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TEAM SELECTION AND PERFORMANCE: THE ROLE OF MIGRATORY BACKGROUND AND SOCIAL CLASS

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Abstract

What are the implications of the increasing socio-demographic heterogeneity among student bodies for performance levels? This paper offers some answers from an experiment among undergraduate students, whose performance – individually and in teams of two – with respect to a short test of the course material was related to a set of indicators about their personal background. In line with earlier research, we find students with migratory backgrounds or, almost equivalently, with foreign language backgrounds, to be at a consistent disadvantage in both the individual and the team exercise. The added focus of this paper, however, is on social class, where we find mixed evidence: While the parents' educational achievement positively drives their children's performance in most specification, the question whether a student ever received a (means-tested) student loan never matters. The results may serve as a note of a caution to both higher education institutions and the students themselves to actively promote the integration of students with foreign backgrounds, whereas potential segregation by social class is less of a concern.

Keywords: Social class, migratory background, team selection, team performance.

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1. Introduction

Student bodies, not least at German higher education institutions, are growing increasingly diverse (Middendorff et al., 2017; DSW, 2014; Willich, Buck, Heine, & Sommer, 2011). This development gives cause for serious concern. It may become ever more difficult in large classes to offer teaching styles and contents that will do justice to the needs of most students (Krüger-Basener, Ezcurra Fernandez, & Gößling, 2013; Wielepp, 2013), as it may be assumed that certain of the students' socio-demographic characteristics correlate with their performance in class, so that increasing heterogeneity with respect to these characteristics entails diverging performance levels. We focus in particular on two socio-demographic dimensions: migratory background and 'class' background.

2. Problem Statement

This research project is motived by a number of aspects. The ongoing European refugee crisis has added considerable interest regarding migratory background, with earlier research showing that migratory status can have a significant impact on student performance (Schmucker & Häseler, 2017). The present study aims to validate those prior results. Concerning social status, we are motivated by the debate on class affiliation and ((un)equal) opportunities for social advancement. It was found early on that, certainly in Germany, working-class children are at a decisive disadvantage when it comes to educational achievement, a fact that is reflected in their low admission rates for higher education (Dahrendorf, 1965). This discrepancy, which has received extensive research coverage, still persists today: Admission rates to higher education are 21% versus 74% for children from non-academic and academic families, respectively (Hochschul-Bildungs-Report, 2017; Krempkow, 2017). Despite these controversial results, prior research has mostly investigated the transition between secondary and higher education, while the effects of social inequality on performance *within* higher education has received comparatively little attention – a research gap that this paper addresses.

A second concern that springs from increasing heterogeneity is the question as to how well students with minority backgrounds are integrated in class, or more generally, whether there is a tendency for students with specific backgrounds to 'keep to themselves', i.e. to engage in voluntary segregation and, if so, whether there is any association between segregation and team performance. To investigate this concern, we test whether students choosing a team partner for a class exercise prefer fellow students who are similar in a number of respects.

Finally, the study presents a welcome opportunity to validate earlier results regarding the influence of the members' socio-demographic characteristics on the performance of a team. In particular, we are interested to see whether heterogeneity within the team is detrimental to team performance – another potential concern regarding increasingly diverse student bodies.

3. Research Questions

The research questions are summarised in the following three hypotheses, each of which is later tested by means of regression analysis: *Hypothesis 1* holds that the students' individual performance, which we measure as the number of correct responses to a set of multiple-choice questions relating to the

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course content, depends on their socio-demographic characteristics. More specifically, we expect (H1a) higher performance for students with higher social class backgrounds and (H1b) lower performance for students with foreign migratory backgrounds. The connection between socio-demographic traits and individual student performance has been suggested in a range of prior work, including Schmucker and Häseler (2016), Erdel (2010) and Jirjahn (2007), which we expand on. Regarding H1a, we expect students from families with higher socio-economic standing to perform better because their families' financial support allows them to devote more time to their studies (Middendorff et al., 2017). Well-educated parents with high incomes wish for their offspring to attain at least the same social status, so the children are expected to perform well in their studies (Davis-Kean, 2005). Given their parents' achievements, such students in turn tend to have more faith in their academic self-efficacy (Bandura, 1997; Eccles & Wigfield 2002), i.e. they have internalised their parents' expectations regarding their performance (Buchmann & Kriesi 2013; Mucha, & Decker, 2017). Students from working-class backgrounds, by contrast, will often have greater difficulty adjusting to the academic environment (Bargel & Bargel, 2010).

