

## LINKS BETWEEN BASIC PSYCHOLOGICAL NEED SATISFACTION AND SCHOOL ADJUSTMENT: A PERSON-ORIENTED APPROACH

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### *Abstract*

*The objectives of the study were to identify the individual profiles of basic psychological needs satisfaction at school and to establish its relation to academic, personal and social adjustment. The sample of 306 13-18-year-old students from four Lithuanian schools was surveyed. Two groups - average and low need satisfaction - were identified using the latent profile analysis. Average need satisfaction students showed better school adjustment (academic, personal and social) in comparison with low need satisfaction students. The findings confirmed the importance of all three basic psychological need satisfactions for school adjustment demonstrated in previous variable-oriented studies. Future research should focus on bi-directional links between basic psychological need satisfaction and school adjustment.*

Keywords: basic psychological needs; self-determination theory; school adjustment; adolescence

### **Introduction**

One of the major contexts in the life of adolescents is school. The subjective experience in school relates significantly to adolescents' overall life quality (Huebner & Gilman, 2006). Over the past few decades, self-determination theory (SDT; Deci & Ryan, 1991, 2000) has been very useful for understanding students' optimal functioning in school by studying factors that

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lead to positive learning outcomes and subjective well-being. Basic psychological needs theory (BPNT) is a sub-theory of SDT that proposes the existence of three inherent, universal basic psychological needs that have to be satisfied in order to achieve optimal functioning and growth (Deci & Ryan, 2000). These needs are the need for autonomy, competence, and relatedness. In educational settings, the need for autonomy can be defined as the experience of choice and psychological freedom in study activities. The need for competence refers to having opportunities to develop and express individual capabilities as well as to interact effectively with the school environment. The need for relatedness concerns a sense of connection with teachers and classmates (Deci & Ryan, 2000; Sierens, Vansteenkiste, Gossens, Soenens, & Dochy, 2009; Tian, Han & Huebner, 2014). The satisfaction of these needs is context depended. Students are likely to thrive and to develop intrinsic motivation in settings that fit well with their psychological needs (Deci & Ryan, 2000).

The body of research based on SDT perspective has shown, that satisfaction of basic psychological needs contributes to students' engagement (Ryan & Deci, 2000), persistence in school (Ratelle, Larose, Guay, & Senécal, 2005) and academic achievement (Ratelle, Guay, Vallerand, Larose, & Senécal, 2007; Ryan & Deci, 2000; Wetzel, Barry, & Caldwell, 2004). Therefore, it is suggested that three basic psychological needs should be satisfied in the school environment to promote students' academic achievements and overall well-being (Tian et al., 2014).

Large number SDT academic studies have mostly analyzed the effects of single basic needs on particular outcome variables. Besides, most of the studies focus on the need for autonomy and competence, while little attention has been dedicated to the understanding of relatedness as learning environment dimension (Maulana, Opdenakker, Stroet, Bosker, & 2013). The variable-oriented approach used in these studies neglects the relation between basic needs, e.g., whether all three basic needs are satisfied simultaneously, but to varying extents (Esdar, Gorges, & Wild, 2015). SDT posits that three basic needs are not opposite or separate but rather interrelated and complimentary (Ryan & Deci, 2000). This interrelatedness may occur because need supportive behavior may satisfy more than one need (Reeve, 2012; Vansteenkiste, Niemiec, & Soenens, 2010). Therefore, it becomes crucial to understand whether supporting all of those needs is beneficial for school adjustment.

A person-oriented approach allows identifying various need satisfaction profiles that are not distinguished a priori established categories using median split but rather naturally occurring among students. Some studies have begun to examine need satisfaction profiles. Ferrand, Martinent, and Durnaz (2014) identified two need satisfaction profiles in an elderly sample: one profile with a high satisfaction and another profile with a low satisfaction of the three basic psychological needs. Esdar et al. (2015) identified four profiles of basic psychological needs satisfaction in junior academics' sample. Two profiles were similar to Ferrand et al. (2014) results, and another two were characterized by higher level of satisfaction of either need for autonomy or need for competence. The results of this research have shown that satisfaction of all three needs is necessary for optimal functioning in specific contexts. Thus it will be beneficial to identify needs' satisfaction profiles in school settings and relate them to school adjustment. In our study school adjustment was conceptualized according to Baker & Siryk (1984) who emphasized students' well-being in three domains: academic, emotional, and personal-social.

### **Objectives**

The purpose of this study was to evaluate links between satisfaction of the basic psychological needs and school adjustment using person-oriented approach. In order to achieve this purpose two objectives of the study were identified. The first objective was to discover various need satisfaction profiles that are naturally occurring among high school students. Second, we aimed to verify how students grouped in these profiles differ in terms of adjustment to school.

### **Method**

#### *Participants*

Participants were 306 students (49% girls) in 7th through 11th grade from four schools in Lithuania. Their age ranged from 13 to 18 years with a mean age of 15.24 years ( $SD=1.39$ ). Most participants were Lithuanian (83.3%).

