Investigation of the relationship between social capital and subjective well-being among Health Care Management students

PhD thesis

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Introduction

The expansion of higher education has provided many young people with opportunities for higher education studies. Previously underrepresented groups may become part of the higher education system, but enrollment alone will not eliminate inequalities. It has increased the number of those who are unable to successfully overcome the barriers of higher education. Without institutional targeted help, graduating students in higher education is another selection (Pusztai et al. 2019). The production and return on the investment motivated by student inequality - learning - is closely related to the resources inherent in the institutional structure, the possibilities of access and the mobilizability. One form of return may be a sense of student well-being experienced as a return (Marginson 2016).

In reality, there is still a risk that they will leave the university without a degree, that is, without a return on the energy and resources invested. Without compensation and targeted help, this option causes another selection among students with different risk factors.

Student well-being acts as a unifying force in each institution. Numerous studies in the higher education research literature address the possibility of achieving student well-being. Efforts that focus on solutions within institutions are more effective. Participating in collective actions increases attachment, asking students 'experiences raises their own beliefs in their development, in their ability to change. Prosperity, interpreted as a function of effective learning, means that certain qualities need to be "moved" in students. These are qualities needed to develop human abilities such as resilience (as coping with difficulties), persistence (as learning to start over), and self-esteem (belief in challenges). The development of these qualities as values will remain in the later lives of students. Trust, as the basis of cooperation, plays a role in the development of student well-being.

Feeling well-being includes developing student opportunities, some control over your life, a sense of purpose, and experiencing the impact of positive relationships (Huppert 2009).

Objective

The dissertation focuses on undergraduate students in health organizing shaped by societal needs who study in an elite university environment because we were curious about how this extra environment - which provides them with the highest level of theoretical and practical knowledge - affects students. This study situation provides an opportunity to examine student well-being and the student environment together. To get a positive or negative picture of students ’subjective well-being.

In addition to longitudinal studies of international and domestic research, there is also a cross-sectional study of students in the transition phase of higher education, which focuses on important events in student studies. The dissertation draws on the student experience of the initial period.

The background of the dissertation is based on international and domestic literature in the fields of social capital, student welfare, student integration and involvement, student success, student trust, student resilience and persistence.

The aim of the dissertation is to examine the factors that influence the academic efficiency of students in higher education. The aim is to fit a model describing the relationship system to the structure we have defined (Figure 1):

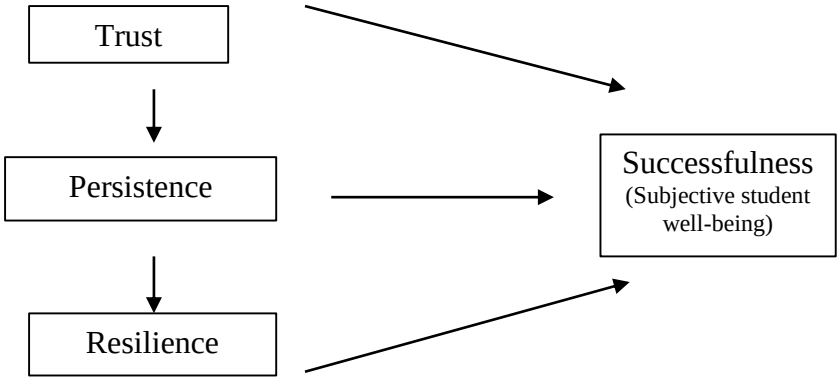

Figure 1: Components of the success model (own editing)

Methods

We consider it important that the subjective indicators of student success are the self-assessment of the individual's own life, in this interpretation subjective well-being is closely related to subjective success (Koltói 2015). Student success can also be defined as a favorable or desirable student outcome. Among the indicators of the desired outcome, the personal development of the student is of paramount importance (Cuseo 2018). The condition for the creation of the desired student result is the completion of the student, for this the help of the learning environment is necessary, and the process of establishing and maintaining the well-being of the students provides an opportunity for this.