Next, *hypothesis 2* concerns team formation, saying that voluntary teams will differ in their composition from the types of teams one would expect if students were assigned to each other entirely at random. Specifically, in voluntary teams we expect (H2a) a higher degree of familiarity and (H2b) a greater degree of homogeneity with respect to the members' socio-demographic characteristics. In terms of prior research, Byrne's (1971) 'law of attraction' suggests a tendency to team up with similar individuals as similarity and familiarity are associated with trust and ease of communication. This expectation is confirmed empirically by Goins and Mannix (1999).

Once the teams – in our case, teams of two – have formed, *hypothesis 3* comes into play. It holds (H3a) that voluntary teams perform differently (note the lack of direction) from random teams and (H3b) that team performance depends on the degree of socio-demographic homogeneity within the team. Theoretically, the association between team diversity and performance can be summarised in terms of two opposing arguments. On the one hand, cognitive diversity within a team – the degree to which the members differ regarding their perspectives, expertise, and experiences (Miller et al. 1998) – is hypothesised to enhance team performance because the unique cognitive attributes of the individual members promote creativity, innovation, and problem solving (Hambrinck, Cho, & Chen, 1996; McLeod & Lobel, 1992; Cox & Blake, 1991). By contrast, a negative association between team diversity and performance would be expected under the perspective of social identity theory (Tajfel & Turner, 1986; Tziner, 1985): homogeneous teams work together well because of the shared characteristics of their members; a high degree of similarity promotes team cohesion and thus performance. In terms of empirical research, the present study complements our earlier work (Schmucker & Häseler, 2017) but introduces additional explanatory variables and features better data quality and a refined methodology. In a setting not dissimilar to ours, Chapman, Meuter, Toy, and Wright, (2006) likewise examine the performance differential between randomly and voluntarily assembled teams, but they do not focus on diversity as a potential transmission mechanism. Rienties, Alcott, and Jindal-Snape (2014) also investigate voluntary versus random teams of two students, but with respect to other outcome variables. Rastetter (2006) provides a general overview of the challenges associated with diversity in teams. Since the 1980s, a large number of studies have examined the interconnection between team diversity and

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performance, including Wegge, Roth, Neubach, Schmidt, and Kanfer (2008) and several meta-studies, such as Horwitz/Horwitz (2007), Bell, Villado, Lukasik, Belau, and Briggs, (2011) and Schneid, Isidor, Steinmetz, Kabst, and Weber, (2014). However, most of this literature applies to the corporate rather than to the higher education context. The present study aims to close this gap.

4. Purpose of the Study

This paper describes the experimental set-up and results of an empirical study among undergraduate students with the aim to validate earlier results on a set of research questions pertaining to individual performance, team performance and team formation. A special focus is placed on the extent to which these output variables are affected by the students' socio-demographic backgrounds, in particular their migratory background and their social class as proxied by their student loan status and their parents' educational attainment. The results of the experiment may serve to guide students, lecturers, and other rule-setting institutions in the higher education context in order to improve the learning environment.