### *Instruments*

*Psychological need satisfaction.* Psychological need satisfaction was assessed with 9 items. The satisfaction of the need for autonomy was assessed with 3 items from *The Perceived Autonomy in Life Domains Scale* (Blais & Vallerand, 1991). The satisfaction of the need for competence was assessed with 3 items from the Academic subscale of the *Perception of Competence in Life Domains Scale* (Losier, Vallerand, & Blais, 1993). The satisfaction of the need for relatedness was assessed with 3 items from Intimacy subscale of the *Need for Relatedness Scale* (Richer & Vallerand, 1995). Examples of items include: “I go to school out of personal choice” (autonomy), „In general, I have difficulty doing my school work well” (competence), and “In my relationships with my classmates, I feel close to them” (relatedness). Participants had to indicate the extent to which they agreed with each item using a 7-point scale (1 – strongly disagree, 7 – strongly agree). Cronbach’s alphas were .72 for Autonomy need satisfaction subscale, .70 for Competence need satisfaction subscale, and .78 for Relatedness need satisfaction subscale. Confirmatory Factor Analysis (CFA) with the Maximum Likelihood estimation in Mplus 5.2 was performed to test the factor structure of the Psychological need satisfaction measure. Results indicated that the three-factor structure provided a good fit to the data,  $\chi^2(24)=50.793$ ,  $p<.01$ , CFI=.95, TLI=.925, RMSEA=.06 [.037; .084].

*School adjustment.* School adjustment was assessed with 22 items from *Student Adjustment to College Questionnaire* (SACQ; Baker & Siryk, 1984) adapted for school students. Academic adjustment subscale (10 items; e.g. “I have been keeping up to date with my academic work”) measures students’ perceptions of being able to adjust to the several demands in terms of homework, class work, and exams. Personal-emotional adjustment subscale (7 items; e.g. “I have been feeling tense and nervous lately”) measures students’ perceived general affective status (e.g., anxiety, distress) and physical status (e.g., somatic symptoms). Social adjustment subscale (5 items; e.g. “I have friendly relationships with several people at school”) measures students’ perceptions of their socializing with peers and school professionals. Each item was rated using a 5-point scale 1 (1 - does not apply to me at all, 5 - applies to me very well). Cronbach’s alphas were .82 for Academic adjustment subscale, .84 for Personal-emotional adjustment subscale, and .81 for Social adjustment subscale. Confirmatory Factor Analysis (CFA) with the Maximum Likelihood estimation in Mplus 5.2 was performed to test the factor structure of the

questionnaire. Results indicated that the three-factor structure provided a good fit to the data,  $\chi^2(24)=55.607$ ,  $p<.001$ , CFI=.969, TLI=.954, RMSEA=.066 [.043; .088].

#### *Procedure and design*

The study was cross-sectional. The data came from a pilot study in an ongoing longitudinal research project “Towards effective teaching: “Dynamic interaction between teachers’ instructional behavior and students’ basic psychological needs satisfaction (DoIT)”.

The principals of four high schools gave permission to collect data at schools. Passive consent was obtained from parents. The students were informed about the study on the research day. Participation in the study was voluntary and anonymity was guaranteed. Students completed the questionnaires during regular class time. The researcher was present during data collection.

## **Results**

Latent Profile Analysis (LPA) was conducted to detect the presence of latent classes (profiles) that represent groups of students with different extents of basic need satisfaction at school. LPA models with one, two, and three classes were analyzed. Table 1 presents the fit indices for the three models assessed. The two-class model was selected as the best fit to the data. The two-class model had a smaller SSA-BIC value than the one-class model and a statistically significant Adj. LMR-LRT test, indicating that the addition of a second class improved model fit compared to the one-class solution. Though three-class solution had lower SSA-BIC values than the two-class model, it had Entropy lower than .7 and statistically insignificant Adj. LMR-LRT test, indicating that addition of the third class did not significantly improve model fit over the two-class solution.

Table 1. Latent profile analysis model fit indices for one, two, and three class solutions

Model	Fit indices			Class proportions (%)		
	SSA-BIC	Adj. LMR-LRT	Entropy	1	2	3
One class	2617.479	–	–	100		
Two class	2542.957	.0002	.749	20	80	
Three class	2534.953	.2326	.672	12	38	50

Note: The best fitting class solution is in bold type. SSA-BIC = Sample Adjusted Bayesian Information Criterion; Adj. LMR-LRT = Adjusted Lo–Mendell–Rubin likelihood ratio test

The first cluster was labeled “low need satisfaction” and represented 20% of the sample ( $N = 62$ ). Participants in this cluster showed low degrees of perceived satisfaction of autonomy, competence and relatedness needs. The second cluster was labeled “average need satisfaction” and represented 80% of the sample ( $N = 244$ ). Participants in this cluster had an average degree of perceived satisfaction of all three needs. See Figure 1.

