SELECTIVE EFFECTIVENESS OF THE BINDING STUDY ADVICE AT THE FACULTY OF VETERINARY MEDICINE, UTRECHT

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ABSTRACT

TITEL: SELECTIEF EFFECT VAN HET BINDEND STUDIE ADVIES

PROBLEEMSTELLING/ACHTERGROND Sinds 2006 wordt het Bindend Studie Advies (BSA) gebruikt op de Faculteit Diergeneeskunde, Utrecht, als middel voor selectie van studenten na hun eerste studiejaar. Een doel van deze selectie is het uitselecteren van studenten met een minder goed toekomstperspectief, in de hoop dat er een gemotiveerde, sterke groep studenten overblijft. Er zijn weinig studies gepubliceerd die onderzoeken of het BSA ook daadwerkelijk dit doel bereikt. Dit onderzoek poogt de selectieve effectiviteit van het BSA op de Faculteit Diergeneeskunde te evalueren, met als onderzoeksvraag:

Heeft het BSA een positief selectief effect dat lijdt tot betere studievoortgang en betere behaalde cijfers?

Hierbij werd ook onderzocht of de hoogte van de BSA-norm (het aantal EC waarop het BSA gebaseerd wordt) invloed heeft. Daarnaast werd geëvalueerd hoe studenten die een Aangehouden BSA ontvangen, bedoeld voor studenten die de BSA-norm niet halen maar hier een goede reden voor kunnen aangeven, presteren tijdens de rest van hun studie.

METHODE/OPZET Examenresultaten en BSA van cohorten 2005-2012 zijn verzameld uit OSIRIS. Studenten werden vergeleken op basis van 3 groeperingen:
(1) Vallend onder BSA-regeling (BSA^x) of zonder BSA (NoBSA),
(2) Gebaseerd op BSA-norm (BSA^{30}, $BSA^{37,5}$, BSA^{45}),
(3) Gebaseerd op ontvangen BSA, (Aangehouden BSA en Positief BSA).
Studievoortgang werd geëvalueerd aan de hand van het aantal ECs behaald in jaar 1 en 2, aantal maanden benodigd voor afronding doctoraal of bachelor, behalen propedeuse in jaar 1 en uitvalpercentages na start van jaar 2. Uit OSIRIS verkregen EC-gewogen gemiddelden wreder vergeleken om gemiddelde cijfers te beoordelen.

RESULTATEN In onderstaande tabel is een overzicht gepresenteerd van de onderzoeksresultaten.

	ECs behaald in jaar 1	ECs behaald in jaar 2	Maanden nodig voor afronding	Propedeuse in jaar 1 behaald	Uitval na start jaar 2	EC gewogen gemiddelde
NoBSA	45,874	47,599	39,8342	42,6%	11,9%	6,8188
BSAx	48,426	53,990	41,1937	50,0%	4,1%	6,9091
BSA30	47,787	53,758	41,3240	50,0%	4,2%	6,9117
BSA37,5	48,767	54,430	40,7072	47,5%	3,5%	6,8936
BSA45	50,234	/////////	/////////	54,9%	/////////	6,9305
Totaal	48,103	53,040	40,9763	49,1%	5,4%	6,8981
Aangehouden	/////////	38,159	59,6457	/////////	30,9%	6,5688
Positief	/////////	55,143	40,3956	/////////	2,0%	6,9237

DISCUSSIE Het onderzoek laat zien dat het BSA positieve selectieve effecten heeft op studievoortgang. Opvallend is dat afronding van het programma niet bespoedigd wordt door het BSA. Door verschillende factoren kan dit aspect hier mogelijk niet goed belicht zijn. Het BSA lijkt geen invloed te hebben op de hoogte van behaalde cijfers. Studenten die een Aangehouden BSA ontvangen presteren minder dan studenten die een Positief BSA ontvangen.

