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SOCIAL TIES OF UNIVERSITY STUDENTS: EVIDENCE FROM A LONGITUDINAL SURVEY IN RUSSIA

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Student friendship networks can be considered as social capital, which is known to be a very useful resource during university and after it. Several empirical studies have examined static models of student behaviour in social networks. In this study we analyse the dynamic changes of student social connections. We use original longitude data of student social ties from one Russian university. Data was collected within the framework of a research project of the International Research Laboratory for Institutional Analysis of Economic Reforms. To investigate factors influencing the evolution of social ties during university probit regressions were tested. We found that students with similar characteristics such as gender and academic achievement are more likely to become friends and continue to be friends. Both studying in the same group and living in a dormitory increase the likelihood of being friends. We also found a transitivity effect. We observe a positive effect of having common friend on friendship ties. We also notice a positive link between reciprocity and friendship stability.

JEL Classification: D85, I21, I23

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1. Introduction

During university students communicate with each other, and build social connections, some of which are useful both for their studies and for creating future labour market opportunities. The influence of social connections on student academic performance or the peer effect has been extensively studied in Russian and foreign research (Epple, Romano, 2011; Poldin, Yudkevich, 2011; Griffith, Rask, 2014). The link between social ties and employment opportunities is also well-known from the sociological and economic literature (Lucy, 2010; Brook, 2005; Weaver, Habibov, 2012). However the question of what mechanisms are involved in the process of social connections formation is vital. A wide range of empirical research has used a static approach without examining the dynamic changes. To the best of our knowledge there is no Russian research on this topic. Therefore we focus on longitudinal data analyses. Our research investigates how individual student characteristics and the structural attributes of networks influence the evolution of social ties in a university environment.

This study analyses student social capital, investigating the dynamic changes of social networks during the education process. We examine factors influencing the formation and dissolution of student friendship. Previous studies have identified three groups of factors which increase the likelihood of friendship in the static approach: homophily, geographic closeness and transitivity. We assume that these determinants also influence dynamic changes in social networks. The longitude data allowed us to check the hypotheses on the impact of previous social ties to the future one. We also estimate some characteristics of network structure to analyse their role in changes in student friendships.

Our research conceptualizes social networks as social capital. This approach is widely used in the research. Supporters of the network approach in the identification of social capital underline that social capital exists in actor's social connections. Social capital is accumulated in social networks and allows social network participants to use network resources. The structure of social networks influences the formation of social capital and the distribution of benefits among individuals (Woolcock, Narayan, 2000).

Social capital is made up of friendship, professional and general contacts which create the opportunity for person to use his financial and human capital (Burt, 1992, 1997). This can be considered as an individual social network (Lin, 1999). According to the structural holes concept, social capital is formed during the interaction between individuals from different social groups and networks. Moreover connections play a crucial role in social capital formation (Burt, 2001). Lin (2001a, 2001b) shows that close and reciprocated ties among network participants lead to social capital accumulation.

A social network is the structural part of social capital (Radaev, 2003). Participation in a social networks or membership in a social group or organization leads to an increase of trust between actors. The structural component is determined by the social networks that generate the basis for social capital. Social ties in a network have an important function in the distribution of information and resources in society.

Social capital is intended mostly for increasing collective actions. On the individual level social capital is defined as a set of resources and advantages available to an actor as a result of their involvement in a social network (Lin, 2001b). Therefore social capital is interpreted as an actor's social network, and a social network contributes to the generation and distribution of social capital (Burt, 2000).

The rest of the article is structured in the following way. Section 2 contains the stylized facts concerning factors of student friendship formation and our assumptions about dynamic changes in student social networks. Section 3 describes the data and features of the sampling. Section 4 describes the descriptive statistics for the network analysis. Section 5 represents our methodology and results. Section 6 concludes by discussing the future directions in studies of dynamic changes in networks.

2. Stylized facts

"Birds of a feather, flock together"

Homophily is the tendency of people with similar characteristics to form relationships with one another more than with people with dissimilar attributes. This intuitive principle has been confirmed in several empirical studies. There is a wide variety of studies of homophily in student friendship formation: sex, race and ethnicity, age, education level and hobby and other characteristics, even genes (Boardman, Domingue, Fletcher, 2012); racial and ethnic homophily (Kenny, Stryker, 1996; Currarini, Jackson, Pin, 2010; Joyner, Kao, 2000); age and sex (McPherson, Smith-Lovin, Cook, 2001; Kirk, 2009); educational attributes (Marmaros, Sacerdote, 2006; Krekhovets, Poldin, 2013). Students with similar academic results create friendship ties more often than ones who have dissimilar achievements. Participation in the same university activities and studying in the same courses positively influence the friendship network formation.

Geographic closeness

Homophily is important but not the sole mechanism for social tie formation. Another principle of social connection based on spatial proximity. Individuals are likely to connect to others who are close to them in terms of geographic distance. Some researchers do not separate

physical closeness and homophily considering that the first is a part of the second in terms of space (McPherson, Smith-Lovin, Cook, 2001). Golder and Yardi (2010) notice that "Homophily can be seen as a psychological as well as structural phenomenon". For student social networks, the closer students, the higher the likelihood of ties. There is a wide range of physical proximity. For instance Preciado et al. (2012) found that likelihood of friendship decreases with distance. Other research found that sharing the same dorm room significantly increases the chance of two students becoming friends (Wimmer, Lewis, 2010, Baker, Mayer, Puller, 2011). Studying in the same cohort is a significant factor in student friendship formation. For instance, "placing two students in the same entering class has a 6x effect on the frequency of their interacting" (Marmaros, Sacerdote, 2006). To be assigned to the same dormitory room or class is an all-important determinant of link formation (Kun et al., 2014).

