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Wissenschaft weltoffen

Facts and Figures on the International Nature of
Studies and Research in Germany and Worldwidewissenschaft-
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(see notes on p. 4)

2022

DZHW German Centre for
Higher Education Research and Science Studies

This is an excerpt from the publication

“Wissenschaft weltoffen 2022”

Since 2001, the DAAD has been analysing data on the internationalisation of studies, research and higher education from Germany as well as from particularly relevant countries and regions such as the USA, the United Kingdom or Asia. The current edition presents the most important results and graphics.

These include figures on international students in Germany, data on mobility behaviour, an overview of students' countries of origin and host countries as well as developments in the field of doctorates. Special data analyses shed light on the status quo and trends at universities and research institutes during the Covid-19 pandemic.

The study integrates international data from OECD and UNESCO as well as national data from the Federal Statistical Office in Germany. In combination with other indicators, it provides a valid basis for long-term analyses.

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A guest contribution by Julia Zimmermann, Susanne Falk, Theresa Thies and Hüseyin Hilmi Yildirim



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A sense of university belonging is the term given to students' (subjectively) perceived cohesion in and connection to the university community.¹ A key objective of the culture of welcome at German universities is to encourage this sense of belonging to their university among international students. To date, although a sense of university belonging has been established as a crucial factor for students' subjective well-being and academic success,² very little is known about the interaction of these factors among international students in Germany. Therefore, this guest commentary will first focus on the question of how international students in Germany develop this sense of university belonging during the first four semesters and whether any differences can be observed with regard to the type of degree studied, the gender of the students and their subject groups. Then it will explore the correlations between the sense of university belonging, subjective well-being and academic success of international students.

Data basis: the national panel survey of international students in Germany

The results presented here are those of the joint research project on "SeSaBa – Success and Withdrawal of International Students in Germany" in both bachelor's and master's programmes. The joint research project SeSaBa was carried out between April 2017 and July 2021 by the German Academic Exchange Service (DAAD), the Bavarian State Institute for Higher Education Research and Planning (IHF) and the FernUniversität in Hagen in the funding project "Academic success

and dropout phenomena" of the Federal Ministry of Education and Research (BMBF).

The analysis is based on a national panel survey³ of international students with the intention of obtaining a degree, who began their bachelor's or master's programme at a university in Germany in the 2017/18 winter semester (see Figure BS1.1). Focal points of the analysis included the study entry phase, the study situation and the determinants of academic success.⁴

To document their sense of university belonging, each person was asked to rate the following three statements: "I feel a sense of belonging to my university", "I am happy to be at my university" and "I see myself as part of my university".⁵ The statements were to be rated on a scale of 1 (Strongly disagree) to 5 (Strongly agree). The arithmetic mean of the three assessments was calculated for each individual. Then calculations were carried out as to whether this mean showed a low (scores from 1 to 2.5), medium (scores from 2.5 to 3.5) or strong (scores from 3.5 to 5) sense of belonging to a university. The following section traces the development of the share of students with a strong sense of belonging over the first four semesters. Only scores for students who took part in the survey in all four semesters are taken into account. The fifth and sixth semesters, during which the students were also surveyed, are omitted on account of the first degrees obtained in master's programmes, the significantly lower number of participants and the beginning of the pandemic, plus the resulting reduced comparability with earlier semesters.

BS1.1 Survey frequency and response rate of the panel survey³ in the SeSaBa project

Type of degree	First academic year		Second academic year		Third academic year	
	WS 2017/2018	SS 2018	WS 2018/2019	SS 2019	WS 2019/2020	SS 2020
	1st survey	2nd survey	3rd survey	4th survey	5th survey	6th survey
Bachelor's	1,544	1,248	883	905	706	736
Master's	2,284	2,022	1,544	1,587	1,125	997
All respondents	3,828	3,270	2,427	2,492	1,831	1,733

