

**WORK-RELATED BASIC NEED SATISFACTION SCALE: ANALYSIS OF
CONSTRUCT VALIDITY AND RELIABILITY IN TURKISH**

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ABSTRACT

The purpose of this study is to explore the validity and reliability of the day level work-related basic need satisfaction scale in Turkish. Data was collected from a sample of 397 individuals working for different companies at private sector in Turkey. Results of the exploratory factor analysis have revealed that three factor solution has explained 78.9% of the total variance. In line to this, confirmatory factor analysis supported the three factor structure ($\chi^2 / df = 1.70$; $p < .05$; RMSEA=.04; SRMR=.03; CFI = .99; TLI = .99) for this Turkish speaking sample. Moreover, Cronbach's alpha coefficients of the scales (need for autonomy, need for competence, and need for relatedness) ranged from .84 to .90. In conclusion, findings from this study have disclosed that scales which measure work related basic need satisfaction components are valid and reliable in Turkish.

Keywords: Basic Need Satisfaction, Scale, Validity, Reliability, Turkish

**İŞE İLİŞKİN TEMEL İHTİYAÇ TATMİNİ ÖLÇEĞİ: TÜRKÇE YAPISAL
GEÇERLİK VE GÜVENİRLİK ANALİZİ**

ÖZ

Bu çalışmanın amacı, günlük düzeyde işe ilişkin temel ihtiyaç tatmini ölçeğinin geçerlik ve güvenilirliğini araştırmaktır. Veriler, Türkiye'de özel sektörde farklı şirketlerde çalışan 397 kişiden oluşan bir örneklemden toplanmıştır. Keşifsel faktör analizi sonuçları, üç faktörlü çözümün toplam varyansın% 78.9'unu açıkladığını ortaya koymuştur. Buna paralel olarak doğrulayıcı faktör analizi, Türkçe konuşan nüfusta üç faktör yapısını ($\chi^2 / df = 1.70$; $p < .05$; RMSEA = .04; SRMR = .03; CFI = .99; TLI = .99) desteklemektedir. Dahası, ölçeklerin Cronbach alfa katsayıları da (özerklik, yetkinlik ve ilintili olma ihtiyaçları) .84 ile .90 arasında değişmektedir. Sonuç olarak, bu çalışmanın bulguları, işe ilişkin temel ihtiyaç tatmini bileşenlerini ölçen ölçeklerin Türkçe'de geçerli ve güvenilir olduğu söylenebilir.

Anahtar Kelimeler: Temel İhtiyaç Tatmini, Ölçek, Geçerlik, Güvenirlilik, Türkçe

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1. Introduction

Motivation and its relationships with various work behaviour (such as commitment, innovative work behaviour) is becoming important in organisational behaviour field. Human being is motivated by many factors to have an impact at work. Some of these motivations are sourced by external factors and some of these are more intrinsic motivations by nature. According to self-determination theory (SDT), individuals experiencing intrinsic motivation engaging in a behaviour for its own sake, rather than external or internal rewards (Gagné & Deci, 2005).

According to SDT, satisfaction of three basic psychological needs stimulate intrinsic motivation and psychological well-being (Gagné & Deci, 2005). These three psychological needs are autonomy, competence, and relatedness. When these basic needs are fulfilled then individuals become autonomously and intrinsically motivated. If individuals experience an intrinsic motivation, then they tend to be more creative, less aggressive, less controlling and more interested in their work as they enjoy with it (Deci, Connell, & Ryan, 1989; Deci & Ryan, 1985). Moreover, many positive outcomes of intrinsic motivation such as; organisational commitment (Lynch, Plant, & Ryan, 2005), job satisfaction (Lynch et al., 2005), psychological well-being (Baard, Deci, & Ryan, 2004), performance (Baard et al., 2005) and more effort and goal attainment (Sheldon & Elliot, 1998) have been investigated.

Autonomy as a first dimension of basic psychological need is defined as a perception of psychological freedom in relation to an individual's own actions (deCharms, 1968). The author argues that individuals express themselves as the origin of the behaviour which is self-initiated in nature (Ryan & Deci, 2006). Autonomy is conceptually similar to independency, although they are distinct from each other. Independence is much more affiliated to experiencing freedom which is why independent individuals are not relying on others; however, autonomy is more strongly reflected in volition.