In the dissertation, we analyzed the students' own evaluative well - being, satisfaction with the institutional infrastructure, subjective student performance, the value of persistence, trust and resilience intensity, and the value of success. Different statistical methods were used in the analysis. The independent two-sample t-test method was used, for example, in the processing of the WHO questionnaire to compare the mean of the probability variables. The Chi-square test, for example, is used to examine the distribution of aggregate trust categories by faculty. Linear correlation was used, for example, in the context of resilience value, persistence, confidence, and efficiency values. A binary and multinomial logistic method was used to filter for significant explanatory variables when comparing resilience categories. Regression analysis is used, for example, in the study of the persistence model to filter the explanatory variables influencing the resilience value. Factor analysis was suitable for the determination of directly unobservable background variables when isolating persistence factors. Using path analysis, we revealed causal relationships between the factors influencing success. Principal component analysis was used as a data reduction method in exploratory data analysis and in the production of predictive models: to establish the relationship between Success Value (a dependent variable) and a social capital index (independent variables).

The analysis was two-sided, with a level of significance of $\alpha = 0.05$. All statistical analyses were done using the SPSS 25.0 (SPSS Inc., Chicago, IL) software package.

Results

The research site is Semmelweis University of Budapest, in the period 2014-2016. The first-year students of four faculties (doctor, dentist, pharmacist, health organizer) were included in the sample: $N_{ÁOK} = 90$ people, $N_{FOK} = 175$ people, $N_{GYTK} = 145$ people, $N_{EKK} = 140$ people. The total number of first-year students in Budapest is 550. One study was attended by 200

health care students from the University of Debrecen. The focus of the study is on the first-year health care students (EKK) in Budapest, the first-year students of the other faculties ($N_{control}$ = 410 people) are included in the study as controls.

A more detailed sample distribution of first-year students at Semmelweis University: N_{EKK} = 140 (22 men, 118 women), 26%, $N_{ÁOK}$ = 90 (32 men, 58 women), 17%; N_{FOK} = 175 (64 men, 111 women), 32, N_{GYTK} = 145 (38 men, 107 women), 25%. The total sample size is N = 550 people. The mean age of the sample was 20.3 years. Percentage data of first graduate students by faculty: EKK (46%), AOK (12%), FOK (15%), GYTK (32%). 54% of the total sample came from the county seat or the capital, this is also typical of the EKK (45%).

The test results apply to EKK students.

Student general well-being

The regression study of the WHO WBI-5 well-being questionnaire found that EKK students had a significantly higher sense of well-being (significantly different for AOK students. The feeling of well-being was higher for men, students from smaller settlements felt better than those from larger settlements. While the good financial situation of the parents does not increase the feeling of well-being, the sport clearly raises. The increase in the feeling of life satisfaction (SWLS_H) raises the feeling of well-being. Satisfaction with the university infrastructure (e.g. curiosity of the subject, place of practice of religion, etc.) raises the feeling of well-being. In the first month of the first semester, a student who has no abandoned semesters, attends his / her classes, accepts institutional norms, wants to study further and has work experience can be characterized as successful. 20% went to the “More Effective” group and 80% to the “Average / Weaker” group. University infrastructure is “More modestly” used (46%) and “Richer” (54%).

Persistence

1. Regression Among the factors that significantly influence the value of persistence, it is positively influenced by the attendance of classes, taken Extra points, Importance of sports,, Religiousness of parents, Community membership. Negatively affected by Internet use (time spent).

2. Three factors can be distinguished by factor analysis: low, medium, high factors. Classification of some variables into trained factors (Table 1).

