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The Polish adaptation of the unidimensional target-neutral scale of commitment (K.U.T.-PL)

Abstract: *The Klein et al. Unidimensional Target neutral* (K.U.T.) commitment measure is a promising short self-report measure forming a counterpoint to the popular multidimensional approach to the assessment of commitment. The goals of the present study were to examine the construct reliability, convergent, discriminant, an incremental validity; and the measurement invariance (sex, education, job position) of the Polish version of K.U.T. The scale was evaluated using a sample of adults working for Polish organizations. Confirmatory factor analyses confirm original structure of the K.U.T.-PL and its measurement reliability and validity. Moreover, performed analysis showed that K.U.T.-PL was invariant across sex, education, and job position group. In conclusion, the findings confirm that the Polish adaptation of the K.U.T. presents solid psychometric properties and initial evidence of validity.

Keywords: *Commitment, K.U.T. measure, scale adaptation, psychometric analysis*

INTRODUCTION

In recent years researchers and practitioners have shown significant interest in the phenomenon of organizational commitment, usually defined as the relative strength of an individual's identification with and involvement in a particular organization (Mowday *et al.*, 1982, p. 27) or a specific type of psychological bond between employees and the organization (Klein, Molloy, & Brinsfield, 2012, p. 137). This is due to the fact that organizational commitment has been linked to a number of important outcomes, including in-role and extra-role performance (Mathieu & Zajac, 1990; Riketta, 2002; Wright & Bonett, 2002; Cetin *et al.*, 2015; Stanley & Meyer, 2016), turnover intention (Cohen, 1993), absenteeism (Gellatly & Hedberg, 2016), job satisfaction (Mathieu & Zajac, 1990), and well-being (Chris, Maltin & Meyer, 2016). Hence, for many organizations, hiring and retaining highly committed employees is a key component of their people management strategy to achieve business goals and build competitive advantage for companies (Kehoe & Wright, 2013, van Rossenberg, Cross & Swart, 2022).

Although the phenomenon of organizational commitment has been studied by researchers since the 1960s (Becker, 1960), the need to analyze this construct is still strongly emphasized, both because of the lack of consensus on its definition and dimensions (Klein, Molloy, & Cooper, 2009), and the need to strengthen the theoretical framework, as the previous commitment theory does not account for the dynamic interrelationships among multiple commitments (Klein, Solinger, & Duflot, 2022). As a result, this leads to the need to develop new measurement tools that, first, address contemporary research challenges (van Rossenberg *et al.*, 2018), second, distinguish between different targets of commitment (Klein, Molloy, & Brinsfield, 2012), and third, deal with the limitations of existing measures (Solinger *et al.*, 2008; Cohen, 2014). On a practical level, this will allow a more precise assessment of the specific types of the bonds (Klein *et al.*, 2022) that employees have with the organization and/or other targets

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(goals, leaders, co-workers, etc.), which will make it possible to manage employees more effectively and increase their professional efficiency.

In response to these theoretical and research challenges, Klein *et al.*, (2012) revised the conceptual definition of commitment and Klein, Cooper, Molloy, and Swanson (2014) developed the *Klein et al. Unidimensional Target neutral (K.U.T.)* measure of commitment. That measure was originally developed in English and validated using U.S. samples but has since been translated or adapted for other languages and validated using samples from other countries, including: Czechia (Procházka *et al.*, 2019), Italy (Colledani *et al.*, 2018), and Turkey (Şenel *et al.*, 2020). The clarity of the theoretical construct behind K.U.T., as well as its high psychometric parameters make this tool a viable alternative to other available questionnaire measures for assessing commitment, including *Organizational Commitment Questionnaire* – OCQ, (Mowday, Steers, & Porter, 1979), O'Reilly and Chatman's (1986) commitment questionnaire, or *Three Component Model of Organizational Commitment* – TCM (Allen & Mayer, 1990; Meyer & Allen, 1991).

In Poland, so far there has only been a cultural adaptation of the TCM measures based on Mayer's and Allen's concepts (Bańka, Bazińska, & Wołowska, 2002; Wnuk, 2017). Therefore, an alternative tool is lacking that would allow for a more precise assessment of the commitment concept, free from the identified limitations of the TCM (e.g., Jaros, 2007; Cohen, 2014), and allowing the study of worker commitments to various targets. Taking into consideration all the above, the aim of the study is the Polish adaptation and validation of K.U.T. scale developed by Klein *et al.* (2014). To provide evidence on the reliability and validity of the Polish adaptation of K.U.T.-PL scale, we tested its factor structure, construct reliability, as well as convergent, discriminant and incremental validity. We also tested the measurement invariance of K.U.T.-PL between the available sub-groups (sex, education level and job position).