"Friend of a friend is a friend"

Transitivity is very important property of social networks. Transitivity is an attribute of networks described in terms of graphs: the tendency of two nodes to be connected if they share a neighbour (Newman, Park, 2003). The concept of transitivity is also rooted in sociology and human nature (Coleman, 1990). Transitivity reflects the psychological equilibrium search process described by Heider (1946, 1958) in the balance theory. In triads positively connected people tend to establish a consensus about third parties. In other words friend of a friend is a friend. Transitivity as a measure of cohesion in social networks can be estimated by the transitivity index or clustering coefficient.

Student friendship formation transitivity can be explained as the following: if it is the case that student A is a friend of student C and that student C is a friend B, then students A and B are more likely to become friends.

In our study we investigate the influence of traditional determinants of student friendship in longitude changes. We assume that students with similar characteristics are more likely to become friends and keep friendship ties over time, while friends in the first period of observation who are less similar will be more likely to stop being friends in the following years. We also suggest that physical closeness is likely to be the crucial factor in friendship networks. Therefore studying in the same group positively influences the likelihood of become and staying friends and students who are roommates are likely to become friends, while a change of cohort is more likely to lead to a breaking of friendship ties. Our longitude data allows us to test the assumption about the transitivity effect. We expect that two students who have mutual friend in the first period are more likely to become friends in following periods.

Since we use the network approach to analyse dynamic changes in student friendships, we verify the relationship between friendship ties and network characteristics. Particularly we

examine the influence of three network attributes, which reflect social structure and position: indegree, outdegree and reciprocity.

Reciprocity is an indicator which relates to social cohesion. Reciprocity shows the degree of mutuality in the network. Reciprocity characterizes the tendency of vertex pairs to form mutual connection to each other (Garlaschelli, Loffredo, 2004). In other words if students A and B describe each other as friends, their link is reciprocated. Research demonstrates that reciprocity is one of the crucial factors of friendship formation (Schaefer, et al., 2010, Merckenaet al., 2010). Using this rule of friendship nomination we indicate reciprocated and unreciprocated ties in the network. We supposed that reciprocated friendship links are more stable over time than unreciprocated ones.

To analyse friendship network developmental processes we use degree measures. For directed networks it is usually calculated by indegree and outdegree. Indegree is the number of ties directed to the actor, and outdegree is the number of ties that the actor directs to others. In terms of student friendship indegree shows how many students nominate this person as a friend, in other words it shows the popularity of the student. Outdegree is used to demonstrate the activity of actor, how many friends he or she named. We assume that if students have similar positions in the network in terms of activity and popularity they are more likely to become and continue to be friends.

3. Data

In this study we use original data collected within the framework of International Research Laboratory for Institutional Analysis of Economic Reforms. To collect the data we questioned students from Higher School of Economics in Nizhny Novgorod, Russia. Questionnaires were presented to the students three times over three years of their university studies. First year students were asked at the beginning of the academic year, subsequent surveys were carried out in the middle of the academic year. All questionnaires were handed out at the end of lectures and the students had approximately twenty minutes to fill them out. Students were encouraged not to discuss questions with other participants.

Questionnaires asked about the social ties and socio-demographic characteristics of the respondents. Friendship nominations were obtained by asking respondents to name the students from their faculty whom they consider to be friends. There were no limits on how many names the students could write. We define there to be a friendship link if one of student in the pair selects another as a friend. We use the same rule for ties establishing the network of academic assistants - those who participants usually ask for help with their studies. The questionnaire gathered information about gender, financial position, attitude to work and study.

In addition to the data gathered from questionnaires we used information from university offices. Specifically, student GPA were obtained from university student ratings published at the end of the semester. A ten-point grading system exists in the university (10 being the highest and 4 is the minimal pass). Grades on the Unified State Examination (USE) and information about tuition was also collected from dean's offices. Grades for USE are calculated as the sum of four exams for all faculties except the faculty of Business Information Technology. The maximum grade for each subject is 100. The GPA and USE grades were normalized by faculties[4]. Individual characteristics of respondents are presented in the appendix (Table A1).

Students from four faculties participated in the survey. Our average respondent is female, from a family with an average income, living with her parents. She does not smoke or work. She is a government subsidized student, and her average grade is approximately 7 (good) during the whole period of observation. Most of respondents did not work in their first year, but in the next waves more and more students started working. Working did not appear to affect academic results; GPA averaged around 7 for the all observed waves.

4. Networks

Friendship networks are represented by directed graphs, where vertices identify students and edges reflects friendship ties. For structure analyses and visualization we used NODEXL, based on Microsoft Excel. Network attributes presented in Table 1.

