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Differences in Self-Evaluations of Male and Female Students of the Institutes of Higher  
Education of Estonia

Seminar paper

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Running head: Self-evaluations

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## Kokkuvõte

Minu eesmärgiks seminaritööga on uurida, kas meeste ja naiste skoorid erinevad akadeemilises ja üldises enesetõhususes ning sisemises ja välimises motivatsioonis. Enesekohased hoiakuid hinnati akadeemilise enesetõhususe (Üpraus, 2009), üldise enesetõhususe skaalaga (Rimm ja Jerusalemm, 1999) ning akadeemilise motivatsiooni skaalaga (AMS-C 28) (Mägi, 2011). Andmeanalüüsiks kasutasin programmi SPSS. Tulemused näitasid, et meestega võrreldes on naiste väline motivatsioon kõrgem. Efekti suurus on -0.416. Ka sisemine motivatsioon on naistel kõrgem kui meestel. Efekti suurus on -0.348. Lisaks on ka naiste akadeemiline enesetõhusus kõrgem kui meestel. Efekti suurus on -0.307. Ainult üldises enesetõhususes ei olnud statistiliselt olulisi soolisi erinevusi. Efekti suurus on 0.295. Töös on välja toodud tulemuste võimalikud põhjused ning uurimise arenduse võimalused.

## Abstract

My aim in the present seminar paper was to find out whether the scores for males and females differ in academic and general self-efficacy, and in extrinsic and intrinsic motivation. Self-evaluations were measured with the academic self-efficacy scale (Üpraus, 2009), the Estonian version of *the General Self-Efficacy Scale* (Rimm and Jerusalemm, 1999) and the Estonian version of the *Academic Motivation Scale (AMS-C 28)* (Mägi, 2011). I used the SPSS program for my data analysis. The results showed that compared to males, females' extrinsic motivation is significantly higher. The effect size is  $d=-0.416$ . Also females have higher intrinsic motivation than males. The effect size is  $d=-0.348$ . Additionally, females had higher mean level of academic self-efficacy than males. The effect size is  $d=-0.307$ . Only in general self-efficacy there were no significant gender differences found. Effect size is  $d=0.295$ . Possible reasons for the results are discussed and also the possibilities for further research.

## **Introduction**

My aim in the present seminar paper is to find out, whether male and female students' self-efficacy and motivation scores differ. At present time, considerably more males drop out of school and more females graduate. There are many studies that support the theory, that self-evaluations are connected to academic success and persistence. I try to find out whether scores for males and females in self-evaluations differ and if they do, then in which direction.

## **Reasons for the Study**

The reason to study how male and female students differ in self-evaluations comes from the statistics of Estonian higher education, where it clearly comes out that less men get admitted and graduate, and more men drop out from the Estonian institutions of higher education compared to women. Table 1 presents the statistics of the last five years that have been published – 2006 to 2010. These tendencies have been apparent in the Estonian institutions of higher education for many years and the situation does not seem to improve. Every year more women than men get admitted; for example in 2010, 44.7% of the admitted students were male and 55.3% female. Compared to the number of men admitted to the higher education, every year around 70% of the men withdraw from their bachelor studies. In 2010 the percentage was 71.3%, whereas the percentage for women was 55.5%. Every year the number of women graduating is about 20%-30% higher than the number of graduating men. In 2010, compared to the number of females admitted, 72% graduated; whereas the number for males was 41% (Statistikaamet, 2011). These statistics raise concerns, because basically 2/3 of the men who enter the university do not graduate and this gives reason for further investigation.