Competence refers to a sense of effectiveness in cooperating with the environment (Deci & Ryan, 2002; White, 1955). This propensity can be observed when individuals gain experiences and knowledge from the environment. When individuals' need for competence is not satisfied, this may result in a lack of motivation and desperation (Deci & Ryan, 2000). When the need for competence is satisfied, individuals experience confidence and effectiveness, and engage in challenging activities (Lynch et al., 2005). Organisations are likely to play an important role in satisfying one's competence needs (Lynch et al., 2005), such as by providing positive feedback. Competence results from mastering a task (Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010) and it is considered as a significant experience for motivating individuals to participate in more challenging actions.

Relatedness is also critical for individuals to feel connected with others at workplace (Baumeister & Leary, 1995; Deci & Ryan, 2002), which brings a sense of mutual care for others, belongingness (Baumeister & Leary, 1995), and reliance on one another (Baard et al., 2004). Individuals fulfil their need for relatedness by interacting with others via direct communication and through a sense of connection.

Mostly, research on organisational behaviour has focused on general (in terms of time wise) measurement of basic need satisfaction rather than weekly, or daily basis. Moreover, the measurement of work-related basic need satisfaction was predominantly administered in the English speaking population. In order to tackle the limitations mentioned above, this paper presents the construct validity and reliability of the day-level measurement of work-related basic satisfaction scale in Turkish work contexts. The validation of the Turkish version of the day-level work-related basic need satisfaction scale will contribute improving research on satisfaction of psychological needs in Turkish work settings, since, there is no well-validated measurement available in Turkish as far as we know.

2. Methodology

2.1 Procedures and Data

Adopting the translation and back-translation procedure, two independent colleagues working in the field translated and back-translated items in the questionnaire between English and Turkish. The nine highest factor loading of the original items of the Work-Related Basic Need Satisfaction scale (Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010) are included in this study. To eliminate possible translation discrepancies, translators and the research leader discussed the differences of the translations, and defined the final version of the scale. Moreover, general terms and statements (time-wise) have been converted to daily basis statements.

Turkish version of the Day-Level Work-Related Basic Need Satisfaction scale was administered using internet-based surveys to the Turkish speaking samples. These samples represented by different work contexts at the private service industry in Turkey. Since the internet-based surveys became relatively convenient to both researchers and participants, considering the time-saving and lower cost of implementation advantages, this method was preferred to conduct the survey.

Sample comprised 397 individuals working for different private organisations in Turkey. Participants were recruited by sending an invitation email to participate in the research using the contacts of the research leader working in the organisation. Then, snowballing strategy was adopted to increase the number of potential participants in the same organisations by asking contacts to forward the invitation e-mail to others. An invitation email directed participants to access to the online questionnaire by the URL link which was specified in the email. The goals of the study were defined noticeably in the invitation email. The anonymity conditions were provided in the invitation email as

well. Participants were asked about their consent for the investigation and offered to leave the research at any time point if they demanded.

2.2 Measurement

The nine items of Day-Level Work-Related Basic Need Satisfaction scale was used in the sample (Van den Broeck et al., 2010). Need for autonomy, need for competence, and need for relatedness were measured with three items each respectively. Participants were provided 5 point Likert scale to rate the items. (See Table 1 for the items in English and Turkish versions). Participants were also asked to provide their gender, age, job tenure, education level, and the position which they hold at the organisation. The demographic information here collected to run descriptive statistics.

2.3 Analytical Method

Following strategy of analysis was conducted in order; (1) testing the normality of the distributions for each factor, (2) testing the reliability scores, (3) running exploratory factor analysis to understand the total variance with the number of factor structure, and to detect possible cross-loading items, (4) running confirmatory factor analysis to explore the model fit of the three-factor structure compare to single factor structure, as well as the factor loadings of the items to the latent constructs , (5) running the correlation analysis to identify the inter-relations of the constructs as well as the descriptive statistics.

Table 1: Measurements (Day Level Work-Related Basic Need Satisfaction Scale)
English and [*Turkish*]

Basic Need Satisfaction scale with nine - items (highest factor loadings) by Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, (2010)

Note. Time-wise modification made on statement: general to daily basis

Need for Autonomy [*Özerklik ihtiyacı*]

Today ...