MODELS OF COMMITMENT

Commitment has been defined and operationalized in a variety of ways (Klein, Molloy, & Cooper, 2009). The first widely adopted definition was proposed by Porter *et al.* (1974), interpreting commitment as identification with a particular organization, and pointing out to the three factors that characterize it: people who are committed to the organization believe in and accept its goals and values, they are willing to put effort in their work, and demonstrate a strong wish to remain a member of the organization. Currently, the conceptualization of commitment is dominated by two approaches: as a unidimensional construct (Klein *et al.,* 2012; Klein & Park, 2016) and the multi-dimensional TCM (Allen, 2016; Meyer & Herscovitch, 2001). This latter approach, introduced to the literature by Allen & Meyer (1991), constituted an important stage in the development of the commitment literature as it represented an effective and substantial integration of several previous conceptualizations. As stressed by Allen (2016), multidimensional models of commitment try to account for the characteristics of the bonds between individuals and the focus of their commitment. Each commitment dimension is treated within these models as a separate construct that could, further on, be examined as a single entity or in combination with other dimensions of commitment. In the TCM, Meyer and Allen (1991) distinguished the following dimensions: *affective commitment*, *continuance commitment*, and *normative commitment*. The *affective* component refers to an employee's emotional attachment to the organization, and identification with it. *Continuance commitment* is the awareness of the costs associated with leaving the organization. The *normative* component of attachment, on the other hand, is a sense of moral obligation to stay with the organization.

The unidimensional approach to commitment was introduced in earlier conceptualizations (e.g., Porter *et al.*, 1974), and further refined more recently by Klein and colleagues (Klein, Molloy & Brinsfield, 2012; Klein & Park, 2016; Klein, Solinger & Duflot 2022). As noted here, and stressed by Klein and Park (2016), earlier conceptualizations of the organizational commitment include both unidimensional and multidimensional perspectives. However, there are also established literatures on commitment to other workplace targets (e.g., goals, career, decisions) that are solely unidimensional. The current unidimensional approach presents a narrower, more precise, and unambiguous view of commitment. Klein, Molloy and Brinsfield (2012) essentially argued that the TCM model uses commitment as a very broad umbrella term referring to very distinct types of attachments or bonds. They further argue that the term commitment should only refer to a singular, very specific type of bond. In addition, they argued that commitment researchers had been treating commitment to different foci or targets – organization, career, goal, union, team, supervisor – as distinct constructs despite the phenomenon of commitment being largely the same regardless of the target of that commitment.

Thus, the Klein and colleagues (2012) conceptual definition, and the subsequent corresponding measure, of commitment is intentionally target neutral. This does not mean that the target does not matter or that targets are interchangeable, but rather that the same definition, process model, and measure can be used across the study of different workplace commitment targets. This perspective recognizes that the organization is not always a relevant target, yet commitment is still relevant to organizations because of commitments to other workplace targets (Klein, Molloy, & Brinsfield, 2012). Furthermore, Commitment Systems Theory (Klein, Solinger, & Duflot, 2022) explains how coherent systems of the multiple commitments to different targets can be described and studied. The prioritization of targets other than the employing organization may result from, for instance, the form of employment. For example, for temporary employees or contractual workers commitment to a project

may bear more significance that commitment to the organization in which they are doing the work. Therefore, the unidimensional, target neutral approach creates an opportunity for the more direct examination of different target commitments and to the multiple commitments that workers simultaneously hold. It also allows for insights into which targets are the most relevant in which contexts, and the key factors for facilitating the formation and maintenance of those commitments (Klein, Molloy & Brinsfield, 2012).

As this research takes the unidimensional target-neutral approach, it is discussed here in more detail. Specifically, from the Klein *et al.* (2012) unidimensional perspective, organizational commitment is defined as a specific type of psychological bond between a worker and the employing organization. This perceived bond is a socially constructed psychological state that is volitional and reflects dedication to and responsibility for the organization (Klein, Molloy & Brinsfield, 2012). In redefining the concept of commitment Klein and colleagues (2012) considered three primary objectives. The first was to conceptualize commitment as a unique type of psychological attachment or bond, to emphasize the distinctiveness of the commitment construct. The second objective stressed that the conceptualization should be applicable to all commitment targets. The third objective consisted of narrowing the boundaries of the defined construct to avoid the inconsistencies and confounds with other constructs that had been critiques of prior definitions (Klein & Park, 2016).

While discussing this approach it is also worthwhile to stress that not all bonds are commitment; however, high commitment causes individuals to exert more effort and allocate more resources to support a given target, while being less ready to withdraw from that target (Klein, Molloy & Brinsfield, 2012). On the other hand, regarding commitment itself, to capture its specificity and uniqueness, we can relate it to other types of psychological bonds and demonstrate it in a discontinuum. Distinguishing commitment in such a manner is justified by the fact that various types of bonds reflect a variety of psychological phenomena occur in different circumstances and can have various psychological and behavioral implications (Klein *et al*., 2012; 2022). Among those other types of bonds, we may indicate: acquiescence, instrumental bond and identification. Viewed from the perspective of continuum, commitment (which presupposes volition, dedication, and felt responsibility) is located behind acquiescence and instrumental bond, but before identification (which denotes merging of oneself with the target). As a matter of course, it is necessary to take into consideration that there is no clear-cut separation of boundaries here. The description of commitment versus other types of bonds provides a good illustration of the motivational mechanism of engaging in the bond and the way such a bond is experienced. In the case of commitment, it is the embracement of the bond, which strongly highlights the volitional aspect, but not the transactional or normative one.