Table 1.Networks attributes

Characteristics	Faculty of Business Information Technology			Faculty of Management			Faculty of Economics			Faculty of Law		
Waves	**I**	**II**	**III**	**I**	**II**	**III**	**I**	**II**	**III**	**I**	**II**	**III**
Number of vertices	93	88	80	97	89	93	105	103	90	60	55	51
Number of ties	452	347	263	486	330	302	537	439	333	244	210	197
Average degree	4.9	3.9	3.3	5	3.7	3.2	5.1	4.3	3.7	4.1	3.8	3.9
Clustering coefficient (%)	34.9	33.4	33	35.9	30.1	24.6	43.1	40.7	41.4	25	26.7	24
Reciprocated ties (%)	63.3	57.1	54	63	58.8	45	67.4	56	64.3	51.6	50.5	57.9

According to Table 1 network structure seems to be stable over the three waves of observation and nearly identical among faculties. In all faculties, network evolution is very similar. The number of vertices, in other words the number of students included in the network, decreased probably because some students dropped out. Approximately 90% of all students

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[4] For standardization we divide difference between student grade and average grade for faculty into the standard deviation

participated in friendship networks and students were included in the network if he or she was nominated as a friend by other students even without completing the questionnaire. The average degree shows how many friends one student had on average. Students from the faculty of law had four friends during the waves of analyses, the average number of friends in other faculties varied from three to five. The indegree distribution in the networks is demonstrated in Figure 1.
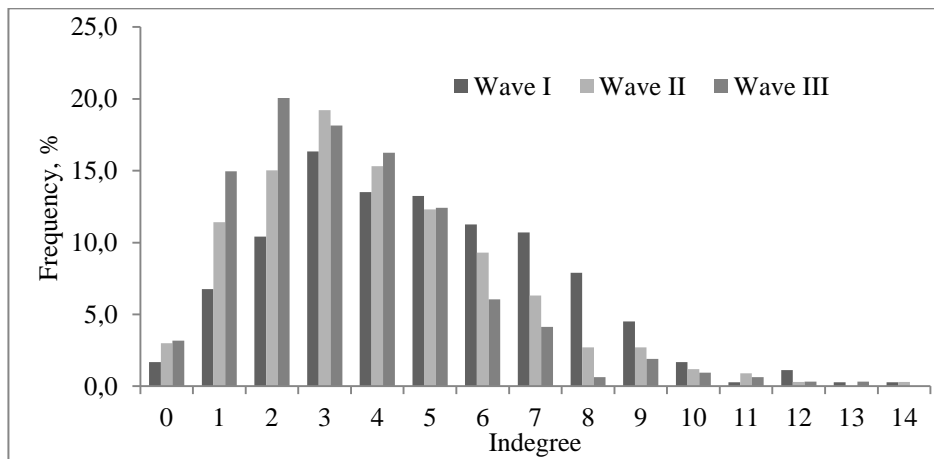

Fig. 1.Indegree distribution

Using information on indegree it is possible to determine the number of popular students in the network. According to the previous analysis indegree distribution among faculties is very similar so we merged data from the four networks. Figure 1 demonstrates that 75% of respondents had from 2 to 7 indegree friends during the three waves of observation. In the first year students were nominated by a larger number of classmates than in the later waves. Only 1.7% of participants did not mentioned as a friend in the first year while in the second and third years it figure increased to 3% and 3.2% respectively. There were students with the highest indegree coefficient in all waves of analysis, whom were likely to be most popular students in the network. Are they the same students who are popular in the first, second and third waves of observation? The answer is no. As we know the identification number of each respondent we can establish that only one student had highest number of indegree friends for three years. Nevertheless students with the highest indegree characteristic in the first year had many ingoing friends in other years, more than the average for the network.

The indicator of reciprocity demonstrates the same tendency as the clustering coefficient. In three faculties it decreased slightly over the study. Nevertheless more than half the friendship connections were mutual in the longitude data. A detailed analysis of reciprocity in friendship networks confirmed our assumption about mutual connections. As we hypothesized reciprocal ties seems to be more resistant than nonreciprocal ones (Fig. 2, 3).
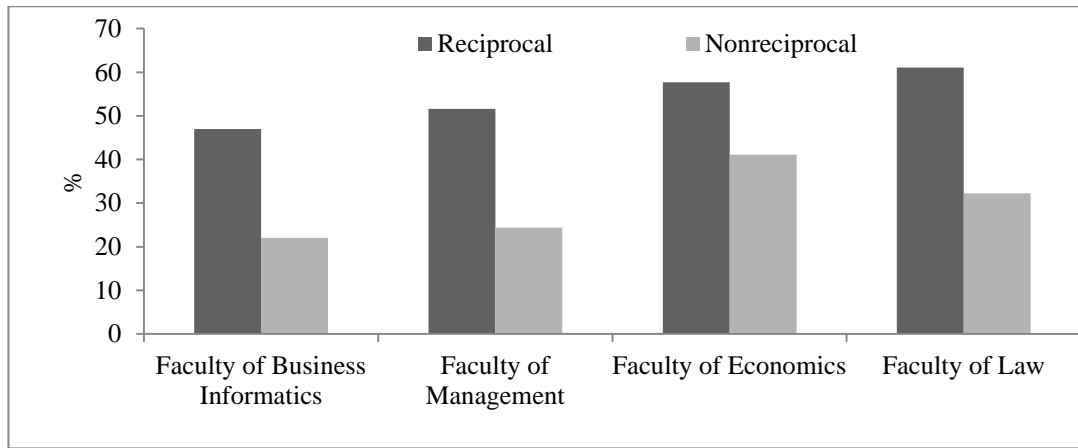
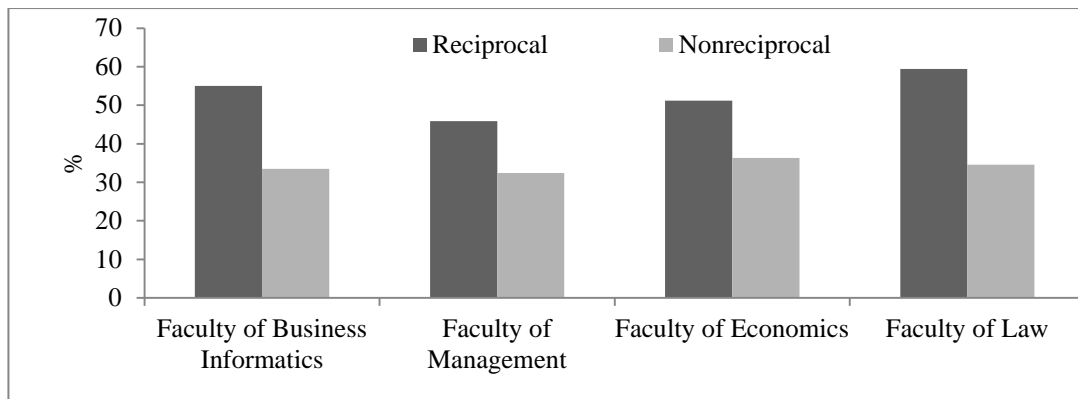Fig. 2. Proportion of friendship ties held in the second year