**Table 1:** Statistics of the Estonian higher education of 2006-2010

	Gender	2006	2007	2008	2009	2010
Admitted	M	3008	3122	3239	3326	3358
	F	4328	4908	4616	4516	4160
Graduated	M	1606	1829	1472	1367	1375
	F	3684	3633	3119	3166	2993
Dropped out	M	2134	2378	2332	2049	2394
	F	2147	2469	2667	2101	2307
Percentage of dropouts compared to the admitted students of the same year	M	70.9%	76.2%	72%	61.6%	71.3%
	F	49.6%	50.3%	57.8%	46.5%	55.5%
Percentage of graduates compared to the admitted students of the same year	M	53.4%	58.6%	45.4%	41.1%	41%
	F	85.1%	74%	67.6%	70%	72%

*Note.* M=Male; F=Female

It could be argued, that the reason for higher male dropout rates might be somewhere else than in their lower abilities. In most of the tests that measure intellectual abilities, males get higher scores. Notably, they have better spatial abilities and they score higher in maths and science questions. Mau and Lynn (2000) analysed the *American National Educational Longitudinal Study (NELS)* results for 20,612 students, and found out that males obtained significantly higher mean scores in maths and science. In addition, some studies have shown that males surpass females on the *Wechsler Adult Intelligence Scale (WAIS)* typically by about 3.5 IQ points (Lynn, 1994; Colom, Garcia, Juan-Espinoza and Abad, 2002). Jackson and Rushton (2006) found that 17-18 year old males score an average 3.63 IQ points higher than their female counterparts on the *Scholastic Assessment Test (SAT)*. In the meta-analysis of the *Progressive Matrices*, the male advantage is at 5 IQ points (Lynn and Irwing, 2004). On the other hand, Mau and Lynn (2000) found that even though males score higher in most of the tests, females obtain significantly higher grades at school. Additionally, in NELS, females attained significantly higher mean scores in reading, and it was found that females do larger

amounts of homework (Mau and Lynn, 2000). This raises the question, that if men score higher in most of the tests, why do females have higher grades? Lynn and Mau (2001) explain this by females' stronger work ethic. This also came out in NELS in terms of female students doing larger amounts of homework.

Furthermore, men's higher dropout and lower graduation rates are not only the problem of Estonian higher education. The study on male academic performance in college carried out by Marrs and Sigler (2011) in the USA showed that women make up approximately 58% of college graduates and that men have higher dropout rates.

### **Self-Evaluations**

Studies on intelligence show, that the reasons for male higher dropout rates have to be somewhere else. The answer might be in the differences in self-evaluations, because studies have shown a link between self-evaluations, and academic performance and persistence. The self-evaluations I cover in my seminar paper are general and academic self-efficacy; and intrinsic and extrinsic motivation. It has been found that self-efficacy and motivation are among strongest predictors of academic success (Brown and Lent, 1991; Multon, Brown and Lent, 1991; Eccles and Wigfield, 2002; Robbins, Lauver, Le, Davis, Langley and Carlstrom, 2004).

General self-efficacy is an individual's belief in his or her capability to organize and execute the necessary actions to achieve a desired attainment (Bandura, 1997). Academic self-efficacy is an individual's evaluation of his or her ability to study and succeed in academic life (Schunk, 1991). Intrinsic motivation refers to behaving for reasons inherent to it, such as pleasure and satisfaction. Extrinsic motivation refers to doing something for reasons that are external to the activity itself (Ratelle, Guay, Vallerand, Larose and Sene'cal, 2007).

### **Self-Efficacy and Academic Performance**

Many studies have found correlations between self-evaluations, and academic achievement, and persistence. Bandura (1977, 1997) has suggested that the degree of self-efficacy beliefs in a specific domain affects whether an individual willingly approaches or avoids a certain behaviour and his or her level of persistence and performance while engaging in that behaviour. Therefore, higher levels of academic self-efficacy might result in better academic

performance and continuity in academic engagement. Brown and Lent (1991) demonstrated a positive relationship between self-efficacy beliefs and academic performance, and persistence. Also Kahn and Nauta (2001) found that second-semester self-efficacy beliefs and performance goals are significant predictors of return to college for the second year. Multon, Brown and Lent (1991) conducted a meta-analysis of the relationships between self-efficacy beliefs and academic performance. They used 36 studies with a range of performance measures, including standardized test scores, class performance, and grades. Their data was collected in elementary school (60.6%), college (28.9%) and high school (10.5%) settings. They found an average correlation of .38 across various types of student samples, designs, and criterion measures, which means that self-efficacy beliefs account for approximately 14% of the variance in students' academic performance.