This theoretical conceptualization allowed Klein *et al.* (2014) to develop the *Unidimensional Target neutral (K.U.T.) Commitment Measure*. This tool consists of a 4-item self-report scale, where items are measured on either a 5 or 7-point scale ranging from 1 ('not at all') to 5 or 7 ('extremely'). The individual items were developed by a team of researchers in such a way as to correspond to the adopted definition of commitment. Next, in the pilot study process on 5 populations with a total sample size of 2,487 respondents and with regard to 8 different targets of commitment (organization, organizational goal, supervisor, team, coworker, occupation, union and academic goal), a psychometric assessment of the created scale was performed, including: factor structure (single factor), reliability (Cronbach Alpha between .86 to .97 for individual targets of commitment), convergent validity, and incremental validity. A comparison with other measures of commitment was also conducted, including the TCM (Allen & Mayer, 1990; 1996) and OCQ (Mowday *et al.*, 1979). As a result of the validation procedure Klein *et al.* (2014) concluded that the one-dimensional scale of measuring target-neutral commitment (K.U.T.) had a high internal consistency, as well as good convergent and concurrent validity. It also provides a better explanation of related constructs (identification, job satisfaction, engagement, turnover intention, task performance, and extra role-performance) than the previously published scales, including the TCM (Allen & Mayer, 1990) and OCQ (Mowday *et al.*, 1979).

METHOD

Translation

First, the English version of the K.U.T. was translated into Polish by two of the authors of the current study and one English language specialist with a background in psychology. Then, following the recommendations of ITC Guidelines for Translating and Adapting Tests (International Test Commission, 2017), the items were back-translated into English by two English translators with experience in the social sciences. Finally, we compared the English and back-translated versions, and created a Polish version (see Appendix) after some corrections for words, meanings, and content of each item. The same procedures were applied to the other scales assessed in this study with the exception of job satisfaction, which has previously been adapted to Polish (Turek, 2019), and three component model of organizational commitment – TCM adopted previously by Bańka, Bazińska and Wołowska (2002).

STUDY 1

Sampling and research procedure

The data were collected from two different sources. The first sub-sample was obtained through a research firm operating in Poland and used the Computer-Assisted Telephone Interview (CATI) method (N=200). The second sub-sample consisted of 546 working adults who had previously participated in postgraduate studies conducted

at the Warsaw School of Economics in Poland. The combined sample was thus N=746. All of respondents were adults who had worked, full-time, for at least 6 months in their current position. The participating employees evenly represented small (33%), medium (35%) and large companies (31%), from a variety of sectors, the most common being: financial agency services and banking (20%), wholesale and retail trade (13%) and manufacturing (10%). Among the respondents, the majority were female (68%), under age 35 (78%), university educated (82%), held non-managerial positions (80%), with most having 2 years (52%) or 2-5 years (24 %) of job tenure.

Measures

In addition to commitment, this study examined a set of other constructs selected based on commitment theory and the nomological assumptions of the construct presented by Klein *et al.* (2012). Specifically, we examine in-role performance, extra role behavior, identification, job satisfaction, and turnover intentions. The choice to devote effort on behalf of the target (reflected by in-role performance, extra role behavior and engagement) and to continue with the target (exemplified by turnover intentions) are the primary outcomes of commitment (Klein *et al.*, 2012). Therefore, positive relationships are expected between commitment assessed by K.U.T.-PL and these commitment outcomes. Identification and job satisfaction were included because the K.U.T.-PL is expected to be positively related to these other psychological states. In addition, these are frequently examined correlates of commitment and, because of some conceptual similarly, they provide strong evidence for the distinctiveness of commitment. The response scales used for all measures were 5-point Likert scales, where 1 = strongly disagree/never/not at all and 5 = strongly agree/always/extremely. All scale reliabilities (McDonald's ω) exceeded 0.7 and were thus deemed to be acceptable.

K.U.T-PL was measured using the 4-item *Unidimensional Target neutral (K.U.T.) Commitment Measure*, empirically validated by Klein *et al.* (2014).

In-role performance (IRP) was self-assessed with the 6-item Williams and Anderson (1991) scale. The performed CFA showed good fit to the data (χ^2 = 32.524, *df* = 8 p < .001; RMSEA = .064; CFI = .984; TLI = .971; SRMR = .017). Sample items include – *Adequately completes assigned duties*, *Meets formal performance requirements of the job*.

Extra Role Behavior (ERB) was self-assessed with the 5-item Lehman and Simpson (1992) scale. CFA showed very good fit to the data (χ^2 = 2.999, *df* = 3 p = .392; RMSEA = .001; CFI = 1.000; TLI = 1.000; SRMR = .011). Sample items include – *Did more work than required; Tried to think of ways to do job better*.