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GLOSSARY

Arrested BSA	*Dutch: Aangehouden BSA.* Binding study advice received when achieving less ECs than required by the BSA-norm, but able to present valid personal or medical reasons for this, as judged by the Board of Examiners. This advice allows the student to enter the second year, but in this second year they will again be subjected to the BSA-ruling.
Binding study advice (BSA)	Study advice handed out after the first year, based on a set number of European Credits to be achieved by a student. Based on this advice the student can be prohibited from entering the second year of the program.
BSA-norm	The limit of European Credits students have to achieve in order to receive a Positive binding study advice.
C2001	Curriculum of Veterinary Medicine at the Faculty of veterinary Medicine, Utrecht University, started in 2001, last starting year 2006.
European Credit Transfer and Accumulation System (ECTS)	European Credit Transfer and Accumulation System (ECTS) is a standard for comparing the study attainment and performance of students of higher education across the European Union and other collaborating European countries.
European Credits (EC)	Used in the European Credit Transfer and Accumulation System as points given to students after completing a program course.
Negative BSA	Binding study advice received when achieving less ECs than required by the BSA-norm, this advice prohibits the student from entering the second year.
OSIRIS	Study information and registration system used by Utrecht University.
Positive BSA	Binding study advice received when achieving equal or more ECs than required by the BSA-norm, this advice allows the student to continue his study program
Propedeuse	The first year of a study program, usually consisting of courses totalling 60 European Credits.
Restarters	*Dutch: Herstarters.* Students interrupting their study program before February, and restarting in the next curricular year.

INTRODUCTION

Different tools for the selection of students have been developed over the years. Some, like matching, decentralized selection* and (weighted) lottery are used as a pre-entrance selective tool. But to help students make the right choice, the first year of study program also plays a significant role. Students can get insight in their study program, and if a study was found to be unsuitable, leaving it before starting the second year will prevent loss of time and money, for both student and educational institute. Student achievements in the first year can also be used by the institute to advice or select students.

One of the tools developed for selection, the binding study advice (BSA), is now widely used in the Netherlands to select students after the first year of their study program, including at my own Faculty; the Faculty of Veterinary Medicine, Utrecht (FVMU). In this report I attempt to evaluate the selective effectiveness of the binding study advice at the Faculty of Veterinary Medicine, Utrecht.

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* The Faculty of Veterinary Medicine, Utrecht University uses decentralized selection to select part of the students entering the first year of the educational program. Part of the students positions are reserved for students who want to specialize in the fields of food animals and/or veterinary public health, and for these positions students are selected on non-cognitive criteria.[3] Further explanation, including a numerical overview on the efficiency of the decentralized selection can be found in Appendix 1.

The binding study advice (BSA)

One of the instruments founded to strengthen the selective function of the first year is the binding study advice (BSA)[1,4], which has been used at universities in the Netherlands since 1997.[7] The BSA is an advice, based on a set lower limit of European Credits (ECs) students have to achieve during their first year. This set limit, referred to as the 'BSA-norm', can differ between study programs based on the distribution of ECs over the courses. Students that manage to achieve the BSA-norm will receive a Positive BSA, which allows them to continue their study program without any further EC requirements during following years. Students failing to achieve the BSA-norm can receive a Negative BSA, which prohibits the student from entering the next year. Also, these students are not allowed to restart the same study program within the next 4 years.

The BSA doesn't always follow this black-and white approach. Students that have personal or medical reasons for not making the BSA-norm, as to be judged by the Board of Examiners, can be excused. Their BSA will be set as *Arrested* (*'Aangehouden'* in Dutch). This means they will be allowed to continue their study program, however, during the next full year, they will again be subjected to the BSA, and thus are required to achieve the number of ECs set as the BSA-norm.

Students realizing they won't make the BSA-norm can choose to withdraw from the program prior to the first of February. This will often be done following interim advice, handed out by all Utrecht University faculties (including FVMU) and most other academic institutes. Withdrawing early means you are not subjected to the BSA, and can re-enter the program next year if you choose to do so. Students withdrawing in February and restarting the next year are fittingly termed *Restarters* (*'Herstarters'* in Dutch).