[Bugün ...]

I feel like I can be myself at my job

[İş yerinde kendim gibi olabileceğimi hissediyorum]

At work, I often feel like I have to follow other people's commands (R)

[İş yerinde çoğu zaman başkalarının emirlerine uymam gerektiğini hissediyorum]

The tasks I have to do at work are in line with what I really want to do

[İş yerinde yapmam gereken görevler gerçekten yapmak istediklerim ile örtüşüyor]

Need for Competence [*Yetkinlik ihtiyacı*]

Today ...

[Bugün ...]

I feel competent at my job

[Kendimi işimde yetkin hissediyorum]

I am good at the things I do in my job

[İşim ile ilgili konularda kendimi iyi buluyorum]

I have the feeling that I can even accomplish the most difficult tasks at work

[İşimde en zor görevleri dahi başarabileceğimi hissediyorum]

Table 1: Measurements (Continued) (Day Level Work-Related Basic Need Satisfaction Scale) English and [Turkish]

Need for Relatedness [*İlintili olma ihtiyacı*]

Today ...

[Bugün ...]

I don't really feel connected with other people at my job (R)

[Kendimi iş arkadaşlarım ile yeterince bağlantılı hissetmiyorum]

At work, I feel part of a group

[İşyerinde kendimi grubun bir parçası olarak hissediyorum]

At work, I can talk with people about things that really matter to me

[İşyerinde benim için önem arz eden hususları diğerleri ile konuşabiliyorum]

(1=totally disagree [tamamen katılmıyorum], 2=disagree [katılmıyorum], 3=neutral [tarafsızım], 4=agree [katılıyorum], 5=totally agree [tamamen katılıyorum]).

Note. (R) = Reverse code item

3. RESULTS

Sample of this research comprised 397 individuals serving for private organisations running in Turkey. 55.16% of the individuals were female and 44.43% were male. Average age of the sample was 29.5 years ($SD = 6.63$). They were holding the administrative positions with 14.4%, and professional positions with 85.6%. The average year spent in the organisation was 4.2 years ($SD = 5.10$). %8.8 of the participants held high-school degree, 76% college or university degree, and 15.1% postgraduate degrees. Participants responded to the items related to need for autonomy with 3.41 average ($SD = .77$), need for competence with 3.92 average ($SD = .74$), and need for relatedness with 3.85 average ($SD = 7.2$).

Cronbach's alpha coefficients for need for autonomy, competence, and relatedness were found as .84, .90, .84 respectively. Reliability scores provided an acceptable outcome to treat the scales as reliable measurements in Turkish.

Since the further analyses strategies (parametric versus not parametric distributions for appropriate factor analysis, and correlation analysis) varies on the nature of the data (continues or categorical), the histogram and the density curve was drawn. Results showed that values of skewness and kurtosis for all three measures deviated from zero. Moreover, the shapes of the distributions were observed as normal distributions (See Figure 1 below). In order to eliminate the inappropriate estimation method, observing the nature of the distribution was vital, since, it might lead to biased results in factor analyses (Byrne, 2012).

Exploratory factor analysis (EFA) was conducted to identify, if various needs (autonomy, competence, and relatedness) were distinct from each other. EFA was run using maximum likelihood extraction with varimax rotation with consisting of nine items. All the items were loaded to related scales with their highest loadings. Table 2 shows the loading for the final three factor solution, which accounted for 78.9% of the total variance. Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .83, and Bartlett's Test of Sphericity was $\chi^2 = 1944.18$ with $p=.000$.

