

# Developing a Measure of Students' Satisfaction with a Supervisor

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**Abstract:** Researchers and public institutions alike have demonstrated an increased interest in assessing the quality of students, supervision and their satisfaction with it: Researchers have attempted to investigate the possible predicting variables of students' satisfaction with their supervision and its outcomes for students' accomplishments and overall life satisfaction. The measurement used for the satisfaction of the academic supervisor using the construct of interdependence theory which is part of the social exchange theory that discussed the cost and reward in such a relationship. In this measure, we took three dimensions of this interdependence theory, namely costs, rewards, and the comparison level. Thirty-two participants participated in this study, convenience methods used for sample selection. The findings of the present study support the hypothesis based on Interdependence Theory. Validity and reliability of the scale were successfully tested as well. Thus, we may conclude that the new approach to the measurement of satisfaction with the relationship with an academic advisor may be established. The final result from the measurement is 16 items have good validity, and 3 constructs showed good reliability.

## 1 INTRODUCTION

In recent years researchers and public institutions alike have demonstrated an increased interest in assessing the quality of students' supervision and their satisfaction with it: Researchers have attempted to investigate the possible predicting variables of students' satisfaction with their supervision and its outcomes for students' accomplishments and overall life satisfaction (e.g. Armstrong, 2004; Bordia et al., 2010; Mori, Inman, & Caskie, 2009; Pyhältö, Vekkaala, & Keskinen, 2015), while universities have been developing and applying distinct assessment scales in order to evaluate and improve the quality of academic supervision (e.g. Morningside College Advising Assessment Instrument; Advisor Assessment Instrument of UNC Charlotte, original version: Szymanska, 2011). The rise of attention toward the issue of students' supervision is not surprising since choosing an academic advisor can be an important part of many students' studies as their academic achievements can heavily depend on the quality and quantity of contact with their supervisors (e.g. Armstrong, 2004; Garcia, Mallot, & Brethower, 1988). Moreover, satisfying relationships with one's

supervisor were found to be associated with lower levels of stress experienced by students during their studies (e.g. Kenneth, 2016) and lower rates of students' dropout from universities (e.g. Soria, 2012).

Despite many existing studies that are dedicated to the subject, there are few universal and reliable measures of students' satisfaction with their supervision. For instance, up to this day most of the researchers have focused on the supervision of counseling psychology students, using in their studies highly specific measures that had often been adapted from the measures of employees' satisfaction with their work supervision or clients' satisfaction with their therapy/counseling outcomes; the examples of such measures include the Working Alliance Inventory-Supervisee (WAI-S; original version: Baker, 1991), the Supervision Feedback Form (SFF; original version: Williams, 1994), and the Supervision Outcomes Survey (SOS; original version: Worthen & Dougher, 2000). While the listed measures proved to be reliable tools in assessing the satisfaction with supervision of counseling psychology students, their specificity does not allow them to be applied to a broader sample of students. At the same time, the

researchers who were interested in more diverse samples of students generally administered to participants short scales that included only a few items measuring students' overall satisfaction with their supervision (e.g. one item measure "I am satisfied with the advising I received" in Arnold, Fisher, & Glover, 1998; one item measure "I am satisfied with my relationship with my advisor" in Tenenbaum, Crosby, & Gliner, 2001). Even though such measures were found to be as an easy and relatively reliable method of inferring the general level of students' satisfaction with their academic supervision, they did not fully reflect the complexity of the measured phenomenon and, thus, were only suitable for providing its general estimation. Moreover, since such measures assess many possible dimensions of supervision process (e.g. received practical help, frequency of contact with one' supervisor, the quality of relationships with one's supervisor) without directly referring to them, their test-retest reliability might be low as there are no stringent criteria for assessing the phenomenon and, therefore, the obtained scores are likely to be affected by the momentary thoughts that are evoked during the evaluation. Finally, the general measures require the respondents to be more or less sure about their level of satisfaction with their supervision, making it hard to evaluate the satisfaction of those students who have not yet formed an opinion of the quality of their supervision.