As has been stated, the main goal of the BSA is making sure students find an academic study program suited to their interests and strengths.[1] By handing out a BSA, students who are likely to not finish the study program can be detected and dismissed early on in the program.[2] Eliminating unmotivated students in this way is thought to create a better learning environment for both student and teacher.[5,8,9] Students will also be prevented from continuing in their study program without making adequate progress, which would otherwise mean a loss of time and money without any returns for society, the faculty, and the students themselves. However, Arnold & van den Brink (2010) found students dismissed from a specific program are not protected from choosing another unsuitable study

program.[1] Although it is not a primary goal, by causing a higher percentage of students to complete their study program, the BSA could increase financial return for educational facilities.[2,4]

There is some opposition to the BSA advice. It is stated that suitability to a study program can't be measured by results in the first year. Whether students should be subjected to such a ruling, enforcing a minimum effort, is also questioned.[5,8,9] I myself think the BSA may put too much pressure on students, limiting the freedom in choosing when to finish certain parts of the program, and possibly inhibiting the amount of time left for extracurricular activities. This may then influence personal development, also by limiting the amount of scheduling you do yourself.

In July 2007 the foundation "Onderwijs Evaluatie Rapport" (Education Evaluation Report) researched the BSA at Utrecht University. Primary focus was the opinion of students on the implementation, reasonableness and usefulness of the BSA. Most students were positive. 65,3 percent of students agreed to the statement "The binding study advice is a useful measure". 19,2 percent disagreed to this. Students that didn't make the BSA-norm (13,5 percent of the total study group) were less positive than the overall population; 42,1 percent of these students agreed to the statement whilst 40,0 percent disagreed.[8]

The effects of the BSA on study behaviour and test results were researched by Koning et al. (2013) in a pool of students from the Psychology bachelor program at Erasmus University, Rotterdam. Two cohorts of students before the BSA was installed (pre-BSA group) were compared to two cohorts using the BSA (BSA group). Questionnaires answered by tutors showed that BSA group students appeared better prepared for lessons, and contributed more to group discussions than their pre-BSA colleagues. Student evaluations however showed that self-study time was not different between groups. The report discussed that differences in observed learning may be a result of different methods of studying, rather than an increase in time on study. Quantitative research on student grades was done by comparing overall course test GPA as well as scores on the 'knowledge progress test' (KPT), an assessment taken four times a year during the first two years of study, assessing the student's study progress. It was shown that average KPT-scores were not significantly different between groups. However, course test GPA was, surprisingly, significantly higher in the non-BSA group. Furthermore, average ECs achieved during the first year were significantly higher in the non-BSA group as well. According to the research group an explanation might be that students to which the BSA applied were overly focused on making the BSA-norm, instead of gaining and being able to apply new knowledge.[6] No influences that could have caused these effects other than the implementation of the BSA were recognized.[6]

The binding study advice at the Faculty of Veterinary Medicine, Utrecht

In the curricular year of 2004-2005 the BSA was introduced at Utrecht University.[7] First in two programs, the School of Law and Psychology. At this moment all bachelor programs at Utrecht University use the BSA.[7] The FVMU first used the BSA in the curricular year 2006-2007, using a BSA-norm of 30 ECs. Since then, the BSA-norm has been increased twice following University-wide changes. In 2009-2010 it was increased to 37,5 ECs, and since 2012-2013 it has been set at 45 ECs.

Aim of this study

At the FVMU the general consensus is that the BSA positively influences students. However, no further research into effects on study progress and course test results has been done prior to this study. Other literature on the effects of the BSA is also sparse, the only peer-reviewed research I was able to find on this was De Koning et al. 2013.

This study analyses the selective efficiency of the BSA at the FVMU. Specifically, this report focuses on quantitative results with regards to study progress and course test grades. Study progress in this is seen as the ability of a student to achieve ECs during a period of time, and the time needed to complete parts of the study program. Students subjected to a BSA are expected to perform better

on both course test results and study progress than students that entered the program before the BSA was installed, if it is indeed an effective tool for selection.

Apart from determining if the BSA itself is effective, research is also done to determine if the height of the BSA-norm has any influence on the selective effect. I expect there to be little if any influence, except perhaps slightly better scores during the first year, which is where students will especially feel the potential push created by the BSA.

As explained earlier, apart from students either achieving a Positive or Negative BSA, students can also get an Arrested BSA if they achieve a number of ECs under the BSA-norm but can give a valid reason for this. This study evaluates how these students perform in the remainder of their study program, compared to students that achieved a Positive BSA. This sheds light on the ability of the FVMU Board of Examiners to separate students with legitimate reasons for not making the norm from students that maybe should not have been allowed a second chance. I expect there will be a division between two groups of students; those that receive an Arrested BSA but perform relatively well during the remainder of their program, and those that drop out, mostly the second year.