The results of previous studies on academic self-efficacy have shown that females tend to score higher than males, or there are no gender differences. For example, the results of DeWitz's and Walsh's study (2002) indicated a significant difference between males and females on the variable of academic self-efficacy, measured with the *College Self-Efficacy Inventory (CSEI)*. Females reported higher scores for college self-efficacy than their male counterparts. On the other hand, an academic self-efficacy study carried out by Pajares and Usher (2006) in the USA that used *Bandura's Academic Self-Efficacy Scale*, found that male and female students do not differ in their academic self-efficacy.

However, studies on general self-efficacy have not found significant differences between genders. Only in some studies have males had slightly higher scores. Yong (2010) found in his general self-efficacy study, carried out in a Malaysian private university among pre-university engineering and business students, that the results yield no significant group, gender, or age differences in self-efficacy. Findings showed that students tended to have more similarities rather than differences in their self-efficacy. Scholz, Doña, Sud and Schwarzer (2002) conducted a cross-cultural research on general self-efficacy in 25 countries and found that in some nations, the general self-efficacy levels of women were slightly lower than those of men, although in general they were the same. Both fore mentioned studies use the *General Self-Efficacy scale* (Schwarzer and Jerusalem, 1995).

Studies on academic success and persistence, and self-efficacy give reason to think that

differences between males and females in these constructs might also have impact on their different academic success.

### **Motivation and Academic Performance**

There is a similar connection present between motivation and academic performance, as has been found between self-efficacy and academic performance.

A meta-analysis on whether psychosocial and study skill factors predict college outcomes found that achievement motivation is among the strongest predictors for performance in college (Robbins et al, 2004; Eccles and Wigfield, 2002).

Marrs and Sigler (2011) found gender differences in achievement motivation measured with Learning and Study Strategies Inventory (LASSI) subscale, where women scored significantly higher. A study in the Netherlands found that females have higher academic motivation than males. (Sluisa, Vinkhuyzenb, Boomsma and Posthuma, 2010). On the other hand, a study in Canada found that males and females do not have statistically significant differences in academic motivation (Faye and Sharpe, 2008).

A distinction can be made between different types of motivations. A study carried out in Canada that investigated academic motivation found, that in comparison to males, females reported higher levels of intrinsic motivation and lower levels of extrinsic motivation. Females also reported higher satisfaction and less distraction at school (Ratelle et al 2007). In a similar study, Marrs and Sigler (2011) were concerned with study strategies and whether gender differences in them might result in differences in academic success. Female students scored significantly higher than male students on the achieving study approach and deep (understanding) study approach subscales of the *Shortened Study Process Questionnaire (SSPQ)*. Males and females scored equally on the surface study approach subscale. Hence, similarly to Ratelle et al. (2007) results, this study also found that men are oriented to external motives, in this case to memorizing whatever is required for an exam, while women try to really understand the material and get good grades, and this also shows in academic success.

### **Self-Evaluations in the Estonian Sample**

Previous studies have shown a possible link between academic performance and persistence,

and self-evaluations (Brown and Lent, 1991; Kahn and Nauta, 2001; Robbins et al., 2004; Eccles and Wigfield, 2002). My aim in the present seminar paper is to find out whether scores for males and females in self-evaluations differ and, if they do, then how.

Studies on gender differences in self-evaluations have had diverse outcomes (Sluisa, et al., 2010; Faye and Sharpe, 2008; Scholz et al., 2002; Yong, 2010; DeWitz's and Walsh, 2002; Pajares and Usher, 2006). This gives even more reason to finding out whether there are gender differences in various self-evaluations in the Estonian institutes of higher education.