Variables	Persistence factors		
	High *(Perfectionist)*	***Medium*** *(Aspiring)*	***Low*** *(Falling)*
He visited during high school paid extra hours	.469	-.162	.227
Persistence value	**.785**	**.239**	**.002**
Mother's education	-.114	-.395	.245
Extra points	.118	-.333	.520
The importance of sports	-.098	.016	.561
A friend outside the university	-.048	.627	.523
Spending free time	.116	-.289	.599
Community membership	-.048	.052	.256
Academic value	.586	-.314	-.014
Use of the Internet	-.443	-.323	.339
Volunteering	-.136	.806	-.038
Parents' religiosity	.113	.048	.227
Proportion of hours visited	.735	.074	-.033

Table 1. Persistence factors

The High Persistence category is characterized by a remarkably high importance of persistence (pts = .785), high class attendance, norm acceptance, and the weight of special classes during high school. In the Low Persistence category, the charge weight of the persistence value is extremely low (pts = .0.002), but similarly low (not significant) in the first place, the acceptance of the norm, the attendance of classes, and the voluntary work have a negative charge. It is important to play sports, friends outside the university, spending free time. The charge weight of the Medium category is low (pts = .239), but it is still the "salvageable" category, due to its other characteristics: volunteering is an outstanding factor, enrollment is quite significant, class attendance is low and the mother's occupation is negatively charged, earned extra points, extra hours, norm acceptance. By raising the students' sense of identity by the institution, the students will be able to stay.

Trust

In the study of student trust, three categories of trust were defined and their predictor variables were evaluated using a multinomial logistic regression model (baseline: Low category). Influencing factors for each category: (i) For the intermediate category: life satisfaction, general well-being, Tolerance towards fellow students, Religious beliefs, and these significantly increase trust. Those coming from a smaller settlement are more confident. The

level of trust is low for EKK students. (ii) In the case of the *High cat*egory: in addition to the characteristics of the *Medium category*, the Persistence value, the importance of Sport, the influencing factors of the Internet, these significantly increase the level of trust in the high category. It has been found that those who do not start their studies immediately after graduation have a declining confidence value. There is no significant difference between the faculties in terms of trust categories (Chi-square = 6.889, df = 6, p = 0.331). The EKK is in the middle category in terms of the absolute number of students (Table 2).

	Trust categories			
Faculties	**Low**	**Medium**	**High**	**Total**
ÁOK	19	42	29	90
EKK	25	74	41	140
FOK	26	104	45	175
GYTK	20	90	35	145
Total	90	310	150	550

Table 2. Trust categories

Resilience

In a typical study of student resilience, after defining three resilience categories, their predictor variables were evaluated using a multinomial logistic regression model (baseline is the Low category). Influencing factors for each category: (i) For intermediate category: life satisfaction, general well-being, Effectiveness, Persistence, Internet, Religious belief. These factors significantly positively increase the value of resilience. The resilience value of the students of the EKK faculty is significantly lower. (ii) In the case of the High category: in addition to the characteristics of the Medium category, Tolerance towards the student, Importance of Sport, Importance of the Internet, trust are included as influencing factors. These significantly increase the level of resilience in a positive sense. The resilience of those from smaller settlements is significantly lower. In relation to EKK students, the type of Settlement: although the relationship between the two variables is not significant (Chi-square = 5.30, df = 4, p = 0.258), the distributions show that the resilience value of those from larger places is higher, they are more flexible from here. incoming students (Table 3).

Type of settlement	Resilience categories			Total
	Low	Medium	High	
Farm, village	8	16	2	26
Smaller town	10	39	2	51
County seat, capital city	15	39	9	63
Total	33	94	13	140

Table 3. Resilience categories

Successfulness

In examining the explanatory variables of student success, the common predictor variables characteristic of the four faculties are: Persistence, Religious Belief, Importance of Sport, Percentage of Classes Attended, General Well-Being, „Do you have a university partner who helps you learn", Trust. These significantly positively increase student success. In addition to these, AOK-FOK and GYTK faculties are also characterized by: Power over others, use of the Internet to download subject materials. Specifically, faculty characteristics: AOK-specific effect: parental effect on learning. Characteristic of GYTK: learning because of the importance of relationships. For EKK: Future work-related expectations, Worked already, Influence of university lecturer, Importance of diploma, Importance of self-esteem, Parents' education. Success categories of EKK students: According to the "attendance of classes" (Chi-square = 1.224, df = 1, p = 0.268) the result of the classification is not significant, but the proportions show that the higher the attendance rate of the classes, the more effective the student (Table 4).