Organizational Identification was self-assessed with the 10-item Mael and Tetrick (1992) scale. The performed CFA showed that two factors model (*identification with organization and team*) have the best fit to the data (χ^2 = 107.889, *df* = 33 p < .001; RMSEA = .055; CFI = .964; TLI = .951; SRMR = .052). An example of items this scale is: *When someone criticizes this organization, if feels like a personal insult; I have a number of qualities typical of the people in this organization.*

Engagement (ENG) was measured with the 13-item May, Gilson, and Harter (2004) scale. The performed CFA showed that three factors of engagement (cognitive, emotional, and physical) have the best fit to the data (χ^2 = 133.623, *df* = 44 p < .001; RMSEA = .052; CFI = .959; TLI = .939; SRMR = .049). The following are examples of the items from this scale: *Performing my job is so absorbing that I forget about everything else*; *I really put my heart into my job*.

Turnover intention (TI) was measured with the 3-item measure developed by Hom *et al.* (1984). The performed CFA showed perfect fit to the data (saturated model). Sample items include: *I often think about quitting my job; Do you intend to leave your organization in the next 12 months?*

Job satisfaction (JS) was measured with the 3-item tool *Michigan Organizational Assessment Questionnaire – JS Subscale* (Cammann *et al.*, 1983). The performed CFA showed perfect fit to the data (saturated model). Examples of items from this scale are: *In general, I like working here*; *All in all, I am satisfied with my job*.

Statistical Analyses

Structural equation modeling (SEM) methods as implemented by AMOS ver. 27 were used to evaluate the factorial validity of K.U.T.-PL. A one factor model was tested as proposed by the authors (Klein *et al.*, 2014) of the original scale. Overall model fit was evaluated using the comparative fit index (CFI), Tucker-Lewis index (TLI), standardized root mean residual (SRMR), and root mean square error of approximation (RMSEA). Although there are no universally accepted metrics of model fit (Kline, 2016), higher values indicate better fit for the CFI and TLI, whereas lower values indicate better fit for the SRMR and RMSEA. The following criteria for adequate model fit were adopted: CFI and TLI > .95 and SRMR and RMSEA < .08 (Kline, 2016). Maximum likelihood estimation methods were used and the input for each analysis was the covariance matrix of the items or the scale-scores.

The construct reliability and validity of K.U.T.-PL was evaluated using composite reliability (CR), average variance extracted (AVE) and discriminant validity (Fornell & Larcker, 1981). The consistency reliability was tested through McDonald's omega (McDonald, 1999) and the CR index. For McDonald's ω and CR we used standard threshold higher than 0.7 and for AVE higher than 0.5. The construct and discriminant validity was evaluated with CFA comparison of measurement model and with HTMT ratio (heterotrait-monotrait) (Henseler *et al.*, 2015), with a threshold value less than 0.90.

To test measurement invariance across participants from various groups we used Multigroup Confirmatory Factory Analysis (MGCFA) (Milfont & Fischer, 2010). This procedure allows us to examine whether respondents

from different groups interpret the same measure in a conceptually similar way. According to the Milfont and Fischer (2010) recommendation we assessed configural, metric, and scalar invariance between groups distinguished on the basis of: sex, education and job position. To evaluate the metric and scalar measurement invariance, we used the recommended cut-off ΔCFI ≤ .01 and ΔRMSEA ≤ .01 (Cheung & Rensvold, 2002).

RESULTS

Before combining the two sub-samples, and treated as one, we checked (using *t-test*) for any significant differences between the two samples on the variables of interest. Conducted analysis revealed no significant differences (the results of these analyses are shown in Table 2), so the sub-samples were combined and analyzed as one.

Factor structure and construct reliability of the K.U.T.-PL

To examine the factorial validity, the fit of original single-factor model was assessed using CFA. Estimated one-factor model showed very good fit to the data. All items loaded from .896 to .906 significantly on latent factors for four-item K.U.T.-PL ($p < .001$) (Table 1).

Next, as recommended by Fornell and Larcker (1981). We examine average variance extracted (AVE) which is a measure of the amount of variance that is captured by a construct in relation to the amount of variance due to measurement error, with composite reliability (CR) and internal consistency using the McDonald's ω. The analyses performed showed that AVE is more than the cut-off value of .50, CR was .945 and ω was .95. Overall, the values obtained indicate high reliability of K.U.T.-PL.

Convergent, discriminant and incremental validity

Pearson correlation was used to evaluate the convergent validity of the K.U.T.-PL with other examining variables: in-role performance (IRP), extra-role behaviors (ERB), organizational identification (OI), engagement (ENG), job satisfaction (JS) and turnover intention (TI).