### **Hypotheses**

The first hypothesis is that females score higher than males in academic self-efficacy and in intrinsic motivation. The hypothesis is based on the studies that have found that females score higher than males in academic self-efficacy (DeWitz's and Walsh's, 2002) and in intrinsic motivation (Ratelle et al, 2007; Marrs and Sigler, 2011).

The second hypothesis is that males score higher than females in extrinsic motivation. Studies on extrinsic motivation have had results that male extrinsic motivation is higher (Ratelle et al, 2007; Marrs and Sigler, 2011).

The third hypothesis is that there are no significant gender differences in general self-efficacy. Previous studies have found no significant gender differences in general self-efficacy (Yong, 2010; Scholz et al, 2002).

## Method

### Participants

#### Sample 1

Participants are 340 students from four Estonian universities - the University of Tartu (N=228, 67%), Tallinn University (N=22, 6.5%), the Tallinn University of Technology (N=19, 5.5%), and the Estonian Information Technology College (N=71, 21%). 186 (54.7%) participants were female and 154 (45.3%) were male (see Table 2).

**Table 2.** The division of the participants by gender

	Males	Females
University of Tartu	79 (34.6%)	149 (65.4%)
Tallinn University of Technology	15 (78.9%)	4 (21.1%)
Tallinn University	16 (72.7%)	6 (27.3%)
Estonian Information Technology College	44 (62.0%)	27 (38.0%)
Total	154 (45.3%)	186 (54.7%)

The ages of the participants ranged from 18 to 45 and the average age was 22.14.

The data was collected between 2011 and 2012 by two students of the University of Tartu – Mari-Liis Mägi and Ingi Einaste – for the purposes of their seminar paper. The data was collected in the web-based research portal of the Department of Psychology, University of Tartu (TÜPH uuringute keskkond).

#### Sample 2

Participants are the students of the University of Tartu and other institutes of higher education (for example, Lääne-Viru College and Estonian University of Life Sciences), who have during the course “Know Thyself: A Practical Introduction to the Psychology of Individual Differences“ completed questionnaires of general and academic self-efficacy in 2009 and

2010.

The total number of participants was 323, aged 18-51. The average age was 21.95. 53 participants were male (16,4%) and 270 participants were female (83,6%) (see Table 3).

**Table 3.** The division of participants by gender

	Males	Females
University of Tartu	38 (18.8%)	164 (81.2%)
Other institutes of higher education	15 (12.4%)	106 (87.6%)
Total	53 (16.4%)	270 (83.6%)

The data has been collected beforehand in the University of Tartu's course "Know Thyself: A Practical Introduction to the Psychology of Individual Differences". The course has been taken by a lot of students from different departments as an optional subject. Participants filled in the questionnaires on the Internet, in the *Kaemus* environment.

### Instruments

The 34 statements of the academic self-efficacy scale have been translated by Reili Üpraus (Üpraus, 2009) on the basis of various A. Bandura scales (Bandura, 1977, 1986, 1991). The last 10 statements are the Estonian version of *the General Self-Efficacy Scale* (Rimm and Jerusalem, 1999) that measure general self-efficacy. *The General Self-Efficacy Scale* has been translated into Estonian by H. Rimm (Rimm, 1999).

Extrinsic and intrinsic motivation was measured with *Academic Motivation Scale (AMS-C 28) College (CEGEP) Version* (Vallerand, Pelletier, Blais, Brière, Senécal, Vallières, 1992-1993). It is originally a 28-item scale that measures intrinsic and extrinsic motivation and their subclasses and amotivation. Amotivation is not necessarily for the purposes of this paper and is therefore excluded. The scale is adapted into Estonian by Mari-Liis Mägi, Ingi Einaste and Karin Täht (Mägi, 2011).

## Results

My seminar paper has two samples, because the data for motivation and self-efficacy were collected separately. The study that measured motivation did not include self-efficacy and vice versa.