Figure 1. Distributions of the three measurements (AUTO = Need for Autonomy, COMP = Need for Competence, RELA = Need for Relatedness)

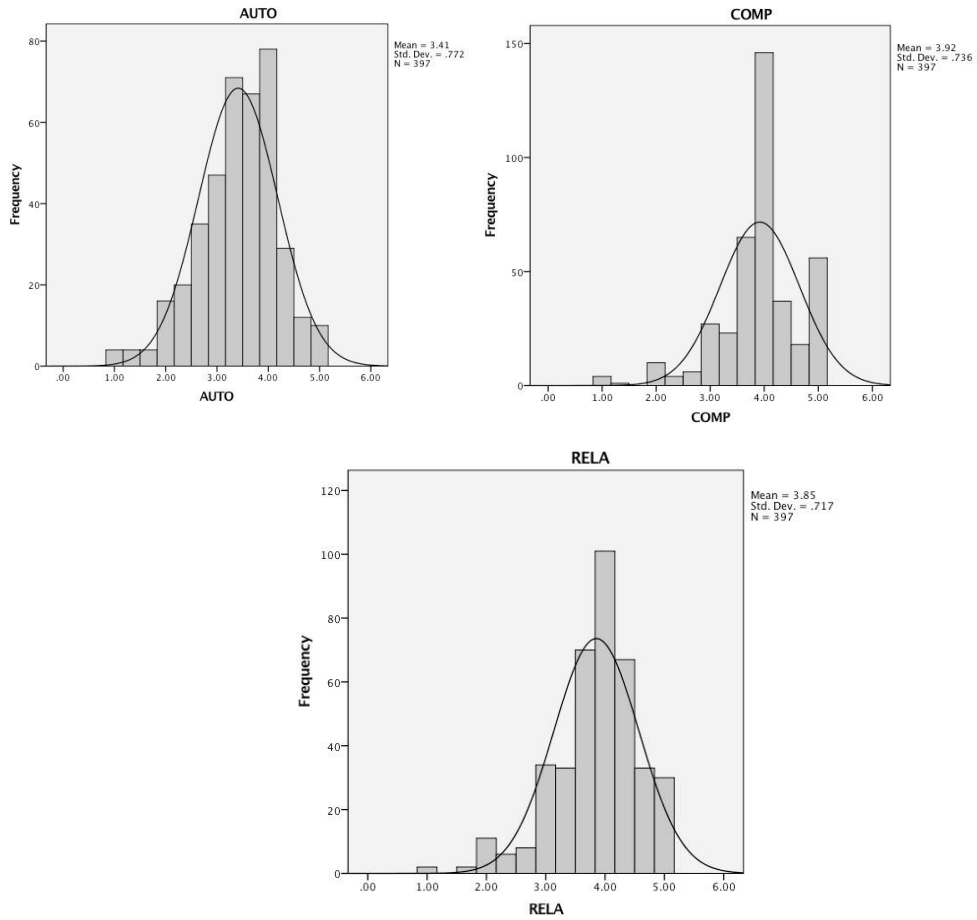


Table 2. Item Loadings from Exploratory Factor Analysis

Item	Need for Autonomy	Need for Competence	Need for Relatedness
A1	.75		
A2	.75		
A3	.79		
C1		.83	
C2		.86	
C3		.82	
R1			.81
R2			.72
R3			.75

Note. A= Need for Autonomy, C= Need for Competence, R= Need for Relatedness
Total Variance explained = 78.9%
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .83
Bartlett's Test of Sphericity: $\chi^2 = 1944.18, p = .000$

To assess if the alternative structures are valid, a series of confirmatory factor analyses (CFA) were conducted using maximum likelihood estimation with MPlus7. These various factor structures included; single factor model, three factor model with second-order latent factor, and three factor final model. Please see table 3, for the fit statistics of the various models. First model in which all items loaded on a single latent factor of "basic need satisfaction" had a very poor fit to the data ($\chi^2 / df = 29.61; p < .05$; RMSEA=.27; SRMR=.15; CFI = .61; TLI = .48) with factor loadings ranged from .41 to .86, (Please see Figure-2 below). This result is suggesting that different concepts (in this case three different concepts) do not represent with only one factor.