In order to address the outlined limitations of the existing scales we developed a new measure of students' satisfaction with their supervision; we intended to include items that would be equally applicable to a wide range of students, and that would represent different facets of supervision process (i.e. practical help, emotional support, quality and sufficiency of contact with supervisor). Since academic supervision is a process that takes place in interpersonal settings, we decided to focus on its relational aspect and chose interdependence theory (Kelley & Thibaut, 1978), one of the most influential theories in the field of interpersonal relationships, as a theoretical basis for the development of our items. According to interdependence theory, satisfaction with any interpersonal relationship is comprised of benefits one receives in a relationship minus costs (what one has to sacrifice for the relationship) and is affected by a comparison level (how the relationship compares to the previous experience and relationships of similar others). We included two different subtypes of relationship outcomes in our

test that, in our opinion, were of the utmost importance for the relationship between students and their supervisors - instrumental subtype represented practical help received by students, such as useful advice and helpful materials, whereas emotional subtype represented quality of relationships between students and their supervisors and evaluated such aspects, as liking, respect and mutual understanding. The inclusion of outcome level dimension allowed us to control for students' expectations which can alter the reported levels of satisfaction in a dramatic way: While a mediocre supervisor might be satisfying for one student who had only bad academic advisors in the past or who does not see any better opportunities, a good supervisor might be less satisfying for another student who has high expectations due to the past experience.

## 2 PRACTICAL SIGNIFICANCE

The developed measure of satisfaction with one's academic advisor can be applied in several ways. Firstly, it can be used in future studies on students' satisfaction with academic supervision, providing more detailed and reliable information, than frequently used one item measures. Secondly, it might help to improve the quality of students' supervision by revealing students' perspective on the strong and weak sides of their supervisors. Thirdly, the developed measure can help the students who are not sure about how to evaluate the quality of their supervision to gain an insight into their level of satisfaction with their supervisory relationships by making them consider different aspects of the supervision process.

## 3 METHOD

### 3.1 Participant and Procedure

The data were collected during a week. Thirty-two participants participated in this study, convenience methods used for sample selection, Convenience Sampling is a sampling method (a way of gathering participants for a study) used where you select a naturally-occurring group of people within the population you want to study. Characteristics of the participants are a student from master degree and doctoral program and are conducting to finish thesis/ dissertation with their supervisor of at least 3

months. Filling out the questionnaire provided through google docs created online, and then they filled out from their social media.

### 3.2 Measures

The measurement used for the satisfaction of the academic supervisor using the construct of interdependence theory which is part of the social exchange theory that discussed the cost and reward in such a relationship. In this measure, we took three dimensions of this interdependence theory, namely costs, rewards, and the comparison level. Cost and reward discuss the ideal relationship is a relationship that has a high rate of return and a low level of charge. These benefits are resources that pleasant and satisfying in such a relationship, while cost is a reward or punishment resulting in losses. This theory has two types of reward and cost; emotional and instrumental.

The number of items in the questionnaire is 36 items, comprised of three dimensions, scale used is a Likert scale with five options that totally disagree, somewhat disagree, neutral, somewhat agree, and totally agree. From the first dimension, rewards have the total items 11, the second dimension, costs have the total items 15, and the third dimension have total items 10 with 7 negative items.

After the questionnaire has been filled out by participants, then use a statistical method to measure reliability and validity from the instrument. The result from statistic revealed that the total items with good validity are 11 items. The first dimension is rewards with total items 7, costs with total item 6, and comparison level has total items are 4.

Dimensions reward and cost has three subdimensions of emotional and instrumental therein. Total item to the dimensions of cost and reward is 13 items. Emotional measure how positive and negative feeling tendency of students to supervisors during the discussion of their thesis. Positive feeling is where students find it enjoyable when interacting and discussing with supervisor (eg I feel happy when discussing with my supervisor I think I choose the right supervisor, while the negative feeling is where students feel negative emotions when they interact and discuss with supervisors as disappointed and sad while or after discussion with the supervisor (e.g. I do not like the personality of my supervisor, and I feel disappointed with my supervisor).