In short, this report tries to answer the following main research question (RQ) and two subquestions (SQ):

RQ: Does the BSA have a positive selective effect on study progress and course test grades at FVMU?

SQ1: Does the height of the BSA-norm influence the selective effect named in RQ?

SQ2: How do students that receive an Arrested BSA perform compared to those that receive a Positive BSA?

METHOD

Context

Since 2001, the program of Veterinary Medicine at the FVMU was build up off two phases of study totalling 6 years. The doctorate fase, comprising of the first four years of the full program, consisted mainly of theoretical background on animal health, followed by a period of acquiring practical skills and combining both in classes in case diagnostics. This was then followed by a two year period of clinical and research internships in different fields of veterinary medicine. This curriculum, called C2001, was available for entry last in the curricular year 2006-2007. The BSA was used first in the curricular year 2006-2007, meaning one cohort of students from C2001 was subjected to it.

As of September 2007, students entered a new curriculum based on a bachelor-master structure, something that was already widely used by other faculties in the Netherlands. This curriculum consists of a three year bachelor, followed by a three year master. The bachelor program starts with a first year in which students get a basis for the rest of their study program. Theoretical education is given on the basics of structures and processes in the animal. Apart from a zoomed view on cellular and molecular phenomenon, focus is also put on population dynamics. The second and third year of the bachelor program consist of theoretical courses on pathobiological themes, supplemented with linear education on subjects such as professional behaviour, ethics, clinical reasoning and diagnostics. The master program is similar to the last two years of C2001, consisting mainly of internships. It being spread out over three years gives students room to be filled with a minor and some courses or internships of choice.

Sample

Data used in this study were obtained from OSIRIS, the student registration system used at Utrecht University. Data were retrieved on, if present, student demo-graphics, method of admission, course results, ECTS-weighted averages of course test results, dates of completion of the doctoral or bachelor phase and the BSA handed out during the first year of study. Data from all students that started at the Faculty of Veterinary Medicine, Utrecht University in the years 2005 through 2012 were used, with the exception of students that switched between curricula.

14,7% of students that started their study program in 2005 or 2006 at the FVMU (in C2001) switched to the bachelor-master program when it was introduced. Students switching curricula were not included in this study. This was done because they often had already finished a number of courses in the C2001 program, giving them free points in the bachelor-master program. As a result the number of ECTS they could achieve over the years was often unequal to regular students. Also, because of their potential advantage of having already followed a significant portion of the program, results in the bachelor-master program may be inaccurate to use to get to a fair judgment of these students.

The resulting pool consists of a total of 1761 students. An overview of student demographics is presented in table 1.

Table 1: Student Demographics

Variable		Count
Gender	Male	386
	Female	1375
BSA Norm	None	223
	30 EC	870
	37,5 EC	444
	45 EC	224
Total		**1761**

Variables

Input variables

No BSA vs. BSA

For evaluating the effect of the instalment of the BSA, comparisons were made between students not subjected to a BSA ruling (NoBSA) versus those who were (BSA^x).

BSA-norm grouping

To invest whether the height of the BSA-norm had any effect on study performance, 3 subgroups within BSA^x were created; a group with a BSA-norm of 30 ECs (BSA^{30}), a group with a BSA-norm of 37,5 ECs (BSA^{37,5}) and a group with a BSA-norm of 45 ECs (BSA^{45}).

Arrested BSA vs. Positive BSA

Groups of students were divided and compared according to the BSA they received (Arrested or Positive) for all outcome variables, in order to see if students given an Arrested BSA perform similar to students gaining a Positive BSA.

In this research, because of administrational reasons, the Arrested BSA group consists of a mixture of both Arrested BSA and Restarters. Students that withdrew during the first year were not used in the comparisons made between groups Arrested BSA and Positive BSA.

Outcome variables on study progress

Influences of the BSA on study progression through the curriculum were the main focus of this study. A variety of variables was used for assessing student progression throughout their academic career in Veterinary Medicine.

1) ECs achieved in the first year

Total ECs achieved during the first year, set as ranging from the first of September from the starting year till the first of September in the next year.

2) ECs achieved during the second year

Total ECs achieved during the second year, set as ranging from the first of September from the start of the second year till the first of September in the next year.