5. Research Methods

The experiment was conducted in November 2017 among undergraduate students at the University of Hamburg. An announcement was made in the class "Introduction to Human Resource Management" that in preparation for the next lecture, students were asked to pair up in teams of two for an exercise intended to consolidate their knowledge of the material taught so far and to provide the data basis for a social science experiment with some relevance to the course curriculum. On the day of the actual experiment, those students who indeed arrived as teams ('voluntary teams') we asked to choose a seat on one side of the lecture theatre, whereas those who arrived individually were arbitrarily grouped in teams of two and asked to sit on the other side. Several 'voluntary teams' were asked to relocate to the 'involuntary' side of the room so as to achieve a balance of team types. The teams composed of individual arrivals were then asked to exchange one member each with the neighbouring team on the 'involuntary' side of the room, so that the resulting team composition on this side was approximately random ('random teams'). Finally, each team was given a pair of clicker[1] devices to communicate their answers to the upcoming questions. For each team, we noted the pair of serial numbers, which the clickers transmit with each activation, so we were later able to match the responses of the team members. Usable data were obtained for 92 students forming 46 teams, exactly half of which were of the 'voluntary' and of the 'random' type, respectively.

The experiment proper began with a set of ten questions relating to the material taught previously in the course, and the students were to choose one of five answer choices for each question individually, without consulting with their team partner.[2] The number of correct responses yields our measure of individual performance. Next, each student was asked to submit answers to eight questions regarding their socio-economic background. Then each team surrendered one of their two clickers, using only the

[1] For a brief overview of the use and benefits of clickers (properly: classroom response systems), see e.g. Schmucker/Häseler (2016, 2017).

[2] In each round of ten questions, the time allowed to read the questions and the answer options and to submit the response was 90 seconds.

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remaining one for the rest of the experiment. The teams were then asked to indicate whether they were of the 'voluntary' or of the 'random' type, and how familiar the two members were with each other. Finally, the teams were presented with the same ten questions about the course contents, though this time they were to submit a team decision only after consulting with each other (peer instruction). We thus obtained our indicator of team performance. Figure 1 shows the relative frequency of the number of correct responses to the ten material-related questions across the 92 individuals in the first round and across the 46 teams in the second round.

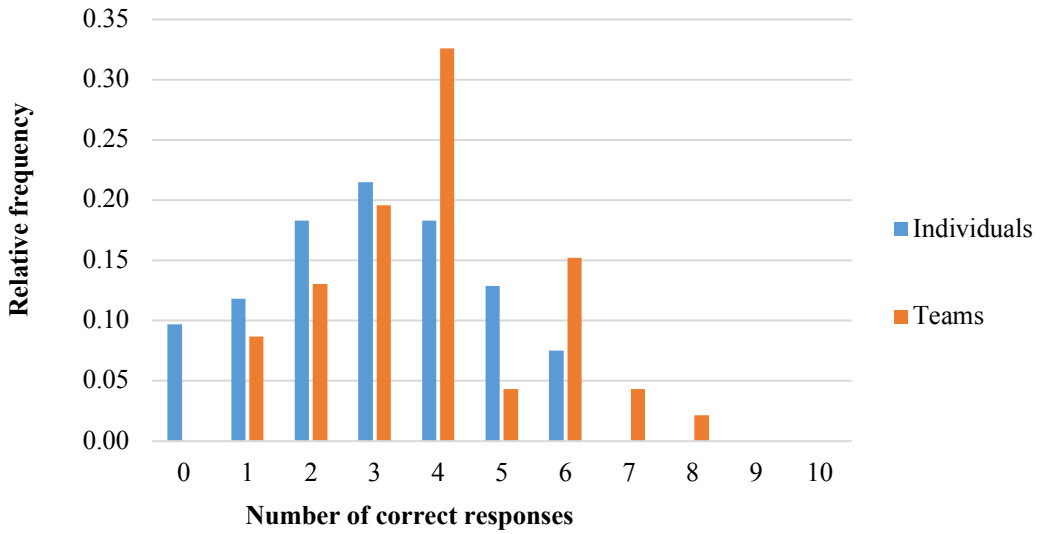

Figure 1. Relative frequency of correct responses for individual respondents and teams

We see that the teams performed somewhat better than the individuals (averages of 3.84 versus 2.99 correct responses).[3] This advantage will be due to a combination of two factors: team work and learning effects (even individuals would have done better in the second round, simply because of the extra opportunity and additional time to reflect upon the answers). Which effect dominates is impossible to tell with the present experimental design. There is, however, some evidence of discussions (team work) actually taking place within the teams: In 5 of the 46 cases, the team score was indeed below the lower of the two individual scores, so there must have been some debate, though not for the better. (In 18 cases, the team score exceeded the higher of the individual scores – the outcome one would hope for.)