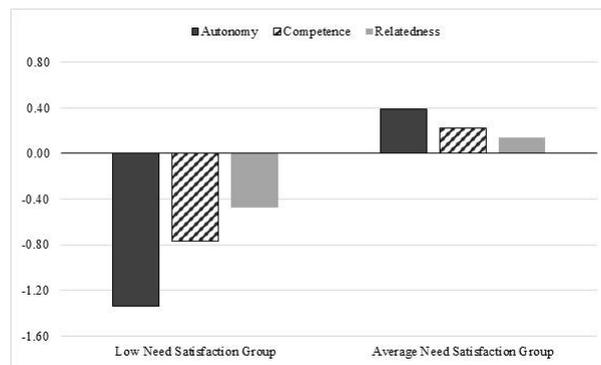


Figure 1. Z-scores for autonomy, competence, and relatedness for the two basic need satisfaction profiles

An independent samples  $t$  - test was conducted to compare school adjustment indicators scores for low and average need satisfaction profiles. Analyses revealed that students with average need satisfaction profile had significantly higher academic, emotional and social school adjustment scores than students with low need satisfaction profile ( $p < .05$ ).

Table 2. Comparisons of two basic need satisfaction profiles across academic, emotional and social adjustment variables

School adjustment	Basic need satisfaction profiles		<i>t</i> ( <i>df</i> )
	Low need satisfaction <i>N</i> = 62 <i>M</i> ( <i>SD</i> )	Average need satisfact <i>N</i> = 244 <i>M</i> ( <i>SD</i> )	
Academic	2.66 (.57)	3.42 (.59)	-9.185 (304)***
Emotional	2.89 (.98)	3.57 (.74)	-5.062 (79.4)***
Social	3.46 (.85)	3.91 (.73)	-4.154 (304)***

Note: \*\*\*  $p < .001$

### Discussion

The purpose of this study was to evaluate links between satisfaction of the basic psychological needs and school adjustment using person-oriented approach.

The current research was grounded in SDT that proposes that satisfaction of three innate psychological needs for autonomy, competence, and relatedness create conditions for higher quality motivation and well-being. School adjustment was conceptualized as a multidimensional construct that includes academic, social, and personal-emotional aspects.

First, LPA revealed two combinations of basic psychological needs satisfaction that naturally occur in students. One can be characterized by average satisfaction of three basic psychological needs, and another by low satisfaction of the three basic psychological needs. The patterns of needs satisfaction in profiles reflect either average or low satisfaction of all three needs. This suggests that all three needs covary positively and the satisfaction of one need may lead to satisfaction of the other two to some extent. This stands in line with SDT statement, that the three needs are separate, yet positively related (Ryan & Deci, 2000; Vansteenkiste et al., 2010).

Similarly, two basic psychological needs satisfaction profiles were identified in Ferrand et al. (2014) study of the elderly sample, however, Esdar et al. (2015) have identified four groups based on basic psychological needs satisfaction level. It is worth noticing that sample size in Esdar et al. (2015) study was much larger than in present or Ferrand et al. (2014) study and that could have provided greater variability.

In Ferrand et al. (2014) study with the elderly sample, a high needs satisfaction group was identified instead of average needs satisfaction group.

This difference can be explained by peculiarities of the adolescence age period. Stage-environment fit hypothesis (Eccles, 2004) proposes, that during adolescence individuals have a growing need for autonomy, relatedness, and competence, however, academic environment is not always able to adjust to these developmental changes in adolescents, thus creating a mismatch (Ratelle & Duchesne, 2014; Tian et al., 2014). Therefore, adolescents may feel that their needs are not met fully and this may explain why profile of high need satisfaction was not distinguished in the current study.

Second, as we have expected, the results proved that students whose psychological needs are satisfied reported a higher level of school adjustment in all dimensions of school adjustment identified by Baker and Syrik (1984). SDT specifies that basic psychological needs are nutrients for the emergence of energy and vitality that enable effective regulation of one's behavior and emotions. Therefore, our findings are congruent with SDT research (Deci & Ryan, 2000) indicating that three basic psychological needs should be satisfied in the school environment to promote students' academic success and positive behavior in school (Tian et al., 2014).

### **Conclusion**

The present study supports the assumption of SDT that the satisfaction of needs for autonomy, competence, and relatedness contributes to better functioning at school in various domains. Besides, similar to the findings in other age groups, adolescents are not a homogeneous group in terms of satisfaction of basic psychological needs.

#### *Limitations*

Some limitations of the present study need to be acknowledged. First, by choosing cross-sectional design we could not draw conclusions about causal links between satisfaction of basic psychological needs and school adjustment. Future research should focus on longitudinal design that allows investigating the bidirectional relations between basic psychological need satisfaction and school adjustment.

Second, only satisfaction of needs was investigated in the current study, however, SDT proposes, that low need satisfaction and need thwarting are not opposites of the same continuum, meaning that need

thwarting may have unique pathways to passivity and ill-being (Vansteenkiste & Ryan, 2013).

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