3) Months needed to complete a 180 EC program

To assess progression through the entire curriculum the number of months between starting and finishing the full doctorate or bachelor exam were calculated. It was specifically chosen to use these dates over the finishing dates of the entire curriculum, because comparisons could then also be made between groups of students with different BSA point limits. Also, because of the mainly fixed nature of the specializing fase in the C2001 curriculum and the master program, limited differences between student progression are possible, making them less interesting for examination. Data from all students starting in the years 2005 through 2010, i.e. those who could have finished their doctorate or bachelor before September 2013, were used, if they had not quit their study program prematurely.

Some students however would not yet have finished their program. Because these students are interesting for the evaluation, an estimation was made for the number of months they would require to finish. For this, the formulae presented below were used.

Formula 1
Months till completion = Remaining EC / Average EC achieved per month after year 2 + Months spent at FVMU before September 2013
Formula 2
Months till completion = Remaining EC / Average EC achieved per month in year 1 and 2 + Months spent at FVMU before September 2013

The number of ECTS that were still to be achieved was divided by the number of ECTS a student had achieved on average per month during either the years following the second year, or the first two

years. This gave an estimated number of months needed to finish the remainder of the program, which was then added to the number of months the student had already been studying, giving an estimate on the full time the student would need to complete the program.

As said not all years of study were used to estimate remaining study time. This was done to correct for people under- or overperforming during certain years of their study, for whatever reason. Because this can happen during both the first years or later on in the study program, months necessary for completion were calculated via both methods. Then, the lowest of the two outcome values was used as the estimated number of months for that student.

A correction had to be made to be able to compare the C2001 students (with a four year doctorate) to the bachelor students (with a three year bachelor). Because the bachelor program is the program used now, it was chosen to correct the number of months of the C2001 students to fit the bachelors', essentially making the number of months presented here a scale applicable to the 180 EC program of the bachelor. This meant dividing the number of months needed to finish the program by 4, followed by multiplying by 3.

4) Finishing the propedeuse in one year

Percentages of students managing to finish their propedeuse (the first year of the program consisting of 60 ECs) in the first year.

5) Dropout rate after starting second year

Percentages of students that achieved at least 1 EC after starting their second year at the faculty, but dropped out later in the program. Students that started in 2011 or later were excluded from this analysis, because they may still drop out later in the program.

Outcome variable on course test grades

6) EC-weighted average course test grades

Individual course test result in the Netherlands range from 1 to 10, however only grades higher than 5,5 show up as results in OSIRIS and are used for further calculation. These are then multiplied by the number of ECs the course represents, and after adding all outcomes together divided by the total number of ECs. These EC-weighted averages for all students were retrieved from OSIRIS.

Statistical analysis

Continuous outcome variables were tested for normality. Because all variables were tested as non-normally distributed, it was chosen to analyse between pairs of groups with Mann-Whitney testing, and between more than two groups with Kruskal-Wallis testing. Categorical outcome variables were statistically compared between groups by Chi-squared testing.

The outcome variables were compared between all groups for which these could be gathered. Because most comparisons would be made between students from different curricula, potentially causing results that were not only dependent on the BSA, it was discussed whether a separate grouping had to be made between C2001 students without a BSA and C2001 students without a BSA. It was chosen to not do this comparison, because the cohort of students from C2001 with a BSA (cohort 2006) had a significant group of students that decided to switch curricula after the first year, and the pressure of having to be a nominal student, or deciding to switch curricula, could potentially have caused significant changes in study behaviour and progression, leading to results that would not be useful for evaluation.

Note that students that receive an Arrested BSA, by definition of an Arrested advice, have performed sub optimally in the first year. Therefor not all outcome variables named below were compared between the groups Arrested BSA and Positive BSA.

Only students that achieved 30 or more ECs were used for evaluating EC-weighted average course test results. This was done because a student that attained less ECs may not yet have an average grading that is a proper representative of their study capabilities.

RESULTS

An overview of results on study progress can be found in tables 1 and 2. Results for course test grade averages are given in tables 3 and 4. Full statistical testing as extracted from SPSS is presented in appendix II.

Mean ECs achieved in the first year [(table 1 & 2)]

Students in group BSA^x achieved more ECs on average in the first year than those in group NoBSA, which was shown to be a significant difference (*P=0,035*).