Source: SeSaBa project

High sense of university belonging at the start of the programme

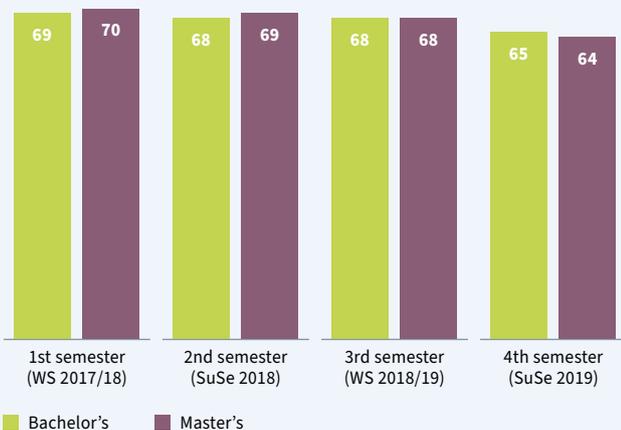
Figure BS1.2 shows the percentages for a strong sense of university belonging among bachelor's and master's students in the first four semesters. At the end of the first semester, 69% of bachelor's and 70% of master's students indicate a marked allegiance. Over the course of their studies, the share of those reporting a strong sense of university belonging drops slightly. Findings on other aspects of adjusting to a new (cultural) environment suggest that students may experience a greater level of drive in the first few weeks after arriving at the university. This phenomenon should be investigated further by carrying out surveys

at shorter intervals. By the first survey at the end of the first semester, however, the share of students with a strong sense of university belonging had evidently plateaued at a more or less stable level.

Slight differences in their allegiance can be observed between women and men (see Figure BS1.3). 72% of male students, compared to just 68% of female students, report a strong sense of university belonging during the first semester. Over time, the proportion of individuals reporting a strong sense of belonging drops for both men and women.

With regard to subject groups (Figure BS1.4), the differences between the humanities, law, economics and social sciences, and mathematics,

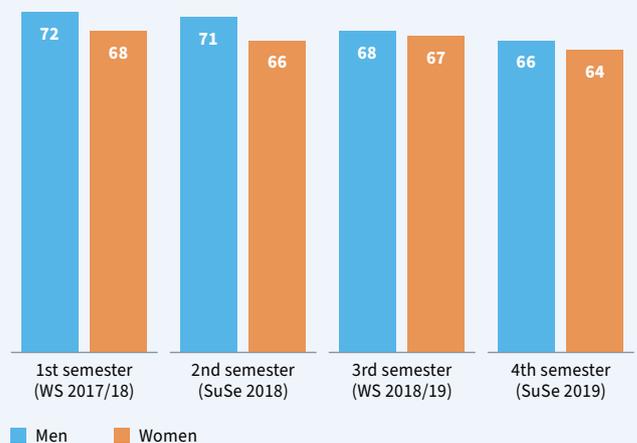
BS1.2 International students with a high sense of university belonging in the first four university semesters, by type of degree



Proportion of all bachelor's and master's students surveyed in %

Source: SeSaBa project, national panel survey

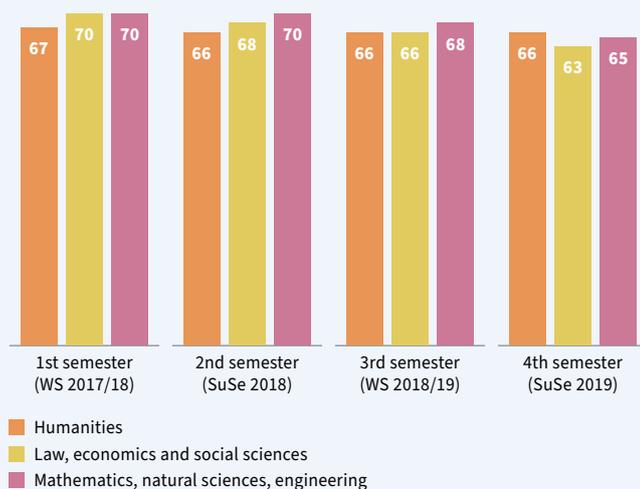
BS1.3 International students with a high sense of university belonging in the first four university semesters, by gender