Successfulness	Class attendance		Total
	<80%	>=80%	
Average / weaker	22	76	98
More effective	6	36	42
Total	28	112	140

Table 4. Successfulness categories

Path Analysis: Examining Student Success

Among the factors influencing student success, we revealed causal relationships using path analysis. For EKK students, it can be stated that student Success (R^2 = 0.6505) is shaped by two factors: Persistence (R^2 = 0.3539) and Resilience (R^2 = 0.4959) as sources of capital (Table 5). The effect of the former is weak, that of the latter is rather medium. The variance of Success, interpreted as a "goal," can be explained by 65 percent based on the model, and by 35 percent by other factors we do not yet know.

Coefficients of determination	
Variables	R^2 values
Trust	0.1263
Persistence	0.3539
Resilience	0.4959
Successfulness	0.6505

Table 5. R^2 values

The contact network of EKK students is shown in Figure 2 shows that Trust is not related to Success. Resilience acts through Persistence both indirectly and directly:

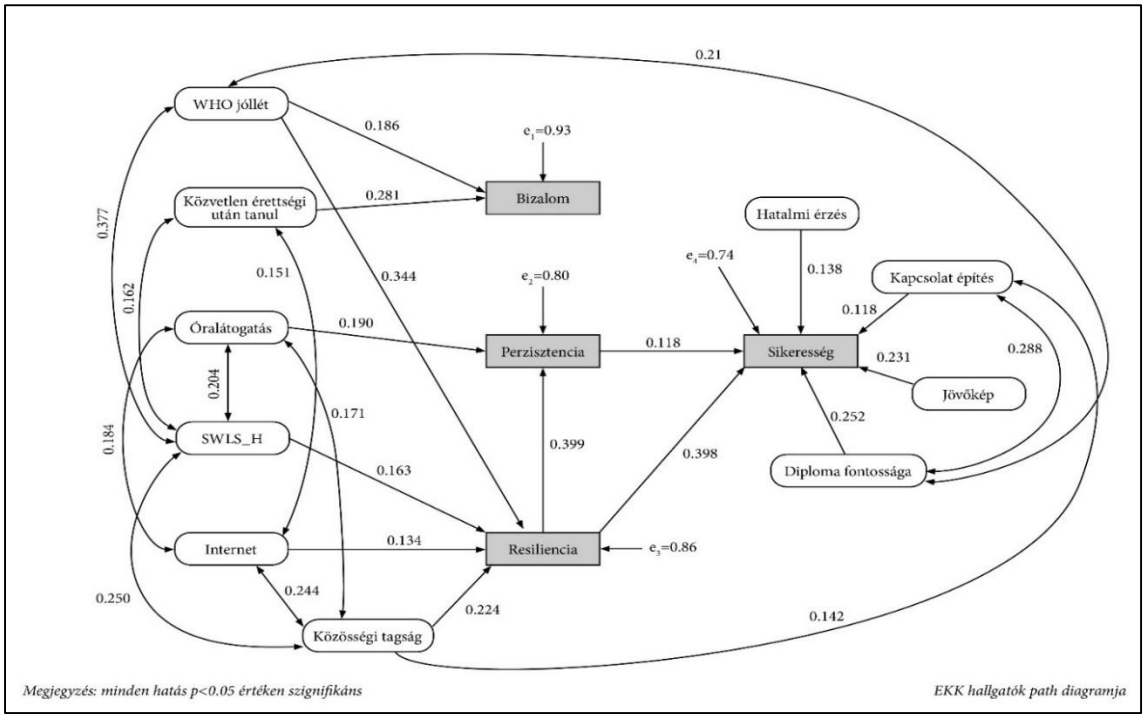

Figure 2: Path diagram of EKK students

The practical application is aided by the combined use of principal component analysis (PCA method) and linear regression to develop an algorithm that determines student success, which classifies students individually into their respective success categories based on the questionnaire data.