Furthermore, with a higher BSA-norm, a higher mean number of ECs was achieved. Significance of differences between all groups of different BSA limits (BSA^{30}, BSA^{37,5}, BSA^{45}) was determined, but turned out not to be significant (*P=0,054*). However since this was close to the margin of significance, further testing was done between pairs of groups. This only showed significant difference between NoBSA and BSA^{45} (*P=0,004*).

Mean ECs achieved in the second year [(table 1 & 2)]

Mean ECs achieved in the second year by BSA-norm showed similar distribution as mean ECs achieved in first year, as shown in table 2. Students in group BSA^x achieved more ECs on average than students in group NoBSA, and students in group BSA^{37,5} achieved slightly higher ECs on average than those in BSA^{30}.

A significant difference was found between all groups (*P<0,000*). This difference was a result of the NoBSA group students scoring significantly lower than other students (*P<0,000*), differences between groups BSA^{30} and BSA^{37,5} were not significant (*P=1,000*).

Note that group BSA^{45} is not included in these tests. This is because the BSA-norm of 45 ECs was first used in the curricular year 2012-2013, and thus these students had not yet entered the second year of their studies by the time this study was started. Therefor no data for achievements in the second year are available.

Looking at students that received an Arrested advice compared to those that received a Positive advice, the former score significantly lower (*P<0,000*) than the latter by quite a margin. When removing students that stopped at later points in their careers, means converge (46,803 for Arrested BSA, 55,615 for Positive BSA), but are still significantly different (*P<0,000*).

Mean number of months needed to complete a 180 EC program [(table 1 & 2)]

Students in group NoBSA need less months on average than students in group BSA^x. This difference was however not significant (*P=0,959*). Differences between pairs of groups were also not significant.

Students in the Positive group needed a significantly lower number of months to finish than those in the Arrested group (*P<0,000*).

Finishing the propedeuse in one year [(table 1 & 2)]

The percentage of students that managed to achieve the propedeuse in one year was significantly higher for students in group BSA^x than NoBSA (*P=0,039*). Overall significance between groups was not found (*P=0,057*). Testing group pairs showed significant differences between groups NoBSA and all other groups but BSA^{37,5}, and showed no significance in differences between groups with a BSA.

Dropout rate after starting the second year [table 1 & 2]

Students in group BSA[x] were significantly less likely to drop out after starting the second year than students in group NoBSA (*P<0,000*). Group BSA[37,5] had a slightly lower dropout rate than group BSA[30], but this was not significant (*P=0,214*).

As seen in table 2, 30,9% of students dropped out after receiving an Arrested BSA, versus only 2,0% of students that received a Positive BSA. This was a significant difference (*P<0,000*), and can partially explain the difference in mean ECs achieved in the second year (see the subchapter on this for further information).

EC-weighted average course test grades [tables 3 & 4]

As can be seen in table 3, mean course test results did not differentiate much between groups. Statistical analysis also did not show significant differences over all groups (*P=0,126*). Statistical difference was found however between NoBSA and BSA[x] (*P=0,020*).

Students in group Arrested BSA scored a significantly lower average grade than students in group Positive BSA (*P<0,000*).

Table 1: Results on study progress per BSA-norm group

	ECs achieved in first year			ECs achieved in second year			Months till completion			Finish propedeuse in one year	Dropout rate after starting year 2
	Mean	N	St. Dev.	Mean	N	St. Dev.	Mean	N	St. Dev.		
NoBSA	45,874	223	18,2045	47,599	202	14,6238	39,8342	174	5,79879	42,6%	11,9%
BSA[x][a]	48,426	1538	17,4691	53,990	1157	12,7541	41,1937	914	11,50160	50,0%	4,1%
BSA[30]	47,787	870	18,1031	53,758	757	13,0879	41,3240	721	11,84930	50,0%	4,2%
BSA[37,5]	48,767	444	16,5677	54,430	400	12,1012	40,7072	193	10,11075	47,5%	3,5%
BSA[45][b]	50,234	224	16,6091	-	-	-	-	-	-	54,9%	-
Total	48,103	1761	17,5791	53,040	1359	13,2400	40,9763	1088	10,80331	49,1%	5,4%

a. Note that BSA[x] is the combined group of subgroups BSA[30], BSA[37,5] and BSA[45].
b. Because the BSA-norm was first set to 45 in the curricular year 2012-2013, no data other than results achieved in the first year were available for these students.