Proportion of all men and women surveyed in %

Source: SeSaBa project, national panel survey

BS1.4 International students with a high sense of university belonging in the first four university semesters, by subject group



Proportion of all students surveyed in the respective subject groups in %
 Source: SeSaBa project, national panel survey

natural sciences and engineering (STEM) are negligible. Compared to humanities students, students of law, economics and social sciences, and STEM subjects, are somewhat more likely to indicate a strong sense of university belonging during their first semester. The share of those with high levels of agreement in all three subject groups subsequently declines over the course of their studies, with the greatest decrease between the first and fourth semesters – seven percentage points – found in law, economics and social sciences.

International students' sense of university belonging, study experience and academic success

To close the research gap, the project reflected on the correlations between international students' sense of university belonging, subjective well-being, selected aspects of their study satisfaction and intention to drop out of their studies. The focus was on the study entry phase, in other words, the first two semesters of their study programme. The models used to analyse the data take account both of cross-sectional correlations (i.e. correlations between the attributes of the respondents indicated at the same time in the survey, cf. paths a and b in Figure BS1.5) and of longitudinal correlations (i.e. those between attributes of respondents at different points in time, cf. paths c to f in Figure BS1.5). For example, Figure BS1.5 shows the cross-sectional and longitudinal correlations found between a sense of university belonging and subjective well-being.

The sample group for this analysis was 3,837 international students from the SeSaBa dataset who had participated in at least one of the first two survey waves (during the first and second semesters). Given the different levels of university belonging among male and female students previously identified (see sections above), potential control variables relating to the respondent's gender, type of degree, region of origin, age, previous residence in Germany and self-assessed, study-related language skills were included in the analyses and their potential effects monitored. Therefore, the reported longitudinal correlations between sense of university belonging and well-being, study satisfaction and dropout intention are unaffected by these attributes.⁶

Their subjective well-being was assessed according to the WHO-5 Index.⁷ This is an internationally established screening instrument with five statements that respondents must rate on a scale of 1 (At no time) to 5 (All of the time).⁸ The results show positive correlations between international students' sense of university belonging and their subjective well-being at both points in time, in other words a stronger sense of belonging was associated with greater well-being (paths a and b in Figure BS1.5). Furthermore, the analysis also found a significant longitudinal correlation between students' sense of university belonging in the first semester and their subjective well-being in the second semester (path e in Figure BS1.5). This means that students with a stronger sense of belonging to the university at the end of the first semester benefited from it in the form of enhanced well-being at the close of the second semester. Accordingly, the feeling of being part of a university community and belonging to the university may be considered conducive to the subjective well-being and mental health of international students. This finding is consistent with psychological theories that regard a sense of belonging as a basic human need, the fulfilment of which is a prerequisite for our well-being.⁹ There is also a significant longitudinal correlation with a reverse effect, in other words, enhanced well-being at the end of the first semester coincided with a stronger sense of belonging at the close of the second semester (path f in Figure BS1.5). One possible explanation could be that students with enhanced well-being have greater (psychological) resources, enabling them to initiate and maintain social contacts or join student groups, thereby heightening their sense of university belonging.¹⁰ Nonetheless, other mechanisms are also conceivable, such as the correlation between a more positive self-perception and evaluation of one's own abilities and enhanced well-being.

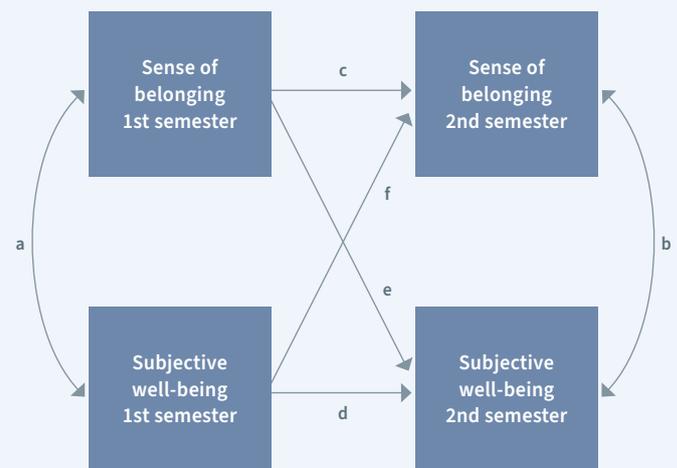
Sense of university belonging and academic success of international students in Germany