Fig.3. Proportion of friendship ties held in the third year

To analyse the stability of friendship connections reciprocal and nonreciprocal ties were collated. Figures 2 and 3 demonstrate a positive linkage between reciprocity and friendship stability. The proportion of mutual ties was 51.6–67.4% in the four faculties in the first year of observation. Approximately half of these connections continued into the second year while nonreciprocal ones mostly did not. For instance in the Faculty of Law 61% of reciprocal links and 32% nonreciprocal ones remained stable in the second year. A similar situation was observed in the third year. Among four faculties about 53% (standard deviation 5.7) of reciprocal ties in the second year remained in the third while only 34% (standard deviation 1.7) of nonreciprocal connections survived. Despite the proportion of reciprocal ties decreasing in all faculties except for law these friendship patterns seem to be stable over time. Thus the assumption that reciprocal friendship connections should be stronger in the network than one-way ties is confirmed.

5. Estimations

The empirical model is used to estimate the probability that students with particular characteristics will fall into the category of being friends using probit regression analysis:

$$P(Friends = 1 \mid X) = \Phi(X^T \beta), \tag{1}$$

where $\Phi(\cdot)$ is the cumulative distribution function of the standard normal distribution.

A set of explanatory variables (X) contains different aspects of student similarity and networks characteristics. According to the hypothesis that the triangle is a very stable social pattern and the transitivity effect, the presence of a common friend (or friends) is also treated as a determinant of friendship ties. The availability of several waves in the dataset allows us to take into account the dynamics of relations and to control for friendly relations in the period of the previous survey. Estimation results are presented in the appendix (Table A2).

The results confirms our assumption about the effects of homophily and geographical closeness. Table 2A shows that students of the same gender are more likely to be friends. At the same time differences in grades reduces the likelihood of becoming friends, it means that students with similar academic performance more frequently become and remain friends. A positive effect of the smoking variable was found only in the faculties of Business Information Technology and Economics, because the proportion of smokers in these faculties significantly higher than other ones.

Studying in the same group significantly increases the likelihood of becoming friends, which proves the hypothesis of the tendency for friendship ties to form because of geographical closeness. Same effect was revealed about students living situation. Students living in the dorm are more likely to be friends.

The popularity and activity of the student in the friendship network also play a significant role in the tie formation. The indicator of student popularity is his indegree, which shows the number of students who nominated this person as a friend. Outdegree, in other words how many students the respondent nominated as friends, shows his activity in the social network. We use the absolute value of difference of indegree/outdegree to analyse the influence of the student's position in the network on the friendship ties. Activity is a more important factor than popularity in terms of friendship. Students with similar activity in the network have a greater chance of becoming and remaining friends, while only in the faculty of Economics is the factor of popularity statistically significant.

The transitivity effect was confirmed for all faculties. If two students have a common friend or friends in the previous year the likelihood of becoming or continuing to be friends significantly increases. We also found a correlation between the student clustering coefficient and friendship ties. For students with a similar network position in terms of clustering the probability of being friends strongly increases.

We also estimated the marginal effect of student characteristics on the probability of being friends. The results are presented in Table 2.

Table 2. Average marginal effect on probability of being friends

	Marginal Effects		
	Wave 1	Wave 2	Wave 3
TheSameGender	0.0069***	0.0080***	0.0068***
TheSameGroup	0.0429***	0.0358***	0.0312***
TheSameWorkingStatus	-0.0010*	-0.0011*	0.0014
Living in dormitory	0.0061***	0.0041***	0.0014***
BothSmoking	0.0048***	0.0039***	0.0089***
GPADifference	-0.0020***	-0.0033***	-0.0037***
Note: significance level 0.01 - ***;0.05-**; 0.1 - *			

The dynamics of the marginal effects shows that the impact of factors is stable over time: the direction of influence and the size of the marginal effects are similar for the three waves of the survey. Studying in the same group has the greatest impact on the friendship formation among other variables. If two students study in one group the probability of friendship increases by approximately 4% in first and second years and by 3% in the third. If students have a job the likelihood of friendship decreases. The explanation for this result could be that working students miss classes and communicate less with group mates. Similar academic performance positively influences friendship development. If two students smoke, the likelihood of their becoming friends increases. This can be explained by the homophily effect, and smokers meet each other in the smoking place and can communicate more often.