Sub Dimensions instrumental measure of how students feel that the supervisor helps them in discussions about the thesis, providing assistance

morally and materially to the advancement of the thesis, the supervisor has the ability, and good understanding in the field are being researched as well as the positioning status is equivalent to students (e.g. my supervisor Gives me always literature to help my work, and I feel that my supervisor always give me the right advice to revise my work). As for the negative sub-dimensions measure the relationship between students and supervisors which hampered the progress of the research supervisor of student

The third dimension is the comparison level. The third dimension relates to the expectations of the results obtained from the relationship. Where the expectations of students are compared to the events experienced by the student before undergoing a thesis. Satisfaction depends on the expectations established by previous experience. Someone will have a level of comparison higher when a person is happy, this is what determines satisfaction in such a relationship (e.g. Others students in my department have better supervisor than the one I have, I had the better supervisor before, the reality is different with my expectation about my supervisor, and I think my supervisor is better in the field of my topic than my supervisor before). The total of the item in this dimension is four items and three from those items are negative items (reversed). The following is the negative items from comparison level:

- Others students in my department have better supervisor than the one I have (reversed)
- I had the better supervisor before (reversed)
- The reality is different with my expectation about my supervisor (reversed)
- I think my supervisor is better in the field of my topic than my supervisor before.

## 4 RESULTS

In the process of developing a reliable measure for students' satisfaction with their academic advisors, each test item was carefully analyzed. According to the Classical Test Theory, in order to obtain an accurate measurement, it is necessary to reduce all random errors caused by participants' misinterpretations of items, their feelings, or situational factors. The first step for establishing a reliable measurement was the analysis of difficulty (reaction) indexes of the items suggested. The upper and lower bounds of the reaction index interval for the Likert scale items used in the questionnaire were calculated to be 4.2 and 1.8 respectively (each item response contained five possible options). The

second indicator examined was the discrimination index, which takes into account the number of participants with high and low test scores who gave a positive answer to a particular question; acceptable values for the index vary from .20 to .80. It was calculated through Reliability analysis function in SPSS as item-total correlation.

The decision to keep or to remove the items on the first stage of analysis was based on the results obtained for each item on both indicators displayed in Table 1. The calculated values showed that most of the items fitted the evaluation criteria (i.e. reaction index in the range 1.8 – 4.2 and discrimination index in the range .20 - .80). The tested items demonstrated good reaction indexes; however, the obtained difficulty indexes were close to the border values for some items (i.e. 2. “My supervisor does not take into account my point of view/opinion”, 6. “My supervisor does not treat me seriously”, 12. “I could do better work without my supervisor”, 18. “I am disappointed in my supervisor”, 19. “I think my supervisor does not really like me”, 33. “I do not like the personality of my supervisor”, 34. “Other students in my class have better supervisors than I do”, 35. “I doubt the research ethics of my supervisor”). Therefore, in order to decide for further use of those items we took into account the discrimination index values for each of those items. In relation with satisfactory discrimination rates the decision made was to include the items in the further analysis procedure. Also, some of the values of item discrimination indexes were negative due to the assumption that participants with higher test scores answered the items incorrectly more frequently compared to the participants with lower scores. However, analysing those items (i.e. 1. “My supervisor does exactly what I have expected him/her to do”, 15 “My supervisor knows how to inspire me to continue my work”, 20. “My supervisor gives me useful advice on my work”, 24. “My supervisor is always ready to discuss my work with me”, 26. “I feel like together with my supervisor we can solve all the problems that I can face in my work”, 28. “It is more pleasant for me to work with my supervisor, than with other teachers”) negative discrimination indexes were accompanied by acceptable reaction indexes. Due to the satisfactory difficulty index results, the items were involved in the further testing.

Three items were excluded after the first analytical results were obtained due to poor results in both index rates (i.e. 13. “My supervisor respects my ideas”, 22. “Working together with my supervisor is a pleasure for me”, 31. “My supervisor values the effort I put in my work”).

Table 1: Item Reaction and Discrimination Indexes of Student Satisfaction with Academic Advisor Scale