### Sample 1

Table 4 shows the Independent Samples t-test for males and females on scores for intrinsic and extrinsic motivation. The test revealed, that the mean of evaluations differed significantly in intrinsic motivation  $t(338)=-3.199$ ;  $p=0.002$  and extrinsic motivation  $t(338)=-3.824$ ;  $p<0,000$ . Females ( $M=4.1$ ;  $SD=0.827$ ) had a higher mean level of intrinsic motivation than males ( $M=3.79$ ;  $SD=0.949$ ). The effect size is  $d=-0.348$ . In addition, females ( $M=4.12$ ;  $SD=0.969$ ) had a higher mean level of extrinsic motivation than males ( $M=3.7$ ;  $SD=1.044$ ). The effect size is  $d=-0.416$ .

**Table 4:** Gender differences in motivation - Independent Samples t-test

	Males (n=154)		Females (n=186)		t	Sig (2-tailed)	Cohen's d
	M	SD	M	SD			
Intrinsic motivation	3.79	0.949	4.10	0.827	-3.199	.002	-0.348
Extrinsic motivation	3.70	1.044	4.12	0.969	-3.824	.000	-0.416

### Sample 2

The Independent Samples t-test for males and females on scores for academic self-efficacy are shown in Table 5. The t-test indicated, that the evaluations differed significantly in academic self-efficacy  $t(321)=-1.987$ ;  $p=0.048$ . Females ( $M=69.3$ ;  $SD=8.428$ ) had a higher mean level of academic self-efficacy than males ( $M=66.81$ ;  $SD=7.768$ ). The effect size is  $d=-0.307$ . However, there was no significant difference in general self-efficacy  $t(321)=1,790$ ;  $p=0.074$ . Males ( $M=22.91$ ;  $SD=2.396$ ) scored slightly, but not significantly higher than females ( $M=22.06$ ;  $SD=3.288$ ). The effect size is  $d=0.295$ .

**Table 5:** Gender differences in self-efficacy - Independent Samples t-test

	<b>Males (n=53)</b>		<b>Females (n=270)</b>		<b>t</b>	<b>Sig (2-tailed)</b>	<b>Cohen's d</b>
	<b>M</b>	<b>SD</b>	<b>M</b>	<b>SD</b>			
Academic self-efficacy	66.81	7.768	69.30	8.428	-1.987	.048	-0.307
General self-efficacy	22.91	2.396	22.06	3.288	1.790	.074	0.295

## Discussion

Studies have previously shown a connection between academic success and persistence, and self-evaluations. My aim in the seminar paper is to find out whether male and female scores in self-evaluations differ. Estonian higher education statistics imply that male persistence is lower than female and, therefore, their results in self-efficacy and motivation should potentially be lower.

### Validity of Hypotheses

The first hypothesis was that females score higher than males in academic self-efficacy and in intrinsic motivation, and it turned out to be correct. Similarly to previous studies (DeWitz's and Walsh, 2002), in the present sample females also scored higher in academic self-efficacy. Also in keeping with previous studies (Ratelle et. al, 2007; Marrs and Sigler, 2011), females had higher scores than males in intrinsic motivation.

My second hypothesis was that males score higher than females in extrinsic motivation, but it turned out not to be valid. Unlike in previous studies (Ratelle et. al, 2007; Marrs and Sigler, 2011), males did not score higher than females in extrinsic motivation.

The last hypothesis – that there are no significant gender differences in general self-efficacy – was proven true. Like in previous studies (Yong, 2010; Scholz et. al, 2002), there was no significant difference found between the levels of general self-efficacy of males and females in my study either.

All in all, the hypotheses held true, except for only extrinsic motivation, which was not higher with males but with females. The fact that females scored higher than males in every criteria could be worrisome. However, this fits with the theories (Robbins et. al, 2004; Eccles and Wigfield, 2002) that self-evaluations are connected to persistence in the university. These theories and the results of this paper give reason to consider that there might be a link between males' low self-evaluations and high dropout rates.