To analyse the stability of friendship ties we generated a subsample of students who made friends during the first wave of observations. The second and third waves were used to test the homophily effect. The estimation results of marginal effects are presented in Table 3.

Table 3. Average marginal effects on the probability of continuing to be friends for friends in first wave

	Marginal effects			
	Faculty of Business Information Technology	Faculty of Management	Faculty of Economics	Faculty of Law
Tuitionboth	0.0006	-0.0008	0.0008	0.0014
TheSameGender	0.0056**	0.0090**	0.0127**	0.0178**
TheSameGroup	0.0593**	0.0593**	0.0633**	0.0581**
TheSameWorkingStatus	0.0042**	0.0020	0.0004	0.0027
Living in dormitory	0.0072**	0.0112**	0.0058**	0.0069**
Financial status	-0.0049**	-0.0054**	-0.0045**	-0.0050*
BothSmoking	0.0094**	0.0109**	0.0083**	0.0063*
GPADifference	-0.0044**	-0.0032**	-0.0018**	-0.0029**
HavingCommonFriend	0.0386**	0.0420**	0.0412**	0.0429**
Note: significance level 0.01 - **; 0.1 - *				

For friends in the first year, the homophily increases the probability of remaining friends in the future. The inverse effect was found only for the financial status variable, which was a subjective, self-selected characteristic. Other indicators influence the probability of being and remaining friends rather predictably.

The strongest factor of student friendship is being in the same group. Studying in the same group increases the probability of continued friendship ties by approximately 0.6% in all faculties. Friendship between two females or two males seems to be more stable over time than ties of different sexes.

Even for students who are already friends, a discrepancy in grades significantly reduces the likelihood of continued friendship, with the greatest effect in the Faculty of Business Information Technology.

However Figure 5 shows the marginal effects for various values of the differences in the average grade.
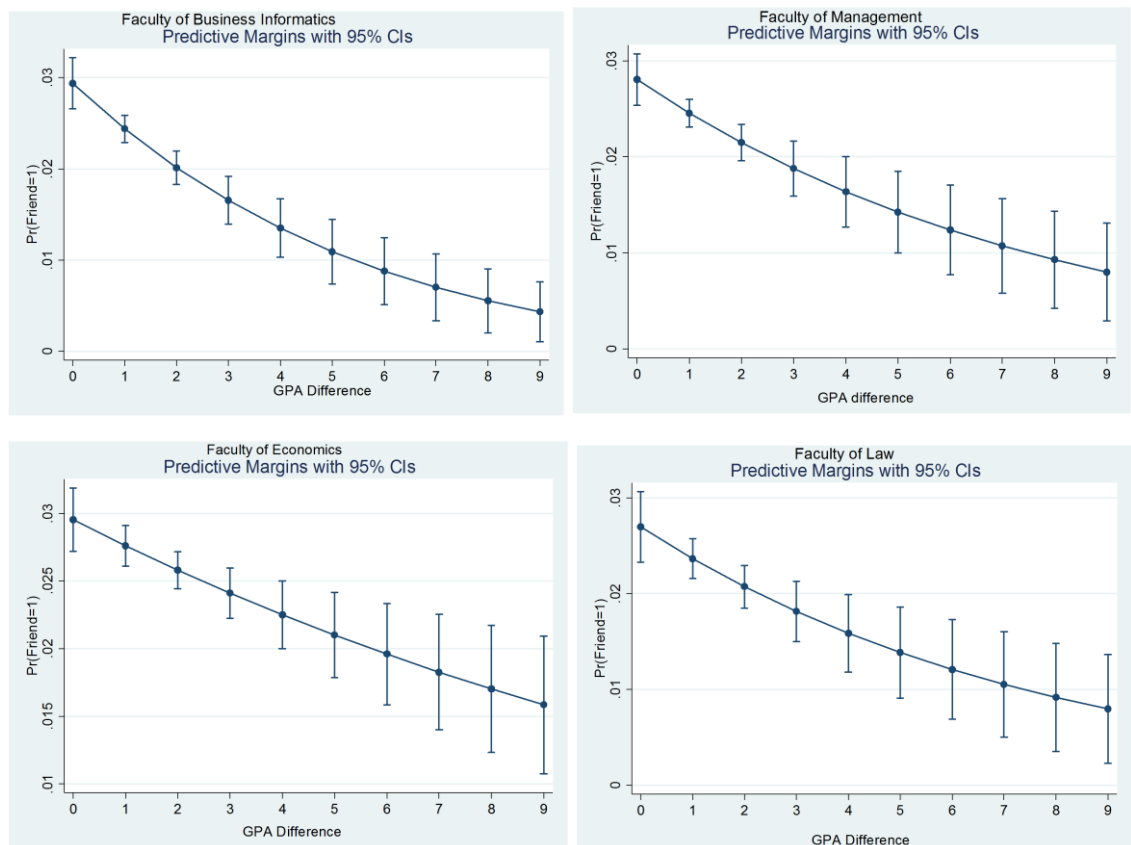

Fig.5. Predictive Margins of GPA difference

The probability of friendship decreases with an increase in the absolute value of the GPA difference. For instance if we have two excellent students with highest academic results the probability of their friendship increases by about 0.3% in all faculties (the weakest effect is in the Faculty of Law). On the other hand the likelihood of friendship between an honours student and

poor one falls by half. The negative trend is more linear for faculty of Economics and more hyperbolic for other ones. The highest drop is observed in the faculty of Business Information Technology, where the probability of their friendship rises less than 0.1%.