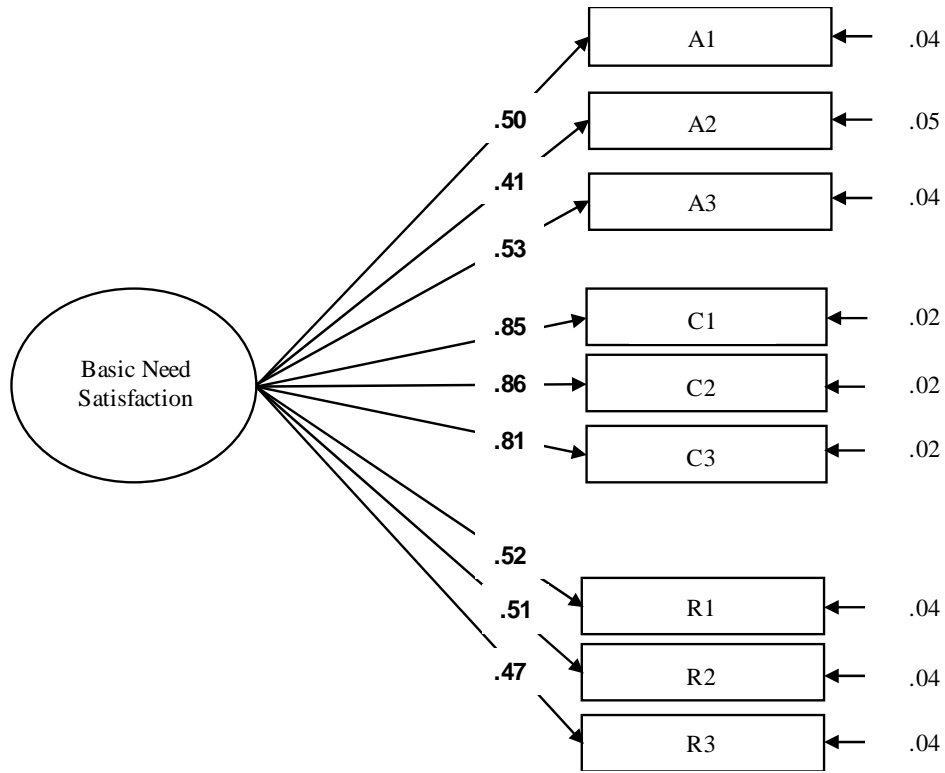


Figure 2. CFA Single factor model: Basic need satisfaction ($N = 397$, Turkish speaking employees). Factor loadings, standard error of observed variables and latent correlation between factors (standardised estimates). All estimates were statistically significant ($p < .01$). Note. A= Need for Autonomy, C= Need for Competence, R= Need for Relatedness ($\chi^2 / df = 29.61$; $p < .05$; RMSEA=.27; SRMR=.15; CFI = .61; TLI = .48).

Second model in which each item loaded to only related latent construct as seen in the Figure-3 below, and the latent variables were allowed to intercorrelate with each other, then these three latent factors were loaded to single latent construct of basic need satisfaction, was shown an excellent fit to the data ($\chi^2 / df = 1.70$; $p < .05$; RMSEA=.04; SRMR=.03; CFI = .99; TLI = .99) with factor loadings to the related latent constructs ranged from .74 to .90. The results have revealed that all factor loadings were statistically significant, and each item loaded on the expected factor. Latent constructs of “need for autonomy”, “need for competence”, and “need for relatedness” were loaded on higher-order latent construct of “basic need satisfaction”. The intercorrelations between three latent factors were found moderate since the variables are distinct constructs based on the self-determination theory (Deci & Ryan, 2000).