Next, for each of the eight socio-demographic questions and the two questions about the nature and familiarity of the team, Table 1 lists the answer options, the frequencies of the responses and the average individual scores (number of correct responses in the first block of ten questions) per response group. The average individual scores across the relevant categories already provide a first impression as to whether a given variable is likely to be significant in explaining variations in individual and team performance in later sections of the paper. For example, students who engage in voluntary work clearly outperform those who do not, whereas whether a participant has ever received a student loan does not appear to have much of an impact on their performance.

[3] Note that plain guesswork would have yielded two correct responses on average, so the questions appear to have been quite demanding (the alternative answers were often quite similar).

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Table 1. Overview of the data collected

Variable	Response Options	Frequency of Response	Average Individual Score
Gender	Male	33	3.27
	Female	57	2.75
Age	< 21 years	27	3.41
	21 to 25 years	48	2.83
	26 to 30 years	9	3.22
	> 30 years	6	2.17
Native language	German only	60	3.4
	Other language only	4	1.75
	Multiple languages, incl. German	23	2.17
	Multiple languages, excl. German	2	2
Migratory background	German	66	3.18
	German, parents immigrated	5	2.4
	German, grandparents immigrated	9	2.22
	Other	8	2.5
Mother's educational attainment	No secondary education completed	5	1.4
	Lowest secondary education	14	2.43
	Intermediate secondary education	23	3.3
	Highest secondary education	22	2.55
	University degree	26	3.77
Father's educational attainment	No secondary education completed	6	1.5
	Lowest secondary education	14	2.57
	Intermediate secondary education	14	3.29
	Highest secondary education	15	3.33
	University degree	40	3.1
Voluntary work	Yes	26	3.69
	No	64	2.69
Student loan	Yes	37	2.92
	No	54	3
Familiarity with team partner	Not at all	23	2.39
	Not much	5	2.8
	Fairly good	13	3.46
	Very good	5	3.6
Team composition	Self-selected	23	3,57
	Random	23	2,17

Table 2 below lists the correlation coefficients among the variables we collected, to the extent that their absolute values exceed 0.1. The column headed "INDIV", the number of correct responses in the first, individual round of questions, generally reflects the picture provided by the average individual scores already reported in Table 1.

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Table 2. Correlation coefficients > 0.1 among the variables

	INDIV	MALE	AGE	FATHER	MOTHER	NLO	MIG
MALE	0.146						
AGE							
FATHER	0.218	0.255	-0.159				
MOTHER	0.194	0.228		0.519			
NLO[4]	-0.39	0.151		-0.335	-0.183		
MIG	-0.222		0.205	-0.249		0.682	
LOAN		-0.18		-0.306	-0.159	0.228	0.137
VOL	0.364	0.138		0.171		-0.205	-0.168

Beyond that, the table primarily serves as a plausibility check of the data, with many of the observed relationships among the variables corresponding to prior expectations.[5] For example:

- A student is more likely to receive a loan if his or her parents have below-average educational attainment and have a foreign language or migratory background – both of which are proxies for low family income.
- A student's parents tend to have similar levels of educational achievement.
- A student is more likely to engage in voluntary work the higher their father's educational attainment, in line with prior findings for example by Kausmann, Simonson, and Hameister, (2017).
- Language background and migratory background are highly correlated (almost per definition).

In each of the next four sections, we present the most salient findings pertaining to individual performance, team selection and team performance, respectively, and relate them to the applicable hypotheses and to our expectations as derived from prior theoretical and empirical research.