To analyse the network effect we estimated the marginal effects for various values of the differences in indegree and outdegree for the three waves of observations. The results are presented in Figures 6 and 7.
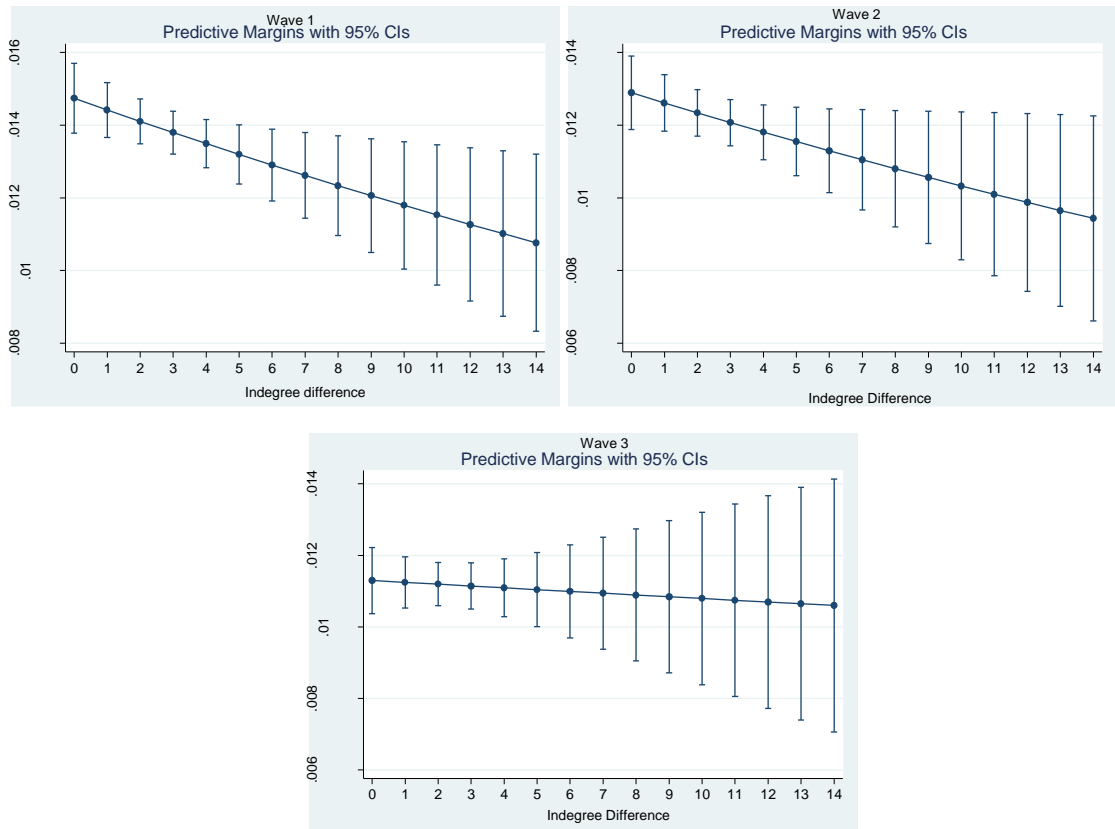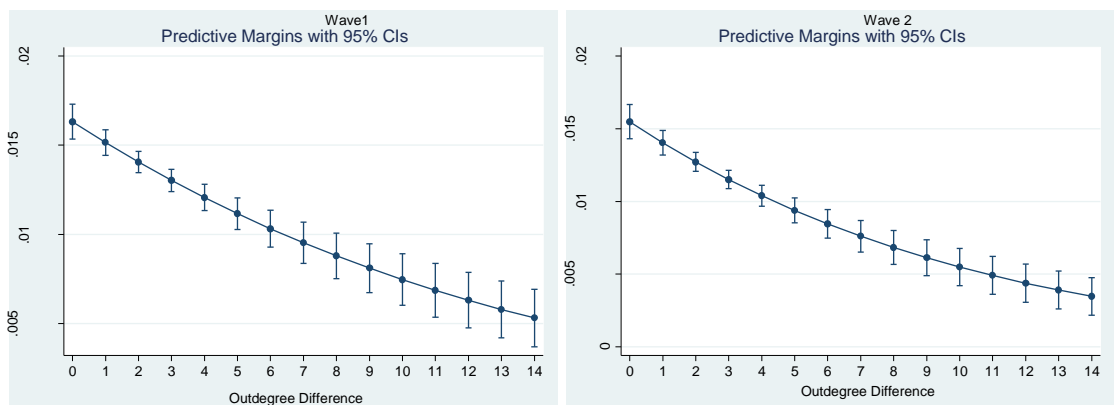

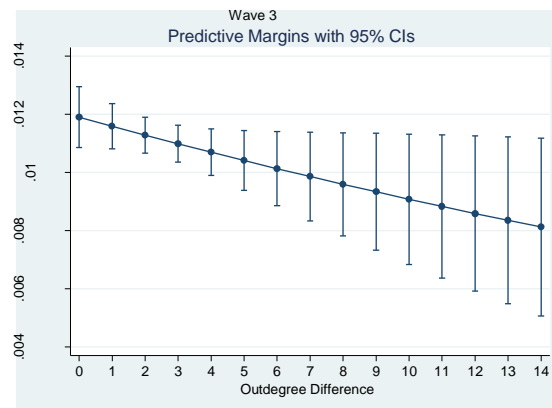Fig.6. Predictive Margins of indegree difference