Means, standard deviations, reliabilities, and intercorrelations among the study variables are presented in Table 2. As shown K.U.T.-PL was positively correlated (with 95% confidence intervals – CIs) with the IRP (r = .496, 95%CI = .439; .548), ERB (r = .436, 95% CI = .376; .492), OI (r = .625, 95%CI = .579; .667), ENG (r = .667, 95%CI = .625; .705), JS (r = .685, 95%CI = .645; .721) and negatively with TI (r = -.609, 95%CI = -.652; -.562). This is consistent with prior research showing strong correlations between implicit and explicit assessments of similar constructs (Klein *et al.*, 2014; Procházka *et al.*, 2019; Şenel *et al.*, 2020).

Next, using CFA for validation purposes, we tested a seven-factor model for K.U.T.-PL with IRP, ERB, OI, ENG, JS, and TI. A seven-latent variables model provided the good fit to the data ($\chi 2 = 1870.915$, $df = 706$; $p < 0.001$; RMSEA = 0.047; CFI = 0.931; TLI = 0.924; SRMR = 0.052). Following Kline's (2016) recommendation in CFA to identify residual covariances we have adopted the level of > .10. Higher levels indicate a likely specification error and could inform a decision to respecify or modify a model. Obtained model showed good fit indices values in each indicator, residual covariances were below 0.10 therefore the modification indices were not necessary to apply in this model. Based on the analysis, it can be confirmed that K.U.T.-PL has construct validity.

For evaluate the discriminant validity of the K.U.T.-PL we used HTMT ratio. According to Henseler *et al.* (2015), the HTMT criterion is the ratio of the average of the correlations of the items belonging to all the variables in the study (the heterotrait-monotrait correlations) to the geometric mean of the correlations of the items belonging to the same variable. The authors stated that the HTMT value should be below 0.90 in theoretically close concepts and below 0.85 in distant concepts (Henseler *et al.*, 2015). Table 3 shows that the HTMT coefficients are below the threshold value those confirms the existence of discriminant validity in the constructs.

Table 1. Descriptive statistics for K.U.T. items

Item	M	*SD*	Skewness	Kurtosis	CFA loading	AVE	C.R.
How committed are you to your organization?	3.69	0.989	-0.290	-0.765	0.896	.811	.945
To what extent do you care about your organization?	3.63	1.076	-0.469	-0.504	0.897		
How dedicated are you to your organization?	3.52	1.057	-0.262	-0.617	0.900		
To what extent have you chosen to be committed to your organization?	3.64	0.995	-0.323	-0.571	0.909		
CFA fit statistics for the structural model	$\chi^2 = 5.852$, $df = 2$; $p = 0.054$; RMSEA = 0.051; CFI = 0.999; TLI = 0.996; SRMR = 0.006						

Notes: AVE - Average Variance Extracted; CR - Composite Reliability; N=746

Table 2. Means, standard deviations, reliabilities, and intercorrelations among variables

	Total sample M	*SD*	Sample N=200 M	SD	Sample N=546 M	SD	*t-test*	1	2	3	4	5	6	7
1. COM	3.62	0.95	3.59	0.97	3.65	0.93	-0.870	(.95)						
2. IRP	4.18	0.68	4.20	0.63	4.16	0.73	0.817	.496**	(.81)					
3. ERB	3.08	0.84	3.12	0.81	3.03	0.86	1.484	.436**	.360**	(.79)				
4. OI	3.24	0.72	3.24	0.72	3.23	0.71	-0.043	.625**	.393**	.291**	(.82)			
5. ENG	3.40	0.65	3.42	0.65	3.39	0.64	0.451	.667**	.479**	.531**	.526**	(.82)		
6. TI	2.62	1.39	2.69	1.41	2.54	1.36	1.391	-.609**	-.424**	-.264**	-.495**	-.464**	(.94)	
7. JS	3.87	1.08	3.84	1.08	3.89	1.07	-0.651	685**	.550**	.366**	.534**	.558**	-.708**	(.92)

Notes: COM – *Organizational Commitment*; IRP – *In Role-Performance*; ERB – *Extra Role Behavior*; OI – *Organizational Identification*; ENG – *Engagement;* TI – *Turnover Intention*; JS – *Job Satisfaction*; In brackets, reliability McDonald's ω;

** $p < .01$.

Table 3. Discriminant validity of K.U.T.-PL

	Heterotrait-Monotrait ratio of correlations (HTMT)					
	1	**2**	**3**	**4**	**5**	**6**
1. COM						
2. IRP	.565					
3. ERB	.505	.464				
4. OI	.705	.481	.359			
5. ENG	.760	.620	.656	.646		
6. TI	.648	.486	.308	.568	.538	
7. JS	.734	.639	.359	.615	.656	.766

Notes: COM – *Organizational Commitment*; IRP – *In Role-Performance*; ERB – *Extra Role Behavior*; OI – *Organizational Identification*; ENG – *Engagement;* TI – *Turnover Intention*; JS – *Job Satisfaction*.

Since measuring commitment with K.U.T.-PL has discriminant validity, another important question is whether it allows to increase the predictive ability beyond that provided by an existing methods of assessment employee behaviors (Hunsley & Meyer, 2003). Klein *at al.* (2014) claims that K.U.T. explain significantly more variance of attitudes and behaviors than prior commitment measures, so the use of K.U.T. with other measures, attitudes and employee bonds could increases predictive power in explaining employee behavior and their continuance to stay in organization.