6. Findings

6.1. Determinants of Individual Performance

We now turn to the question as to whether and how the students' socio-demographic characteristics determine their individual performance in the first round of questions. In each of the regression models reported in Table 3, the number of correct responses to the first ten curricular questions constitutes the dependent variable, and since that dependent variable is thus of a count (integer) nature, Poisson regression is used throughout. Model 1.1 uses all the information that the students originally provided. No response was recorded for about three percent of the data points with respect to the socio-demographic questions. These non-responses appear to have happened inadvertently – most likely the clicker button was not pressed hard enough or the device was not aimed well enough at the receiver. This we infer from the fact that the non-responses do not exhibit any pattern; they are not clustered around any

[4] 'NLO' stands for 'native language = other than German only'.

[5] Note that unless stated otherwise, the authors do not intend to pass any judgement on the social desirability of the findings.

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of the survey questions or individual respondents. So for the purpose of Model 1.1, whenever a student failed to respond to one or more socio-demographic questions, this person was dropped from the sample (pairwise deletion), resulting in only 75 observations. The table shows that significant impacts on performance were found only for a native language background other than German only (negative) and for voluntary work (positive).

For the dataset underlying Model 1.2, the missing socio-demographic values were imputed: A series of models was built to predict the missing data points for individual students and variables using whatever information was available from the other students (imputation by regression). Being quite similar to Model 1.1, the regression results confirm the viability of the imputation: The imputation has reduced all standard errors, the coefficient estimates are quite similar, and the signs are identical with one exception. Thanks to the more precise estimates, we have additional significant performance effects for the mother's educational attainment (positive) and age (negative). Models 1.3 and 1.4 are again based on the original and the imputed sample, respectively, but have been reduced to include only those indicators that yield significant coefficient estimates. We find the previous effects of voluntary work and non-German native language confirmed, plus the effect of the mother's education in the case of the imputed dataset.

In absolute terms, the effects are generally not negligible. For example, students who engage in voluntary work fared better in the test by more than a quarter of a point – roughly 10% of the average score. The finding of voluntary work as a driver of individual performance is interesting as it complements our earlier research (Schmucker & Häseler, 2016, 2017). Regarding the underlying causal factor we may only speculate, given the wide range of potential reasons to engage in voluntary work (Clary & Snyder, 1999; Clary et al. 1998; Hustinx & Lammertyn, 2003; Willems & Dury, 2017). Clary et al. (1998) for example show that careers concerns play a strong role in that decision – voluntary work is accepted because it looks good in a CV. This might suggest that the correlation between performance and voluntary work is in fact spurious, as both are driven by an unobserved third factor: the participants' degree of ambition in terms of future employment.

Table 3. Determinants of individual performance

Variable	Model 1.1	Model 1.2	Model 1.3	Model 1.4
MALE	0.066 (0.143)	0.078 (0.127)		
AGE	-0.074 (0.09)	-0.136* (0.079)		
FATHER	0.01 (0.069)	-0.021 (0.062)		
MOTHER	0.065 (0.07)	0.124** (0.061)		0.117** (0.053)
NLO	-0.567** (0.232)	-0.584** (0.229)	-0.421*** (0.15)	-0.376** (0.149)
MIG	0.244 (0.24)	0.223 (0.236)		
LOAN	0.192	0.154		

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	(0.147)	(0.136)		
VOL	0.342** (0.139)	0.28** (0.13)	0.314** (0.13)	0.252** (0.128)
Observations	75	92	87	92
Imputation of missing data	no	yes	no	yes
R^2	0.278	0.275	0.185	0.206

Poisson regression. Constant term not reported. Standard errors in parentheses. (*) statistically significant at the 10% level, (**) at the 5% level and (***) at the 1% level.