Fig.7. Predictive Margins of outdegree difference

The influence of a student's position in the network on the probability of friendship connections varies from wave to wave. The increase of the absolute value of indegree/outdegree difference leads to a decrease in the probability of friendship. However the nature of indegree and outdegree marginal effects differs in the details. The strongest effect of student popularity is observed in the first wave. If two students have similar levels of popularity (both popular or both unpopular) the likelihood of their friendship increases by 0.15% in the first wave and by 0.13% and 0.11% in the second and third waves respectively. In the third year the probability of friendship is almost independent of indegree difference, which means there is equal probability for friendship between students with different network positions.

Regarding predictive margins of outdegree differences we found a more stable pattern continuing throughout the survey. Friendship between two active students is much more likely than friendship between an active student and a inactive one. This is especially characteristic of the first and second year waves. For the third year students the probability of friendship also decreases with an increase in the absolute value of outdegree difference but less dramatically. On the whole popularity and activity in the friendship network seems to be one of the crucial factors of tie formation and development.

6. Conclusion

This study analyses the determinants of student friendships and their evolution. We find a strong influence of homophily on friendship formation. A detailed investigation reveals the persistence of interconnections over time.

The descriptive network analysis shows that friendship networks have a stable structure. Over the three years of the study all observed network characteristics fluctuate insignificantly slightly. Most changes were connected with the number of network participants because of student drop out. On average students have from 3 to 5 friends at university and this figure

insignificantly decreases during the waves of observation. More than half the friendship connections were reciprocal in the longitude data and this kind of tie seems to be stronger and more stable than one-way ties.

Same-sex students have a greater chance of becoming and remaining friends as do students with similar academic performance, and if two friends achieve different academic results it negatively influences the chance of their friendship continuing. Students with a common friend or friends tend to be connected confirming the transitivity effect. The position in the network in terms of popularity and activity seems to play a key role in tie formation. At the same time, the popularity and the activity of students demonstrate different patterns in their changes over time. The effect of popularity on the probability of being friends wanes, while the effect of activity is stable for all waves. This could be the result of the appearance of lasting ties between students during university.

The main factor of friendship at university is studying in the same group. The distribution across study groups is an exogenous process. During enrolment the Dean's office randomly distributes students into groups. Therefore knowing the mechanism of tie formation among students the administration of university can influence the formation of the potential social capital of students.

We focus on longitudinal data analyses to find out how individual student characteristics and structural attributes of the friendship network influence the evolution of social ties in a university environment. We are planning to continue this study using the results of the fourth wave of observations to estimate the full cycle of the dynamics of social ties. This will help to recognize the evolution of student social capital from enrolment to graduation.

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APENDIX

Table A1. Individual characteristics (percent in the brackets)

Characteristics		WaveI	WaveII	WaveIII
Faculty of Business Information Technology				
Gender	Men	55 (56.1)	47 (54)	45 (50.6)
	Woman	43 (43.9)	40 (46)	44 (49.4)
Living conditions	In dorm	8 (8.2)	9 (10.4)	5 (5.6)
	Not in dorm	75 (76.5)	69 (79.2)	59 (66.3)
	No answer	15 (15.3)	9 (10.4)	25 (28.1)
Financial status	Low income	17 (17.3)	3 (3.5)	
	Below average income	9 (9.2)	1 (1.1)	
	Average income	48 (49)	61 (70.1)	
	High income	10 (10.2)	12 (13.8)	
	No answer	14 (14.3)	10 (11.5)	
Working status	Working	16 (16.3)	25 (28.7)	32 (36)
	Non-working	68 (69.4)	53 (60.9)	31 (34.8)
	No answer	14 (14.3)	9 (10.4)	26 (29.2)
Smoking behavior	Smoking	6 (6.1)	8 (9.2)	7 (7.9)
	Non-smoking	78 (79.6)	70 (80.4)	58 (65.2)
	No answer	14 (14.3)	9 (10.4)	24 (26.9)
Tuition	Government subsidized	81 (82.7)	76 (87.4)	74 (83.1)
	Not government subsidized	17 (17.3)	11 (12.6)	15 (16.9)
Studies results[5]	GPA	6.8 (1.45)	7 (1.25)	6.9 (0.95)
	USE[6]	228 (60.3)		
Faculty of Management				
Gender	Men	29 (29)	27 (30)	29 (30.2)
	Woman	71 (71)	63 (70)	67 (69.8)
Living conditions	In dorm	19 (19)	13 (14.4)	14 (14.6)
	Not in dorm	68 (68)	59 (65.6)	60 (62.5)
	No answer	13 (13)	18 (20)	22 (22.9)
Financial status	Low income	12 (12)	1 (1.1)	
	Below average income	18 (18)	4 (4.5)	
	Average income	51 (51)	54 (60)	
	High income	4 (4)	10 (11.1)	
	No answer	15 (15)	21 (23.3)	
Working status	Working	19 (19)	22 (24.4)	29 (30.2)
	Non-working	68 (68)	50 (55.6)	45 (46.9)
	No answer	13 (13)	18 (20)	22 (22.9)
Smoking behavior	Smoking	1 (1)	8 (8.9)	9 (9.4)
	Non-smoking	85 (85)	64 (71.1)	65 (67.7)
	No answer	14 (14)	18 (20)	22 (22.9)
Tuition	Government subsidized	81 (81)	75 (83.3)	77 (80.2)
	Not government subsidized	19 (19)	15 (16.7)	19 (19.8)
Studies results	GPA	7.1 (0.95)	7.2 (1.05)	6.8 (0.98)
	USE	277 (49)		
Faculty of Economics				
Gender	Men	30 (28.3)	30 (28.3)	29 (28.7)
	Woman	76 (77.7)	76 (77.7)	72 (71.3)
Living conditions	In dorm	16 (15.1)	15 (14.2)	11 (10.9)
	Not in dorm	84 (79.2)	79 (74.5)	57 (56.4)