The results of the principal component analysis were interpreted in terms of factor disease and charge. Principal component analysis was performed by varimax rotation with the three sub-index variables of social capital - Trust value, Persistence value, Resilience value. We created the student resource index with the main components of the three sub-indices. A more detailed explanation of the statistical operation can be found in the appendix of the dissertation.

Conclusion

Based on the research results, we have tested and proved seven hypotheses in the dissertation:

H1. The analysis confirmed that well-being (WHO WBI-5) is positively influenced by university faculty, life satisfaction, sports activity, and satisfaction with university infrastructure. The gender of the students and the financial situation of the parents have a negative effect. With the study, we collected information about the general well-being of the incoming students, to gather the factors contributing to student success, and the possibility of consciously influencing student well-being.

H2. The analysis confirmed the assumption that different student factors are separated by the factors determining student persistence. Persistence charge-weight can be divided into three types: high, medium and low. Energy and time spent on school activities (Astin 1984), embeddedness in study work (Kuh et al. 2008), and individual experience (Tinto 1975) appear in different ways in the three types, and are therefore an extremely important performance indicator.

H3. My assumption that trust values can be distinguished by their magnitude has been met. Examining an aggregate trust index variable, there is no significant difference between faculties in terms of trust categories. The EKK is in the middle category in terms of absolute number of students. The explanatory variables affecting the trust categories were determined using a logistic model (baseline is the low-confidence group). The predictor variables for the high-confidence group are: life satisfaction, WHO WBI-5 well-being, tolerance to fellow students, religious beliefs, persistence, the importance of sport, the Internet, and all have a positive impact. Immediately after graduation, you began to study negatively, if you started your studies

later, the value of trust is lower. In the moderate trust group, life satisfaction, WHO WBI-5 well-being, tolerance to fellow students, religious belief have a positive effect. The type of settlement, on the other hand, significantly shifts the value of trust towards lower settlements.

H4. The assumption that resilience values can be distinguished based on their magnitude was fulfilled. The variables of the high resilience group are interpretable: the better the life satisfaction, the higher the well-being index, the value of persistence, the higher the value of resilience. Such a classification was given to religious faith, the value of trust, the importance of sport, internet use, faculty. In this category, the value of resilience decreases for students from smaller settlements. Compared to the previous ones, trust, settlement and sports were not included in the medium resilience group. In terms of faculty, the value of resilience decreases for EKK students. We found characteristics whose presence predicts some level of resilience. These include attraction to religion, real relationships, muscle, goal, and so on. (Masten 2007). We also hypothesized that resilience was positively affected by the trust that was fulfilled. In the model, trust is the second largest value. Persistence has the highest value.

H5. The main direction of my research was to explore the factors that indicate university success: what data can be used to predict who will be successful at university, who can successfully complete their studies. Finding variables that predict academic success when entering university can help optimize student development and educational success. I divided the success index into two categories: Average / Weaker and More Effective categories and examined the properties of each category with binary logistic regression (baseline category was the Average / Weaker success category). Examining the predictor variables by faculty, in the case of AOK-FOK, the positive variables (ie motivators) for success are “Power over others”, “Religious faith” and “Parent effect on learning” and “Value of persistence”. Among GYTK students, “Religious Faith” and “Power over Others” stand out among the significant positive predictors. Among the significant predictor variables obtained for the students of the EKK faculty, the “Religious Faith” with a positive effect and the “University Fellow Assisting in Learning” have a positive effect. However, the variables also have negative effects on faculty students: the low value of “Do not be discouraged if I make a mistake” (i.e., easy and “Parent education”), which worsens student success. another variable shows the effect of a less supportive social background.The success of children of children with lower education is adversely affected by lower education.Comparison of variables by faculty gives interesting results.The variable characteristic of medical students is “Parental impact on learning”, which indicates that parental influence / expectation The specific variable for GYTK students is “Learning because of the importance of relationships”, which emphasizes the importance of

future, professional and social relationships.Variables for EKK students: “Future job expectations”, it is important to have a degree , which you can definitely position yourself in; “University i the role of educators ”, which means that the role of educators as authorities and reference persons is important for these students; “This degree is important because this qualification is recognized,” which also means a conscious choice of major and is likely to lead to social advancement.