6.2. Team Selection

Do students tend to choose team partners who are similar to them, or in other words, is the degree of socio-demographic diversity lower in 'voluntary' teams? The answers, to the extent that they can be extracted from our sample, are contained in Table 4.[6] Here we see, for each of the socio-demographic variables, the relevant measure of diversity, which is either the share of teams in which both members are equal with respect to a certain trait (dummy variables) or the average difference between the team members' values (ordinal variables). The table shows how much the degree of diversity differs between the actual voluntary teams and the hypothetical teams that would result if the participants were paired up entirely at random ('expected value'). Evidently, a significant tendency for students to select similar team partners exists only with respect to native language and migratory status. Indeed, for the former variable, this tendency is quite pronounced: There was only one team in which one member had a German-only native language background while the other one did not. In sum, we see a marked tendency among students of this class to select team mates who are similar to them in terms of language and geographic background, but not in terms of social class or any of the other characteristics we captured.

Table 4. Degrees of diversity in self-selected teams vs. hypothetical random teams

Variable	Measure of Diversity	Voluntary Teams	Expected Value	Difference[7]
MALE	Share of same-sex teams	65.22%	53.99%	t = 1.122
AGE	Average age difference between team members (categories)	0.609	0.833	t = 1.342
NLO	Share of teams with equal language status	95.65%	56.83%	t = 4.008***
MIG	Share of teams with equal migratory status	82.61%	62.5%	t = 2.227**
PARENTS	Average difference between the team members' parental education scores	2.217	2.484	t = 0.105
VOL	Share of teams with equal voluntary work status	73.91%	59.45%	t = 1.54
LOAN	Share of teams with equal student loan status	65.22%	51.91%	t = 1.301

[6] In this and all subsequent analyses, we use only the imputed sample, and the values for FATHER and MOTHER are added to form the variable PARENTS.

[7] In each case, the relevant t-statistic for the difference in means or proportions, as applicable, is shown. (**) and (***) indicate that the differences are significant at the 5% level and the 1% level, respectively (two-tailed test).

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6.3. Determinants of Team Performance

In a final set of analyses, we examine team performance, i.e. the number of correct responses that the teams submitted to the second set of content questions, and its relationship with the information we have on the teams. The best prediction of team performance on the basis of a single indicator, judging by the coefficient of determination (R^2), is achieved by the sum of the team members' individual scores (Model 2.1). This finding may not be too surprising considering that the teams faced the very same questions as their individual members in the first round. Perhaps more interestingly, we find that the sum of the individual scores for each question is a better predictor of team performance than the maximum of the two figures (results not reported in the table 5). This suggests that the "weaker" of the two members does make a positive contribution to the team's performance. This impression is also confirmed if we regress (again not reported) team performance on both the greater and the lesser individual performance per question. The latter variable still has a positive influence that borders on statistical significance, so holding the stronger team member's performance constant, the weaker member still contributes to team performance.

Table 5. Determinants of team performance

Variable	Model 2.1	Model 2.2	Model 2.3	Model 2.4	Model 2.5
INDIVIUAL	0.114*** (0.027)				
MALE		0.028 (0.113)		-0.007 (0.184)	
AGE		-0.071 (0.063)		-0.128 (0.117)	
PARENTS		0.029 (0.029)		-0.036 (0.045)	
NLO		-0.308* (0.186)	-0.188* (0.101)	-0.01 (0.259)	
MIG		0.298 (0.213)		-0.329 (0.223)	-0.308* (0.174)
LOAN		0.024 (0.105)		-0.015 (0.168)	
VOL		0.12 (0.112)		0.11 (0.187)	
RAND		-0.183 (0.284)		-0.026 (0.292)	
FAM		-0.113 (0.128)		-0.118 (0.129)	-0.078 (0.071)
Variable type	Sum	Sum	Sum	Difference	Difference
Observations	46	46	46	46	46
Imputation of missing data	Yes	Yes	Yes	Yes	Yes
R^2	0.519	0.282	0.103	0.176	0.099

Poisson regression. Constant term not reported. Standard errors in parentheses. (*) statistically significant at the 10% level, (**) at the 5% level and (***) at the 1% level.