Nr	Item	Reaction (SD)	Index	Discrimination Index
1	My supervisor does exactly what I have expected him/her to do.	3.75 (1.05)		-.170
2	My supervisor does not take into account my point of view/opinion.	1.81 (1.33)		.792
3	My supervisor treats me as equal	3.97 (1.18)		.395
4	I feel like we just don't understand each other.	1.94 (1.32)		.634
5	The requirements of my supervisor are too high for me.	2.22 (1.24)		.636
6	My supervisor does not treat me seriously.	1.78 (1.13)		.546
7	It takes my supervisor for a long time to answer my letters.	2.63 (1.52)		.622
8	My supervisor uses the results of my work for his/her personal gains.	2.22 (1.29)		.493
9	My supervisor is enthusiastic about my work.	4.00 (1.11)		.336
10	My current supervisor is far from the kind of supervisor I would want.	2.16 (1.35)		.608
11	Other teachers understand my ideas better, than my supervisor.	1.97 (1.22)		.510
12	I could do better work without my supervisor.	1.81 (.93)		.450
13	My supervisor respects my ideas.	4.50 (.80)		-.280
14	I feel comfortable discussing my work with my supervisor.	4.16 (1.08)		4.16 (1.08)
15	My supervisor knows how to inspire me to continue my work.	3.70 (1.29)		-.391
16	My supervisor is more competent in the field of my work, than other teachers.	4.00 (1.14)		.218
17	My supervisor is too busy to work with me.	2.47 (1.34)		.237
18	I'm disappointed in my supervisor.	1.50 (.95)		.568
19	I think my supervisor does not really like me.	1.56 (1.05)		.297
20	My supervisor gives me useful advice on my work.	4.19 (1.12)		-.074
21	I have to remind my supervisor to send me the promised materials.	2.71 (1.51)		.520

Nr	Item	Reaction (SD)	Index	Discrimination Index
22	Working together with my supervisor is a pleasure for me.	4.25 (.95)		-.367
23	Some of my teachers show more interest in my topic, than my supervisor.	2.19 (1.23)		.680
24	My supervisor is always ready to discuss my work with me.	4.03 (1.09)		-.386
25	I have to work hard to please my supervisor.	3.26 (1.15)		.216
26	I feel like together with my supervisor we can solve all the problems that I can face in my work.	4.03 (1.03)		-.148
27	In the past I had better supervisors.	2.63 (1.50)		.542
28	It is more pleasant for me to work with my supervisor than with other teachers.	3.66 (1.29)		-.213
29	My supervisor helps me organize my work.	3.50 (1.41)		.016
30	I feel confused after discussing my work with my supervisor.	2.63 (1.07)		.230
31	My supervisor values the effort I put in my work.	4.34 (.90)		-.302
32	It is hard for my supervisor to meet my expectations.	2.41 (1.24)		.504
33	I do not like the personality of my supervisor.	1.47 (1.05)		.730
34	Other students in my class have better supervisors than I do.	1.81 (1.20)		.692
35	I doubt the research ethics of my supervisor.	1.75 (1.08)		.635
36	My supervisor requires me to change my work according to his/her ideas.	2.28 (1.40)		.227

On the next stage of the item analysis, we performed factor analysis. Principal component analysis showed that 53.53 percent of the total variance could be explained by three components. Consequently, we decided that our final questionnaire would contain three main subscales measuring students' satisfaction with their academic advisors. Accordingly, Principal Component Analysis with Varimax Rotation has performed in three- component extracted matrixes. The analysis was run seven times and after each session items were excluded from the scale due to the value present in all three components. The results of the Principal Component Analysis are displayed in Table 2.

Table 2: Primary Results of Principal Component Analysis with Varimax Rotation for Student Satisfaction with Academic Advisor Scale

Nr.	Item	Component		
		1	2	3
1	My supervisor is enthusiastic about my work.	-.827		
2	I feel like we just don't understand each other.	.789		
3	My supervisor does not treat me seriously.	.783		
4	Some of my teachers show more interest in my topic, than my supervisor.	.763		
5	I feel comfortable discussing my work with my supervisor.	-.754		
6	My supervisor does not take into account my point of view/opinion.	.751		.439
7	My supervisor treats me as equal.	-.683		
8	My supervisor is always ready to discuss my work with me.	-.627	.347	
9	Working together with my supervisor is a pleasure for me.	-.591	.555	
10	My current supervisor is far from the kind of supervisor I would want.	.563	-.323	
11	It is more pleasant for me to work with my supervisor, than with other teachers.		.700	
12	It is hard for my supervisor to meet my expectations.	.401	-.590	
13	I feel confused after discussing my work with my supervisor.		-.570	
14	My supervisor requires me to change my work according to his/her ideas.		-.376	.682
15	My supervisor is more competent in the field of my work, than other teachers.		.404	.675
16	I have to work hard to please my supervisor.			.657
17	My supervisor uses the results of my work for his/her personal gains.			.616
Component's eigenvalues		6.670	1.922	1.382
% of variance		39.23	11.31	8.13

The decision regarding item assigned to each subscale was made based on the item loadings in each component: We suggested that greater loadings would contribute more to the scale efficiency. Our decision was also based on item-scale correlations which were revealed to be significant for all three subscales ( $p < .01$ ). Correlation rates are presented in Table 3.

