and 0.873, respectively). These findings align with previous research, such as (Magare et al., 2022) and (Linton et al., 2016), which reported similar reliability in assessing well-being and workplace support. However, lower Cronbach's alpha values were observed in the following scales: Psychosocial Risk (0.691), Psychosomatics (0.671), and Financial Security (0.624). These values highlight differences in respondents' experiences with workplace stressors, as noted by (Nielsen et al., 2015). McDonald's omega values for these dimensions also indicated lower reliability, suggesting a need to review the structure of these items. The lower scores for Financial Security likely stem from its subjective nature and influence by external factors.

Overall, the MSWEP has proven to be a reliable tool for assessing professional well-being, particularly in dimensions like Subjective Well-being and Inclusion. To enhance the instrument's precision, improvements are needed in the measures of Psychosocial Risk, Psychosomatics, and Financial Security.

6. Conclusion

MSWEP is a reliable and valid tool for assessing factors influencing employees' subjective well-being, comprising 45 items across 10 theoretically grounded factors. Despite careful development, some scales showed lower Cronbach's alpha values, such as Psychosocial Risk (0.691), Psychosomatics (0.671), and Financial Security (0.624), indicating the need for refinement. High difficulty index values were observed in Social Support and items related to trust in supervisors (5.17), skill alignment (5.20), and work contribution (5.05), while Psychosomatics exhibited low values for physical (1.57) and mental health (1.74). These scales and items require review or exclusion. Further validation with larger samples is needed to confirm MSWEP's suitability across industries and cultures.

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