On the other hand, additionally to self-evaluations, there might be many factors that could influence academic persistence and the possibility of dropping out. It is important to note that certainly self-evaluations are not the only influencer, but it is the one that has had the least

attention. For example, men have extra obligations that might favour dropping out. By the Constitution of the Republic of Estonia, all physically and mentally healthy male citizens have to go through compulsory military service in the Defence Forces. After the high school, it is possible to apply for a three year extension for acquiring higher education, but there are many specialities at the university, where the nominal study period is longer than three years. Therefore, it is necessary to take a gap year in the middle of the studies to attend the military service, but often it is complicated to continue the studies. In addition, a lot of students do not graduate within the nominal time and are forced to take an additional year. However, if a man is eligible, he needs to go through the military service before he can take the additional year and carrying on studies after a year-long brake can be difficult.

Additionally, in modern society feminism has not run its course yet and a man still feels that he is the breadwinner of the family. Therefore, he might withdraw or not even begin studies, because he feels that it is necessary to be in charge and not to be dependent on, for example, his parents or a loan, and go to work to earn money. In addition, it is easier to go to work to earn money than to go to school, because education pays off later, but the need for money could be an immediate concern.

Females have a higher work ethic and they spend more time with homework (Lynn and Mau, 2001). Therefore, they are less likely to fail and lose interest in their studies. Males on the other hand, might get bad grades due to their worse work ethic and thus might not see the long-term benefits of continuing higher education.

### **Limitations and Future Directions**

The main limitation of this work is the homogeneity of Sample 2. It might be assumed that due to the small number of men, the results are not good for generalizing. Therefore, the study should be repeated on a more representative sample.

The second limitation is that academic success as a variable is not included. In present study, the collected data is not sufficient to point out a direct connection between self-evaluations and academic success. Nevertheless, a tendency can be noted, that should be further studied from the standpoint of dropouts.

The percentages in the Table 1 are calculated with the numbers of the same year, because it is

not known exactly, for example, if the person admitted in 2007 graduates within nominal time in 2009 or drops out during any of the years between or, for example, takes an additional year and graduates in 2010. For these reasons the percentages are calculated within one year just to give an approximate overview, and that is why the values of dropouts and graduates do not add up to 100%.

In addition, the dropout rates in Table 1 are made more dramatic by the people who get admitted to the university, but do not start the school year. They get counted both in *admitted* and *dropped out* lines, but increase the amount of dropouts significantly. The number of people who drop out due to academic reasons might be considerably smaller.

A longitudinal study should be conducted to find out if lower scores in self-evaluations refer to lower results at school and eventually lead to dropping out.

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## References

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. *Psychological Review*, 84, 191-215.
- Bandura, A. (1986). Social foundations of thought and actions: A social cognitive theory. *Engelwood Cliffs, N. J.*: Prentice –Hall.
- Bandura, A. (1997). Self-efficacy: The exercise of control. *New York: Freeman*.
- Brown, S. D., Lent, R. W., Ryan, N. E., & McPartland, E. B. (1996). Self-efficacy as an intervening mechanism between research training environments and scholarly productivity: A theoretical and methodological extension. *The Counseling Psychologist*, 24, 535-544.
- Colom, R.; Garcia, L.F.; Juan-Espinoza, M.; Abad F.J. (2002) Null sex differences in general intelligence: Evidence from the WAIS 111 *Spanish Journal of Psychology*, 5, 29–35
- DeWitz, S.J.; Walsh, W.B (2002) Self-Efficacy and College Student Satisfaction *Journal of Career Assessment* (10), 315-326
- Eccles, J. S.; Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology*, 53, 109–132
- Faye, C., Sharpe, D.; (2008) Academic motivation in university: The role of basic psychological needs and identity formation. *Canadian Journal of Behavioural Science*, 40(4), 189-199
- Jackson, D.N.; Rushton, J.P. (2006) Males have greater g: Sex differences in general mental ability from 100,000 17–18 year olds on the scholastic assessment test. *Intelligence*, 34, 479–486
- Kahn, J. H.; Nauta, M. M. (2001). Social–cognitive predictors of first-year college persistence: The importance of proximal assessment. *Research in Higher Education*,