Table 3. Primary Correlation Rates of Student Satisfaction with Academic Advisor Scale

Nr.	Item	Correlation		
		Scale1	Scale2	Scale
1	My supervisor is enthusiastic about my work.	.824		
2	I feel like we just don't understand each other.	.805		
3	My supervisor does not treat me seriously.	.754		
4	Some of my teachers show more interest in my topic than my supervisor.	.763		

Nr.	Item	Correlation		
		Scale1	Scale2	Scale
5	I feel comfortable discussing my work with my supervisor.	.756		
6	My supervisor does not take into account my point of view/opinion.	.769		
7	My supervisor treats me as equal.	.796		
8	My supervisor is always ready to discuss my work with me.		.698	
9	Working together with my supervisor is a pleasure for me.		.772	
10	My current supervisor is far from the kind of supervisor I would want.		.676	
11	It is more pleasant for me to work with my supervisor, than with other teachers.		.737	
12	It is hard for my supervisor to meet my expectations.		.761	
13	I feel confused after discussing my work with my supervisor.		.544	
14	My supervisor requires me to change my work according to his/her ideas.			.717
15	My supervisor is more competent in the field of my work, than other teachers.			.625
16	I have to work hard to please my supervisor.			.662
17	My supervisor uses the results of my work for his/her personal gains.			.711

While checking the correlation rates and items' content, we noticed that two of the items in the first component (i.e. 6. "My supervisor doesn't take into account my point of view/opinion", and 3. "My supervisor doesn't treat me seriously") hold similar meaning and correlate with the subscale with similar values (.769 and .754 respectively). In order to improve the scale, we decided to discard item 3. "My supervisor does not treat me seriously" as it showed a lower correlation rate. With the purpose of avoiding any kind of inaccuracies, a control Principal Component Analysis was run again, and all items displayed satisfactory loadings; the results are presented in Table 4.

Table 4: Final Results of Principal Component Analyses with Varimax Rotation for Student Satisfaction with Academic Advisor scale

Nr.	Item	Component		
		1	2	3
1	My supervisor is enthusiastic about my work.	.827		
2	I feel like we just don't understand each other.	.799		
3	Some of my teachers show more interest in my topic, than my supervisor.	.781		
4	I feel comfortable discussing my work with my supervisor.	.751		
5	My supervisor does not take into account my point of view/opinion.	.725		.462
6	My supervisor treats me as equal.	.714		

Nr.	Item	Component		
		1	2	3
7	My supervisor is always ready to discuss my work with me.	-.583	-.433	
8	My current supervisor is far from the kind of supervisor I would want.	.567	.323	
9	It is more pleasant for me to work with my supervisor, than with other teachers.			-.796
10	Working together with my supervisor is a pleasure for me.	-.542	-.623	
11	It is hard for my supervisor to meet my expectations.	.377	.600	
12	I feel confused after discussing my work with my supervisor.		.463	
13	My supervisor is more competent in the field of my work than other teachers.		-.301	.702
14	My supervisor requires me to change my work according to his/her ideas.		.373	.656
15	I have to work hard to please my supervisor.			.648
16	My supervisor uses the results of my work for his/her personal gains			.616
Component's eigenvalues		6.103	1.921	1.359
% of variance		38.14	12.00	8.49

The items were assigned to each subscale according to their loadings and the logical connection between them with the purpose to compile a reliable measurement of our construct. Thus, it was decided that Subscale one would include eight items measuring students' general relationship with their academic advisors, Subscale two would include three items representing positive aspects of working with one's scientific advisor, and Subscale three would include five items connected with negative aspects of working with one's scientific advisor. Final item correlations were calculated and all values varied from .50 to .80 for the first subscale, from .85 to .86 for the second subscale and from .54 to .71 for the third subscale, which was regarded to be satisfactory for the final division of items into the three subscales. Moreover, all calculated correlations were significant ( $p < .01$ ). Results of the correlation analysis and item selection in each subscale are shown in Table 5.