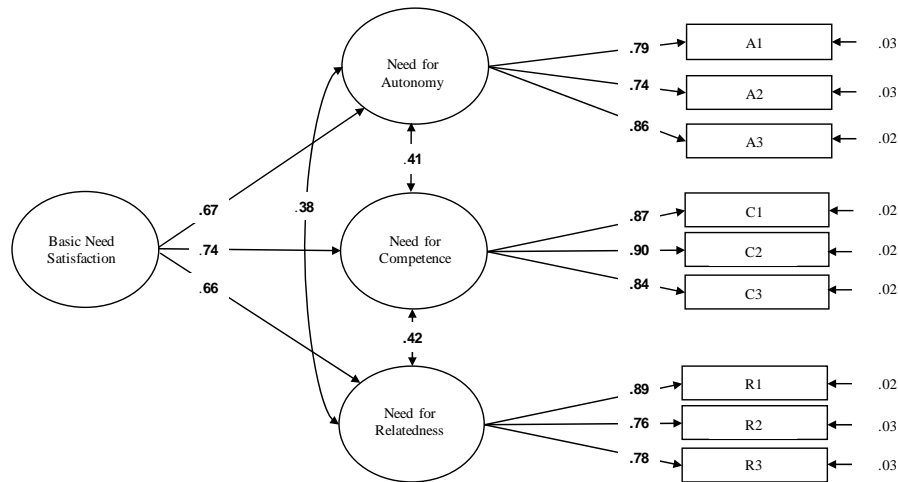


Figure 3. CFA Three factor model: Need for autonomy, need for competence, need for relatedness, and with higher-order factor of basic need satisfaction ($N = 397$, Turkish speaking employees). Factor loadings, standard error of observed variables and latent correlation between factors (standardised estimates). All estimates were statistically significant ($p < .01$). Note. A= Need for Autonomy, C= Need for Competence, R= Need for Relatedness ($\chi^2 / df = 1.70$; $p < .05$; RMSEA=.04; SRMR=.03; CFI = .99; TLI = .99).

The final model in which all items are loaded to related latent factors showed an excellent fit to the data ($\chi^2 / df = 1.70$; $p < .05$; RMSEA=.04; SRMR=.03; CFI = .99; TLI = .99) with item loadings ranged from .74 to .90. This final model suggests that “need for autonomy”, “need for competence”, and “need for relatedness” are distinct concepts and all three latent factors fit well within the same model to represent the data. In sum, confirmatory factor analysis suggested that basic need satisfaction components are separate constructs, consistent with exploratory factor analysis findings.

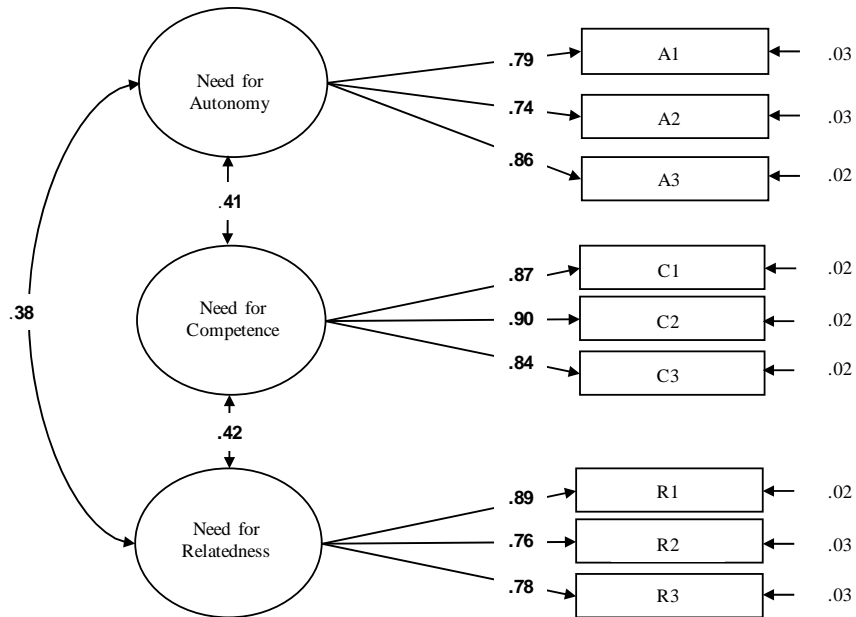


Figure 4. CFA Basic need satisfaction model: Need for autonomy, need for competence, and need for relatedness ($N = 397$, Turkish speaking employees). Factor loadings, standard error of observed variables and latent correlation between factors (standardised estimates). All estimates were statistically significant ($p < .01$). Note. A= Need for Autonomy, C= Need for Competence, R= Need for Relatedness ($\chi^2 / df = 1.70$; $p < .05$; RMSEA=.04; SRMR=.03; CFI = .99; TLI = .99).

Table 3. Goodness of Model Fit Results.

Model	N	χ^2	df	CFI	TLI	RMSEA	SRMR
Singe-factor	397	799.378	27	.613	.483	.266	.145
Three-factor	397	40.773	24	.992	.987	.042	.026

Models estimation was based on Maximum Likelihood (ML).

Note. Single-factor Model: Items are loaded to single latent factor of Basic need satisfaction. Three-factor Model: Items are loaded to three latent factors (Need for Autonomy, Need for Competence, and Need for Relatedness), and three latent factors are loaded to higher-order single factor of Basic need satisfaction.