42, 633–652

- Lynn, R. (1994) Sex differences in intelligence and brain size: A paradox resolved. *Personality and Individual Differences*, 16, 363–364
- Lynn, R.; Irwing, P. (2004) Sex differences on the progressive matrices: A meta-analysis *Intelligence*, 32, 481–498
- Lynn, R.;Mau, W. C. (2001). Ethnic and sex differences in the predictive validity of the scholastic achievement test for college grades. *Psychological Reports*, 88, 1099-1104
- Malbi, R. S.; Reasoner, R. W. (2000) *Self-Esteem, Enhancing*. Kuala Lumpur: Self-Esteem Seminars Sdn. Bhd.
- Marrs, H.; Sigler, E. A. (2011) Male Academic Performance in College: The Possible Role of Study Strategies. *Psychology of Men & Masculinity*. 227-241
- Mau, W.-C.; Lynn, R. (2000). Gender differences in homework and test scores in mathematics, reading and science at tenth and twelfth grade. *Psychology, Evolution and Gender*, 2, 119–125
- Multon, K. D., Brown, S. D., & Lent, R. W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analytic investigation. *Journal of Counseling Psychology*, 38, 30–38.
- Mägi, M-L (2011) Tartu Ülikooli bakalaureuseastme üliõpilaste akadeemilise motivatsiooni võrdlus kahe teaduskonna näitel. *Seminar paper. The University of Tartu. Institute of Psychology*.
- Pajares, F., Usher, E.L. (2006). Sources of academic and self-regulatory efficacy beliefs of entering middle school students. *Contemporary Educational Psychology* 31(2), 125-141
- Ratelle, C. F.; Guay, F.; Vallerand, R. J.; Larose, S.; Sene´cal C. (2007) Autonomous, controlled, and Amotivated Types of Academic Motivation: A Person-Oriented Analysis *Journal of Educational Psychology*, 99(4), 734–746

- Rimm, H., Jerusalem, M. (1999). Adaptation and validation of an Estonian version of the general self-efficacy scale. *Anxiety, Stress and Coping*, 12(3), 329 – 345.
- Robbins, S.B.; Lauver, K.; Le, H.; Davis, D.; Langley, R.; Carlstrom, A. (2004) Do Psychosocial and Study Skill Factors Predict College Outcomes? A Meta-Analysis *Psychological Bulletin*, 130(2), 261-288
- Scholz, U; Doña, B; Sud, S; Schwarzer, R. (2002) Is general self-efficacy a universal construct? Psychometric findings from 25 countries. *European Journal of Psychological Assessment*, 18(3), 242-251
- Schunk, D. H. (1991). Self-efficacy and academic motivation. *Educational Psychologist*, 26(3 & 4), 207–231
- Schwarzer, R.; Jerusalem, M. (1995). Generalized Self-Efficacy scale. In J. Weinman, S. Wright, & M. Johnston, *Measures in health psychology: A user's portfolio. Causal and control beliefs*, 35-37
- Sluisa, S., Vinkhuyzenb, A. A. E, Boomsma, D. I., Posthuma, D. (2010). Sex differences in adults' motivation to achieve. *Intelligence* 38(4), 433-446
- Statistikaamet [WWW] <http://www.stat.ee> (09.04.2011)
- Vallerand, R. J. , Pelletier, L. G., Blais, M. R., Brière N. M., Senécal, C. B., Vallières, E. F. (1992-1993). ACADEMIC MOTIVATION SCALE (AMS-C 28) COLLEGE (CEGEP) VERSION. *Educational and Psychological Measurement*, 52, 53
- Üpraus, R. (2009). Akadeemiline edukus: akadeemilise enesetõhususe mõõtmise. *Bachelor's thesis. The University of Tartu. Institute of Psychology.*
- Yong, F. L. (2010). A study on the self-efficacy and expectancy for success of pre-University Students *European Journal of Social Sciences*, 13(4), 514-524

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