H6. The assumption was that the studied structures (trust, persistence, resilience, success) have a positive effect on success. Among the factors affecting the Success Block, Resilience has a greater direct effect than Persistence. It has a direct impact on the importance of Power, Relationship Building, Vision, Diploma. The correlation value of WHO well-being has an indirect effect through the importance of the Diploma, Resilience and Persistence. Trust has no direct or indirect impact on success. Among the factors affecting the Resilience block, its value is directly affected by the factors of Life Satisfaction, Internet, Community Membership, and WHO Welfare. Among the factors affecting the persistence block, Class Attendance and Resilience have a direct effect.

H7. The assumption that a mathematical algorithm can be developed to determine student success has been realized. The full description can be read as an appendix to the dissertation. With the help of the statistical procedure, the difference in the social capital of the students we have defined can be established. To do this, building on Coleman’s interpretation of social capital, we create a measure of social capital whose three dimensions are persistence (trust in graduation), resilience (trust in itself), and trust (as the basis for collaboration between people). It is necessary to define a score threshold per faculty that provides an estimate of the student's future study based on the social capital brought in by first-year students, as defined above: it is expected to be successful or intervention is required to progress. The student data is created by filling in a questionnaire, the important dates of which are the day the results of the admission are revealed, the second day is the day after the end of the freshman camp, the following dates may come under the jurisdiction of the faculty. The information obtained from the comparison of the data determines the tasks to be done, which must be based on the student's own activity.

Summary

The high level of students' subjective well-being is an important determinant of a student's effective, balanced study path. To gain access to a degree, to evaluate the possibility of studying in higher education, to assess the student's self-esteem, to recognize and use the relationship culture inherent in institutional communities. The presence and acquisition of student social capital is a condition for student well-being. Student social capital as trust as trust in educational actors (Coleman 1988), on the other hand, trust in higher education institution and learning goal, which is represented by persistence (Standfest 2005, quoted by Pusztai 2008), which can be identified with the intention to graduate; the student's self-belief, which is reflected in the resilient behavior, with the help of which, despite his difficulties and failures, the student tries to adapt to higher education conditions (Berszán 2015). The findings in the dissertation are valid only for the study population, but may contribute to the chances of obtaining a degree among students.

My publications list

Own scientific publications related to the dissertation

Dinyáné SzM, Pusztai G. (2016) Examination of the five-item well-being questionnaire of the World Health Organization among first-year students of Semmelweis University. Orv. Hetil., 157 (44): 1762-1768

Dinyáné SzM, Pusztai G. (2017) Investigation of persistence value as a study protection factor among Health Care Management students, EUROPEAN JOURNAL OF MENTAL HEALTH 12: 135-151

Dinyáné SzM, Pusztai G. (2019) Empirical study of persistence value among students pursuing health studies at the beginning of student professionalization LEGE ARTIS MEDICINAE 29 (6-7): 301-311.

Dinyáné SzM, Pusztai G, Szemerszki M. (2019) Risk of dropping out among medical students, Orv. Hetil., 160 (21): 829-834.

Dinyáné SzM, Pusztai G, Szemerszki M. (2020) Examination of learning success among first-year students pursuing health studies. Orv. Hetil., 161 (4): 139-150.

Own scientific publications independent of the dissertation

Sára Z, Csedő Z, **Dinyáné SzM**, Pörzse Gábor. (2013) Knowledge transfer in health informatics education: quality, efficiency, measurability. Orv Hetil, 2013. 154 (32): 1269-1276

Dinya E, Kokovay Á, Csedő Z, **Dinyáné SzM**, Sára Z. (2014) Modern electronic curriculum development at Semmelweis University: integration of international good practices and innovative teaching methodologies into the BSc training in Health Care Management. IME. 13 (5): 26-30.