Table 5: Final Correlation Rates of Student Satisfaction with Academic Advisor Scale

Nr.	Item	Correlation		
		Scale1	Scale2	Scale3
1	My supervisor is enthusiastic about my work.	.801		
2	I feel like we just don't understand each other.	.817		
3	My current supervisor is far from the kind of supervisor I would want.	.679		

4	Some of my teachers show more interest in my topic, than my supervisor.	.804		
5	I feel comfortable discussing my work with my supervisor.	.762		
6	My supervisor doesn't take into account my point of view/opinion.	.736		
7	My supervisor treats me as equal.	.786		
8	I feel confused after discussing my work with my supervisor.	.499		
9	Working together with my supervisor is a pleasure for me.		.858	
10	My supervisor is always ready to discuss my work with me.		.847	
11	It is more pleasant for me to work with my supervisor, than with other teachers.		.846	
12	It is hard for my supervisor to meet my expectations.			.567
13	My supervisor requires me to change my work according to his/her ideas.			.644
14	My supervisor is more competent in the field of my work, than other teachers.			.540
15	I have to work hard to please my supervisor.			.679
16	My supervisor uses the results of my work for his/her personal gains.			.706

At the final stage of our analysis we calculated the reliability of each subscale. The reliability analysis demonstrated that our scales have from fair ( $\alpha = .62$ ) to good ( $\alpha = .88$ ) reliability, thus, we concluded that the internal consistency of our scale is acceptable. Reliability statistics are presented in Table 6.

Table 6. Descriptive Statistics and Reliability Indexes for Satisfaction with Academic Advisor Scale

Scale	Number of items	Cronbach's alpha	Mean	SD
Relationship with academic advisor	8	.878	16.59	7.13
Working with academic advisor- Pros	3	.797	11.94	2.83
Working with academic advisor- Cons	5	.622	14.13	3.93

## 5 CONCLUSIONS

The findings of the present study support the hypothesis based on Interdependence Theory. Validity and reliability of the scale were successfully tested as well. Thus, we may conclude that the new approach to the measurement of satisfaction with the relationship with an academic advisor may be established. We may assume, that not only the items, which address the state of satisfaction directly, may assess satisfaction. The

present study proves that items, which are designed to measure different components of a relationship, may assess satisfaction.

Interdependence theory suggests that satisfaction with relationship occurs in a situation when rewards and costs appear to be balanced. Satisfaction would not be experienced when one perceives that the partner (here supervisor) takes more from than gives. The pre-test of the Satisfaction with Academic Advisor Scale (SAAS) revealed factors measuring costs and reward of working relationship with one's advisor. Thus, *subscale two*, which includes three items representing positive aspects of working with one's scientific advisor can be interpreted as a factor describing *rewards* that one gets from work with an academic advisor. While *subscale three* including five items connected with negative aspects of working with one's scientific advisor is measuring *costs* for work with one's supervisor.

The only surprising factor is *subscale one* including eight items measuring students' general relationship with their academic advisors. It is different from the subscale, which was designed at the beginning of the study, comparisons scale. We may assume, that the new measuring more general personal satisfaction with the relationship with one's supervisor perceived not only like professional but also as a person. Still, the items from the new factor do not measure general satisfaction with the relationship. The new factor assesses one's perception of the interaction and reveals some crucial aspects of the relationship.

The limitation of the present study is the size of the sample. For further research, it is needed to conduct pre-test of three-factor scale on a larger sample. However, the present study results support the hypothesis of relationship with supervisor as complex two-way interaction, which has outcomes for the two parties.

The Interdependent Theory suggests a complex matrix of interaction. Process of the transformation of given situation into effective situation includes one's perception of partner's outcomes. Thus, we may suggest, that the next step of the research project would be the development of test assessing one's perception of supervisor's outcomes from the working relationship. The completed interaction matrix would have significant predicting validity. It would predict the quality of the interaction between student and advisor and will help to improve it and make more lasting and fruitful.

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