In parallel to the analysis of the sense of university belonging and subjective well-being, research was carried out into the correlation between a sense of belonging and various aspects of study satisfaction¹¹ (course content, studying conditions, workload) and the dropout intentions of international students.

For the most part, consistent results were obtained with regard to the three aspects of study satisfaction. In all three cases, positive cross-sectional correlations between the sense of university belonging and the different aspects of study satisfaction can be observed at both points in time; in other words, a stronger sense of belonging was associated with higher study satisfaction at the end of the first (path a in Figure BS1.5) and at the end of the second semester (path b in Figure BS1.5). In addition, over the course of two semesters – along similar lines as subjective well-being – positive correlations became apparent in both directions (paths e and f in Figure BS1.5), that is, the sense of university belonging and study satisfaction had a mutual impact. It was only between the sense of university belonging in the first semester and the satisfaction with the workload in the second semester that no correlation of statistical relevance was found.

As expected, negative correlations arise with regard to the dropout intentions of international students. This means that a stronger sense of university belonging was associated with lower intentions of dropping out of studies at both points in time (paths a and b in Figure BS1.5). The same observation is found over the course of studies. Consequently, students who felt a stronger allegiance to their university at the end of the first semester were less likely to intend to drop out at the end of the second semester, while minimal dropout intentions when commencing the programme were associated with a stronger sense of belonging over the course of the studies. On the one hand, these correlations could be explained by the fact that students with a stronger sense of belonging feel appreciated in the university environment and are thus more determined to complete their degree at

BS1.5 Model of the analysis of the cross-sectional and longitudinal correlations between a sense of university belonging and subjective well-being



Source: SeSaBa project

that university. On the other hand, it may be assumed that students are more likely to cultivate social contacts and interact with other students and teachers if they intend to continue their degree (at this university).

* Footnotes

- 1 See Locks et al. (2008).
- 2 See e.g. Glass/Westmont (2014).
- 3 A panel survey is a longitudinal study of the same group of respondents.
- 4 See also the project website and the list of publications: <https://www.daad.de/en/the-daad/what-we-do/education-expertise-services/sesaba/>.
- 5 This refers to the “sense of belonging” scale by Bollen/Hoyle (1990).
- 6 For the sake of brevity, the following section presents selected findings only. Please refer to the original publication by Yildirim et al. for a complete overview (2021).
- 7 See also World Health Organization (1998).
- 8 Respondents were asked to rate the following statements: Over the past two weeks, I have felt cheerful and in good spirits; Over the past two weeks, I have felt calm and relaxed; Over the past two weeks, I have felt active and vigorous; Over the past two weeks, I have woken up feeling fresh and rested; Over the past two weeks, my daily life has been filled with things that interest me.
- 9 See Baumeister/Leary (1995), Ryan/Deci (2000).
- 10 See also the Broaden-and-Build Theory of Positive Emotions described by Fredrickson (2001).
- 11 See Westermann et al. (1996).

Summary and outlook

In principle, the findings confirm the significance of the sense of university belonging for the subjective well-being and academic success of international students in Germany. Therefore, when developing support services for international students at universities, it would seem logical to focus first and foremost on initiatives that specifically aim to encourage the social inclusion of international students at the university, showing them that they are members of this community and are valued as such. The numerous options include buddy programmes as well as sporting and cultural activities, which are designed to encourage communication between international and domestic students. Events and initiatives that facilitate positive contact between students and teachers may also be instrumental in establishing students’ sense of belonging.