The results of the correlation analysis also revealed that components of the basic need satisfaction scale are positively and relatively associated to each other with all $p < .01$ significance level. The coefficients of the correlations are reported as $r = .42$ between need for autonomy - need for competence, $r = .38$ between need for competence - need for relatedness, and $r = .43$ between need for competence - need for relatedness. The strength and the direction of the correlation coefficients were in line with the findings in the literature.

Table 4. Descriptive Statistics, Zero-order correlations, and Reliabilities.

	Variable	M	SD	1	2	3
1.	Need for Autonomy	3.41	.77	.84		
2.	Need for Competence	3.92	.74	.42**	.90	
3.	Need for Relatedness	3.85	.72	.38**	.43**	.84

Note. $N=397$. Cronbach's alphas are displayed on the diagonal.

** $p < .01$

4. Discussion And Conclusion

In this study, the construct validity and reliability of day level work-related basic need satisfaction scale was tested and findings were reported. In order to evaluate the distinctiveness of three components, namely; need for autonomy, need for competence, and need for relatedness, first exploratory, and then confirmatory factor analyses were run. Exploratory factor analysis with maximum likelihood varimax rotation has resulted that three factor solution explained 78.9% of the total variance. Then, confirmatory factor analysis was conducted to test the validity of the three factor model compare to single factor model. A single factor model (which all items loaded into single latent construct) were poorly fitted with the data since these three variables are conceptually different from each other. However, three factor model (which items are loaded to related latent factors) showed an excellent fit to the data. These findings suggest that there are indeed distinctions between the components of work-related basic need satisfaction scale. Moreover, the measurement of the Turkish version of day-level work-related basic need satisfaction scale was found valid and reliable.

One of the limitation of this study was relying on cross-sectional design. Actually, single factor model results did not show any type of indication about common method bias but still, researchers are encouraged to adopt a diary study to collect either daily or weekly data in order to understand the time wise variation which might be vital for understanding the validity of the day-level scale with more appropriate data collection method.

Drawing on self-determination theory and advanced statistical techniques, this study provided a nine-item day-level work-related basic need satisfaction scale in Turkish. It is hoped that the shortened and time wise modified version of this scale in Turkish will help both scholars and practitioners for the further investigations.

References

- Baard, P. P., Deci, E. L., & Ryan, R. (2004). Intrinsic need satisfaction: A motivational basis of performance and well-being in two work settings. *Journal Of Applied Social Psychology*, 34(10), 2045-2068.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117(3), 497-529.
- deCharms, R. (1968). *Personal causation*. New York: Academic Press.
- Deci, E. L., Connell, J. P., & Ryan, R. M. (1989). Self-determination in a work organization. *Journal of Applied Psychology*, 74(4), 580-590.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227-268.
- Deci, E. L., & Ryan, R. M. (2002). *Handbook of self-determination research*. Rochester, NY: University of Rochester Press.
- Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal Of Organizational Behavior*, 26(4), 331-362.
- Lynch, M. F., Plant, R. W., & Ryan, R. M. (2005). Psychological needs and threat to safety: Implications for staff and patients in a psychiatric hospital for youth. *Professional Psychology-Research and Practice*, 36(4), 415-425. doi:10.1037/0735-7028.36.4.415
- Ryan, R. M., & Deci, E. L. (2006). Self-regulation and the problem of human autonomy: Does psychology need choice, self-determination, and will? *Journal of Personality*, 74(6), 1557-1585. doi:10.1111/j.1467-6494.2006.00420.x
- Sheldon, K. M., & Elliot, A. J. (1998). Not all personal goals are personal: Comparing autonomous and controlled reasons for goals as predictors of effort and attainment. *Personality and Social Psychology Bulletin*, 24(5), 546-557.
- Van den Broeck, A., Vansteenkiste, M., De Witte, H., Soenens, B., & Lens, W. (2010). Capturing autonomy, competence, and relatedness at work: Construction and initial validation of the Work-related Basic Need Satisfaction scale. *Journal Of Occupational And Organizational Psychology*(83), 981–1002.
- White, R. W. (1955). Motivation reconsidered: The concept of competence. *Psychological Review*, 66(5), 297-333.