To evaluate the incremental validity of the K.U.T.-PL we conducted a hierarchical linear regression analysis with K.U.T.-PL scores entered at step 1 and other predictors (engagement, identifications, and job satisfaction) of the in-role performance, extra-role behaviors and turnover intention added to the model at step 2. As shown in Table 4, K.U.T.-PL explained both overlapping and unique portions of criterion variance in most of the outcomes. As indicated in Table 4, when the other predictors were entered at Step 2 into a model containing K.U.T.-PL, it explained additional variance in in-role performance, extra-role behaviors, and turnover intention. Therefore, we can say that K.U.T.-PL confirmed incremental validity.

Measurement invariance of the K.U.T.-PL between the examined groups

To test measurement invariance distinguished on the basis of sex, education level and job position we analysis three levels determining different outcomes: configural (which refers to accuracy of the measurement model across samples and informs that the analyzed structure is the same across compared groups), metric (discerning whether factor loadings are equivalent across groups and whether the latent construct is understood in the same way), and scalar (which allows for meaningful comparison of latent mean scores between the analyzed samples). The assessment at each level is based on CFI and RMSEA indices. The basic condition is that the structure at the configural level should initially demonstrate a good fit and if this model is well-fitted, then the differences in fit indices between subsequent models are compared (the differences between the configural and metric level, and between the metric and scalar level). Table 5 presents the related tests for multigroup models for sex, education level and job position groups The results show that all the nested models represented a good fit to the data, with the resulting ΔCFI and ΔRMSEA values of ≤0.01. These suggest that the K.U.T.-PL provides an assessment of

Table 4. Incremental validity of the K.U.T.-PL in the outcome prediction

Dependent variable	Step 1 K.U.T.-PL (β)	Step 2 K.U.T.-PL with other predictor (β)	ΔR^2
In-role performance	.496		.246
		Engagement (.317)	.285
		Identification (.411)	.257
		Job satisfaction (.223)	.329
Extra-role performance	.436		.189
		Engagement (.148)	.293
		Identification (.417)	.189
		Job satisfaction (.350)	.199
Turnover intention	-.609		.370
		Engagement (-.539)	.375
		Identification (-.491)	.391
		Job satisfaction (-.233)	.529

Notes: In brackets, β for K.U.T.-PL

Table 5. Fit measures in measurement invariance tests for the K.U.T.-PL between groups

Grouping variable	Level of invariance	χ^2	*df*	CFI	RMSEA	ΔCFI	ΔRMSEA
Sex (Men vs Woman)	Configural invariance	10.419	4	.998	.046	-	-
	Metric invariance	16.984	7	.996	.044	-.002	-.002
	Scalar invariance	25.728	10	.995	.042	-.003	-.004
Education (Secondary vs High)	Configural invariance	11.553	4	.994	.071	-	-
	Metric invariance	14.646	7	.994	.054	0	-.017
	Scalar invariance	22.141	10	.991	.057	-.003	-.014
Job position (Managerial vs Non-managerial)	Configural invariance	14.008	4	.996	.058	-	-
	Metric invariance	18.678	7	.996	.047	0	-.011
	Scalar invariance	22.337	10	.995	.041	-.001	-.017

commitment that is equivalent across the examined sub-groups.

STUDY 2

The second study aimed to test psychometric stability of the K.U.T.-PL and criterion validity. For this aims, a double study (test-retest) of K.U.T.-PL was conducted after 4 weeks and K.U.T.-PL was compared with another tool for measuring organizational commitment – TCM developed by Allen and Mayer (1990; 1996).

Sampling and research procedure

The sample (N=282), consisted of randomly selected employees who participated in postgraduate studies at the Warsaw School of Economics who completed an online questionnaire available on the Microsoft-Forms platform. All of respondents were adults who had worked, full-time, for at least 6 months in their current position. Among the respondents, the majority were female (57%), between 36-45 age (52%), with most having 6-10 years (32%) or 11-20 years (34%) of job tenure.

Measures

K.U.T-PL was measured using the 4-item *Unidimensional Target neutral (K.U.T.) Commitment Measure*, empirically validated by Klein *et al.* (2014).

Three Component Model of Organizational Commitment (TCM) was measured with the 18-item measure developed by Allen and Mayer (1990; 1996) and adapted in the Polish context by Bańka, Bazinska, & Wolowska, (2002).

The response scales used for two measures were 7-point Likert scales, where 1 = strongly disagree not at all and 7 = strongly agree/extremely

RESULTS

Test-Retest Reliability

Test-retest reliability was estimated by computing the Pearson correlation (with 95% confidence intervals – CIs) for a four-week interval. For the test participants' mean score was 4.97 (SD = 1.34); for the retest, participants' mean score for the total scale was 4.98 (SD = 1.29). The results indicated very good temporal

stability for the K.U.T.-PL over said period of time (r = .887; 95%CI = .859; .909).