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[5]Standard deviation in the brackets
[6]Sum of three subjects

	No answer	6 (5.7)	12 (11.3)	33 (32.7)
Financial status	Low income	11 (10.4)	0 (0)	
	Below average income	11 (10.4)	6 (5.7)	
	Average income	56 (52.8)	70 (66)	
	High income	15 (14.1)	13 (12.3)	
	No answer	13 (12.3)	17 (16)	
Working status	Working	18 (17)	22 (20.7)	32 (31.7)
	Non-working	82 (77.4)	71 (67)	37 (36.6)
	No answer	6 (5.6)	13 (12.3)	32 (31.7)
Smoking behavior	Smoking	2 (1.9)	9 (8.5)	6 (5.9)
	Non-smoking	97 (91.5)	84 (79.2)	63 (62.4)
	No answer	7 (6.6)	13 (12.3)	32 (31.7)
Tuition	Government subsidized	80 (75.5)	79 (74.5)	74 (73.3)
	Not government subsidized	26 (24.5)	27 (25.5)	27 (26.7)
Studies results[7]	GPA	7.1 (1.42)	6.6 (1.48)	6.9 (1.12)
	USE	309 (49.3)		
Faculty of Law				
Gender	Men	23 (37.7)	22 (37.9)	25 (42.4)
	Woman	38 (62.3)	36 (62.1)	34 (57.6)
Living conditions	In dorm	7 (11.5)	11 (19)	12 (20.4)
	Not in dorm	38 (62.3)	29 (50)	32 (54.2)
	No answer	16 (26.2)	18 (31)	15 (25.4)
Financial status	Low income	10 (16.4)	0 (0)	
	Below average income	5 (8.2)	4 (6.9)	
	Average income	25 (41)	32 (55.2)	
	High income	3 (4.9)	3 (5.2)	
	No answer	18 (29.5)	19 (32.7)	
Working status	Working	13 (21.3)	9 (15.6)	17 (28.8)
	Non-working	33 (54.1)	30 (51.7)	27 (45.8)
	No answer	15 (24.6)	19 (32.7)	15 (25.4)
Smoking behavior	Smoking	3 (4.9)	2 (3.4)	1 (1.7)
	Non-smoking	41 (67.2)	38 (65.6)	41 (69.5)
	No answer	17 (27.9)	18 (31)	17 (28.8)
Tuition	Government subsidized	53 (86.9)	51 (87.9)	50 (84.7)
	Not government subsidized	8 (13.1)	7 (12.1)	9 (15.3)
Studies results[8]	GPA	7 (1.1)	7.1 (1.26)	6.9 (1.1)
	USE	314 (46)		

Table A2. Estimation results

	Faculty of Business Information Technology	Faculty of Management	Faculty of Economics	Faculty of Law
	coef/se	coef/se	coef/se	coef/se
TheSameGender	0,288***	0,283***	0,408***	0,418***
	(0,040)	(0,039)	(0,041)	(0,052)
TheSameGroup	1,302***	0,989***	1,175***	0,635***
	(0,060)	(0,041)	(0,042)	(0,049)
TheSameWorkingStatus	0,034	0,011	-0,049	-0,001
	(0,068)	(0,058)	(0,067)	(0,080)
Livingindormitory	0,204***	0,368***	0,184***	0,170***
	(0,043)	(0,038)	(0,038)	(0,050)

[7]Standard deviation in the brackets
[8]Standard deviation in the brackets

BothSmoking	0,163***	0,052	0,188***	0,015
	(0,055)	(0,052)	(0,053)	(0,064)
GPA Difference	-0,081***	-0,188***	-0,092***	-0,167***
	(0,019)	(0,026)	(0,017)	(0,029)
HavingCommonFriend	1,352***	1,587***	1,575***	1,915***
	(0,063)	(0,050)	(0,047)	(0,059)
IndegreeDifference	-0,016	-0,002	-0,047***	0,005
	(0,010)	(0,009)	(0,008)	(0,010)
OutdegreeeDifference	-0,051***	-0,023**	-0,053***	-0,026**
	(0,011)	(0,010)	(0,009)	(0,011)
DifferenceofClusteringCoefficient	-1,147***	-1,070***	-1,227***	-1,317***
	(0,120)	(0,115)	(0,112)	(0,176)
Constant	-3,155***	-3,279***	-3,068***	-3,102***
	(0,076)	(0,073)	(0,071)	(0,093)

Note: significance level 0.01 - ***; 0.05 - **; 0.1 - *

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