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In Model 2.2, we leave aside the prior individual performance to instead see how well team performance can be explained by the team's type (random versus voluntary) and the member's degree of familiarity, as well as the sums of all the individual socio-demographic characteristics. So for example the variable MALE in this context can assume the values 0 (an all-female team), 1 (mixed team) and 2 (all-male). We find that only the degree to which the team members have a non-German only language background has a (weakly and negatively) significant impact on team performance. Thus, though the model's overall explanatory power is quite similar to that of the corresponding model for individual performance, it yields fewer significant coefficient estimates. Reducing the specification down to those indicators that are associated with a significant effect leaves only NLO (Model 2.3).

In Models 2.4 and 2.5, instead of the sums of the individual traits, we use the differences: In the case of a dummy variable, say LOAN, the indicator will take the value of 1 if one team member has enjoyed a student loan while the other one has not, and 0 if they share the same loan status. For ordinal variables (e.g. AGE), the respective indicator equals the difference between the team members' individual values. In a nutshell: These two models try to capture any effect of *diversity or heterogeneity within the teams* on their performance. The results are modest: Model 2.4 fails to produce any significant estimates while the reduced specification, Model 2.5, yields only a weakly significant, negative effect of a difference in migratory backgrounds.[8]

Throughout all specifications, neither a team's type nor its degree of familiarity exhibits a significant effect. However, the consistently negative sign would suggest that students are best advised to stay clear of their closest friends when selecting a team partner.

6.4. Discussion of the Results

Pertaining to hypothesis 1, we found a negative significant impact on individual performance for students whose native language background is non-German, confirming the results of Schmucker & Häseler (2016). The straightforward explanation for this would be that such students simply had a harder time following the course material taught in German and therefore answering the test questions, especially given the time pressure. A more in-depth analysis (e.g. using the results of a language test as an additional explanatory variable) could reveal whether a non-German native language background indeed translates into language barriers to answering the test questions or whether, instead, such a background is merely indicative of other (e.g. cultural) factors that impede performance. However, such an assessment is not possible with the data at hand.

Individual performance is also significantly driven by the students' voluntary work and higher educational attainment of a student's mother (a proxy for social class). It seems likely that these two factors actually exert a joint influence on performance. A number of studies have shown a positive association between parental education levels and the children's voluntary work (cf. e.g. Kausmann, Simonson, & Hameister, 2017), and this relationship is also borne out by our data – the two variables are positively correlated, though not significantly so. Parents with higher education degrees tend to impress upon their children the importance not only of education but also of social commitment (Bekkers 2007).

[8] FAM is included in Model 2.5 because without it, the coefficient on MIG would lose its significance.

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Thus, social class as proxied by parental education drives individual performance both directly and indirectly, via voluntary work. The fact that it is the mothers' rather than the fathers' educational achievement that has the greater influence on their children's performance is in accordance with prior research: Halle, Kurtz-Costes, & Mahoney, (1997), analyzing a sample of low-income minority families, discovered that mothers with higher education had higher expectations for their children's academic achievements and that these expectations were linked to the subsequent academic achievement of their children. The authors found that these more positive expectations and beliefs predicted higher degrees of achievement-fostering behaviour by mothers in the home, together with more positive perceptions of academic achievements by the children. In addition, Corwyn and Bradley (2002) identified that mothers' educational attainment had the most consistent direct impact on cognitive and behavioral outcomes of children. The finding also accords with common sense: In most families and cultures, the mothers take the lead role in raising their children and thus have more opportunity to pass on their values and act as a role model.