Criterion Validity

The criterion validity of the K.U.T.-PL was evaluated through Pearson correlations using (TCM) developed by Allen and Mayer (1990). Based on original validation of K.U.T. (Klein *et al*., 2014), it was predicted that there would be a moderately high correlation between K.U.T.-PL and affective and normative organizational commitment, and a weaker correlation with the continuance commitment dimension. The results showed that the highest correlations occurred with regard to affective commitment (r = .729; 95%CI = .669; .780), and normative commitment (r = .658; 95%CI = .587; .720), and the lowest with regard to continuance commitment (r = .366; 95%CI = .261; .463).

These results point out that the K.U.T.-PL has adequate criterion validity.

DISCUSSION

The results in this study indicate that the Polish adaptation of the Klein *et al.'s* (2014) Unidimensional Target-neutral scale of commitment (K.U.T.) has adequate psychometric properties, including construct and criterion reliability, internal consistency, discriminant, incremental validity and psychometric stability.

Reflecting consistency with the original study (Klein *et al.*, 2014), and other cultural language and adaptation (Colledani *et al.*, 2018; Procházka *et al.*, 2019; Şenel *et al.*, 2020) results point to a 4-item single-factor scale for the Polish adaptation of the K.U.T.-PL, as this one-dimensional model showed overall very good model fit. In this direction, the present study provides further evidence of K.U.T. unifactorial structure across others language versions, and in very different samples.

When it comes to reliability, both the AVE, internal consistency, and composite reliability of the K.U.T.-PL were on a high level. This is consistent with both the original validation and cultural adaptations where reliability was rated above 0.9.

To assessed convergent validity of the K.U.T.-PL we used similar variables which were used with the original study (Klein *et al.*, 2014), and Czechia cultural adaptation (Procházka, *et al.*, 2019). K.U.T.-PL was positively related with the IRP – r = .49 (.42 in original study and .22 in Czechia study), ERB – r = .44, (.28 in original study and .37 in Czechia study), OI – r = .62 (.53 in original study), ENG – r = .67 (.72 in original study), JS – r = .50 (.57 in original study and .66 in Czechia study), and negatively with TI – r = -.61 (-.43 in original study and -.60 in Czechia study). We can note that the differences obtained are not significant and are probably due to both socio-cultural factors and the characteristics of the study population. Overall, we confirmed the convergent validity of the K.U.T.-PL measurement.

Next, following the recommendations to evaluate incremental validity (Hunsley & Meyer, 2003) we check the predictive power of the K.U.T.-PL with other predictors (engagement, identifications, and job satisfaction) of the in-role performance, extra-role behaviors and turnover intention. The results indicate that K.U.T.-PL most strongly predicts IRP and TI when was combined with job satisfaction measurement, while no large increase in explained variance was observed for IRP when combined with both identification and engagement measurement in the regression model. In contrast, for ERB, the largest increase in explained variance was observed when K.U.T.-PL was paired with engagement measurement and the smallest increase was observed when identification and job satisfaction measurement were paired. Thus, it can be said that although K.U.T.-PL are theoretically and statistically different concepts then OI, it overlaps in explaining variance for both IRP and ERB. Thus, it appears that testing these variables simultaneously does not significantly increase predictive power in explaining employee performance.

Finally, findings of factorial invariance suggest that the K.U.T.-PL measures commitment equivalently across sex, education, and job position groups, and that, findings proved that K.U.T.-PL to be invariant across these specific groups. Specifically, following Chen (2007) the results showed that one factor was found in the different groups (configural invariance). In addition, the items showed the same association with the factor, regardless of the characteristics of the samples (metric invariance) and the perception of the scale items was also similar for each of the groups (scalar invariance). That is, the theoretical dimensions underlying the measurement model were perceived in the same way by men and women, secondary and high educated employees as well as managers and non-managers (Sass, 2011). The present study those confirms findings of other measurement invariance studies of the K.U.T. (Procházka *et al.*, 2019; Şenel *et al.*, 2020).

To summarize, this paper delivers the proof that K.U.T.-PL is reliable and valid and can be used in Polish cultural contexts for different social and occupational groups. The theoretical implication and the main conclusion are that our findings support previous analyses and evidence showing the tool's consistency, theoretical and statistical distinctiveness from other measures examining employee attitudes and bonds with the organization (Klein *et al.*, 2014) and, most importantly, high predictive power of employee performance and turnover intention.

Although there are existing measures of commitment in the literature, using the K.U.T.-PL has several advantages. Conceptually, the K.U.T.-PL is based on a more precise definition with clear boundaries, that better distinguishes commitment from other constructs. Empirically, the tool has stronger psychometric properties and is less confounded resulting from that clarity and precision. While not examined in this study, (Klein *et al.*, 2014) demonstrated that the K.U.T. has less overlap with measures of attitudes than the TCM affective scale and explains more variance than all three TCM scales (Allen & Meyer, 1996) combined after controlling for those same confounds for employee behavior. In short, using the

K.U.T.-PL eliminates many of the previously noted problems with other measures of commitment (Jaros, 2007). From a practical standpoint, the K.U.T.-PL is shorter and is target neutral, meaning it can be used to assess the full range of different work-related commitment targets, not just commitment to the employing organization. This allows commitment to different targets to be measured in a simple, reliable and accurate and more directly comparable way. As van Rossenberg, Cross and Swart (2022) point out, the K.U.T. has shown its potential in measuring a more complete and context-specific set of workplace commitments and better insights into work-related attitudes and behaviors, which has clear benefits for researchers studying commitments in contemporary work environments. Therefore, the K.U.T. can be used to measure various forms of commitment as predictors of behavior, or as a mediating variable between predictors and testable outcomes (Colledani *et al.*, 2018).

The practical implication is to provide a Polish version of a tool to measure commitment, which is a simple and short tool measuring the bond between an employee and a specific target (e.g., organization, team, goal), so it can be used in many studies, especially those where there are limitations in using long measurement scales (e.g., cross-cultural studies). The ability to reliably and accurately measure commitment to different targets also allows this tool to be used in many research projects where there is no need to measure or control commitment to the organization.

Limitations and future directions

Although the research and analysis conducted indicated that the K.U.T.-PL is a very valuable tool for measuring commitment, it contains some limitations that should be addressed in future research. First, the research was conducted among employees from the private company sector, excluding public sector organizations or third sector organizations (e.g., foundations or associations). Lack of collection to a more diverse population made it impossible to test invariance across different organizations. Some indication that such equivalence exists is research involving the Czech context (Procházka *et al.*, 2019), where K.U.T. was shown to be invariant across public and private organizations.

Second, the K.U.T. questionnaire was originally developed as a target-neutral measure of commitment and Klein *et al.* (2014) reported evidence about its validity when measuring various targets. The Polish adaptation analogously to the Czech adaptation (Procházka *et al.*, 2019) concerned measuring organizational commitment, and we did not include different targets for our cultural validation. So, we cannot fully confirm using this scale for measuring commitment towards other targets (team, goal, leader, etc.). In further research, it would be interesting to see if measuring commitment to the other targets is as reliable and accurate as measuring commitment to the employing organization. Third, in validating the K.U.T.-PL several of the other measures were translations of established scales, but those translations were not independently validated. Further validation of those translated measures or replicating our results with established Polish measures would further support our findings.

Fourth, a cross-sectional design was used in this study and research was based on only one level of data – employees' opinions. This procedure may have influenced the results of the study, so in future research it would be worth collecting data over several time periods and utilizing different sources of data on employee behavior (in role and extra role) from direct supervisors or co-workers. However, it's worth noting that any concerns about common method variance are offset by the strong findings regarding discriminant validity, incremental validity, and support by confirmatory factor analysis for the measurement model. Examining the K.U.T.-PL over time would also allow the test-retest reliability of the adapted measure to be examined. Other potential avenues for future research would be to examine the K.U.T.-PL in relation to additional variables from the nomological network around commitment and to explicitly demonstrate the incremental validity and utility of this tool over alternative measures of commitment.

COMPLIANCE WITH ETHICAL STANDARDS

Ethical Approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the Commission of Ethics Warsaw School of Economics, Warsaw, Poland and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Conflict of Interest: The authors of the present paper declare that they have no conflicts of interest. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Informed Consent: Informed consent was obtained from all the participants of the study.

Declaration: The manuscript has not been published previously and is not under simultaneous review elsewhere.

Data availability: The datasets analyzed during the current study are available from the corresponding author on reasonable request.

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APPENDIX

K.U.T. Items	
English	**Polish**
How committed are you to [your/the/this] [target] ?	Jak zaangażowany jesteś w [twój/swój/ten] [cel]?
To what extent do you care about [your/the/this] [target] ?	W jakim stopniu czujesz się odpowiedzialny za [twój/swój/ten] [cel]?
How dedicated are you to [your/the/this] [target]?	Jak oddany jesteś realizacji [twojego/swojego/tego] [celu]?
To what extent have you chosen to be committed to [your/the/this] [target] ?	W jakim stopniu twoje zaangażowanie w [twój/swój/ten] [cel] jest wynikiem twojej decyzji?
5-point response scale	
1 – Not at all	1 – Ani trochę
2 – Slightly	2 – W niewielkim stopniu
3 – Moderately	3 – W umiarkowanym stopniu
4 – Quite a bit	4 – W znacznym stopniu
5 – Extremely	5 – W bardzo dużym stopniu
7-point response scale	
1 – Not at all	1 – Ani trochę
2 – Slightly	2 – W bardzo małym stopniu
3 – Somewhat	3 – W małym stopniu
4 – Moderately	4 – W umiarkowanym stopniu
5 – Mostly	5 – W dużym stopniu
6 – Very	6 – W bardzo dużym stopniu
7 – Completely	7 – Całkowicie