While our first indicator of social class, parental education, thus shows an impact on student performance, the second one does not: Family income, as proxied here by (means-tested) student loan status, fails to produce a significant effect on individual performance in any of the estimates. This is not surprising in light of the findings by Davis-Kean (2005) and Halle et al. (1997), who find that low family income need not constrain academic development. As we saw in Table 2, there is not even any notable correlation between student loan status and individual performance in the bivariate analysis, i.e. if we do not control for other potentially relevant factors, such as parental education. This may be interpreted as an encouraging result: It appears that money (or rather the lack thereof) is no impediment to academic achievement. However, note at this point that we are only looking at the small part of the population who made it into a university in the first place.

Regarding hypothesis 2, a significant tendency for students to select similar team partners was found only with respect to native language and migratory status. For the former variable, this tendency is quite pronounced: There was only one team in which one member had a German-only native language background while the other one did not. Not surprisingly, the degree of familiarity is far higher in voluntary teams. Our finding of language-based team formation relates to Goins and Mannix (1999), who present evidence of team selection based on ethnicity. This is a cause of concern as, in an increasingly ethnically diverse environment, it may lead to segregation. On the other hand, particularly gender and age do not appear to be relevant criteria in the choice of partners. To a certain extent, this result contradicts theory, especially the 'laws of attraction' (Byrne, 1971).

Hypothesis 3 concerns team performance, which we find depends neither on the individual members' socio-demographic characteristics (though it strongly depends on their individual performance), nor on heterogeneity within the team, nor on a team's type (voluntary versus random). So team performance is not driven by intra-team diversity. Particularly, diversity with respect to gender and age is unrelated to performance, as also found by Schneid et al. (2014) and Horwitz & Horwitz (2007). In addition, team performance does not depend on the degree of familiarity among the team members. However, the consistently negative sign should encourage students not to go for the convenient choice

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when selecting a team partner. Concretely, students should resist the temptation to select team partners they are well familiar with.

7. Conclusion

Student bodies at most higher education institutions are growing increasingly diverse in terms of personal backgrounds. Does this imply that classes also become more difficult to teach because the students' performance levels are growing more diverse? That would be the case only if a systematic relationship existed between the students' personal characteristics and their academic performance. While a large body of literature exists regarding the association (if any) between personal attributes and performance, most of it relates to the working environment, with relatively little attention devoted so far to the academic sphere.

The present study expands upon the authors' previous experimental work with undergraduate students at the University of Hamburg, though this time with a focus on social status and with a number of methodological improvements. 92 students enrolled in the class "Introduction to Human Resource Management" were asked to pair up in teams of two, in exactly half of which the choice of partner was voluntary while the other half were assembled in a quasi-random fashion. Personal data about the students was collected by means of 'clicker' devices. To capture the social class dimension, we asked whether the students received a federal student loan, which is only granted to students from low-income families, and what the highest educational achievement of their mother and father was. For a measure of academic performance, the students were given a set of ten multiple-choice questions on the course, which were to be answered individually in a first round and then again in collaboration with the team partner (peer instruction) in a second round.

While we generally found little evidence of *team performance* depending on either the members' personal characteristics (besides the individual performance scores in the first round) or the degree of diversity with respect to those characteristics within the team, a strong association was found between some of the personal attributes and *individual performance*. Specifically, in accordance with our earlier research, we found that performance tends to be lower for students who have a migratory background or, almost equivalently, whose native language is not German (only). Regarding social class, the findings suggest that the students' performance is to some degree inherited from their parents, but the crucial factor seems to be parental education, not family income. For interpretation, the previous section refers to a range of relevant literature. Finally, the dataset was also used to determine whether the students tend to select team partners who are similar to them. This was confirmed with respect to language and regional background but not with respect to our two proxies of social class. In sum, the findings suggest that the integration of students with foreign backgrounds remains an important task for higher education institutions and their students alike.

In future research, we would like to go into more detail regarding the students' backgrounds. While additional indicators of social class could be implemented, it would also be worth investigating what really drives the negative performance impact of foreign language backgrounds. Is it really language skills as such that matter or are some other factors at play, such as perhaps systematic variations in social capital? To exclude the influence of language itself, a short grammar or vocabulary test could for example be incorporated in the experiment.

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