Table 2: Results on study progress for students with Arrested and Positive BSAs

	ECs achieved during second year			Months till completion			Dropout rate after starting year 2
	Mean	N	St. Dev.	Mean	N	St. Dev.	
Arrested[a,b]	38,159	69	16,2760	59,6457	37	20,01837	30,9%
Positive	55,143	1083	11,6052	40,3956	876	41,1758	2,0%

a. Note that the first year is not of interest for evaluation for Arrested BSA.
b. Note that this group in this study consists of both Arrested BSA students and Restarters, due to OSIRIS inaccuracies. See the subchapter on Input Variables for further explanation.

Table 3: EC weighted average grades per BSA-norm group

EC weighted average grades

	Mean	N	St. Dev.
NoBSA	6,8188	187	,42614
BSA^{x} [a]	6,9091	1349	,47659
BSA^{30}	6,9117	750	,47630
BSA^{37,5}	6,8936	402	,45410
BSA^{45}	6,9305	197	,52188
Total	6,8981	1536	,47153

a. Note that BSA^{x} is the combined group of subgroups BSA^{30}, BSA^{37,5} and BSA^{45}.

Table 4: Results on study progress for students with Arrested and Positive BSAs

EC weighted average grades

	Mean	N	St. Dev.
Arrested[a]	6,5688	58	0,17792
Positive	6,9237	1081	0,47242

a. Note that this group in this study consists of both Arrested BSA students and Restarters. See the subchapter on Input Variables for further explanation.

DISCUSSION

Answering the research questions

RQ: Does the BSA have a positive selective effect on study progress and course test grades at FVMU?

When looking at study progress parameters, students subjected to a BSA performed better on average during their first two years than students not subjected to a BSA. ECs achieved in both years were significantly higher, and students in group BSA[x] were more likely to finish their propaedeutic exam in one year. The difference in means was even bigger in the second year, which strongly contradicts my hypothesis that students might perform worse in subsequent years. In fact, it seems to suggest that the BSA has a very good selective effect, leaving mostly students that are very suited to the program. Lower dropout rates after starting year two are further proof of this.

This however is not apparent when looking at the number of months necessary for completing the program, where (insignificant) differences actually point out the NoBSA group as the stronger group. Two explanations can be given for this finding.

First, students in the NoBSA group were exclusively C2001 students starting in the curricular year 2005-2006. These students were somewhat pressured into making steady study progress by virtue of the ending of the C2001 curriculum. Furthermore, students that may have ended up with an above average number of months needed, may have switched to the bachelor-master program, further lowering the average of the NoBSA group.

Second I have made estimated predictions on the number of months needed to complete the program for students in the bachelor that did not finish their program as of the first of September 2013 by applying a formula. This formula has been thoroughly thought-through and tested, and the applied calculations seemed to give the most appropriate results. However, by virtue of it being an estimation, some inaccuracies may be present.

EC-weighted average grades were significantly higher in students from the BSA[x] group. This indicates that the BSA does not impair the students' will to gain and retain knowledge. This contradicts findings by de Koning et al. (2013), who suggested that students subjected to a BSA may focus more on gaining enough EC, rather than acquiring knowledge.[7]

SQ1: Does the height of the BSA-norm influence the selective effect named in RQ?

Height of the BSA-norm seemed to have little influence on all parameters. In general, higher BSA-norms resulted in higher resulting outcome variable scored, but differences were often minimal and statistically insignificant. Interesting to see is that group BSA[37,5] actually performed worse than group BSA[30] on several parameters. This may partially be caused by the curricular switch influences, as described earlier, since BSA[30] also contains a number of C2001 students.

SQ2: How do students that receive an Arrested BSA perform compared to those that receive a Positive BSA?

The research results can be inaccurate due to the mixing of Restarters into the group Arrested BSA. See page 7, subchapter Input Variables for further details.

From the results, it is apparent that students that receive an Arrested BSA in their first year are less successful in the remainder of their study program than those that received a Positive BSA. Even when removing students that quit their program at a later point, these differences remain (though not as big).

When looking at the total months needed to complete the program, students in group Arrested BSA need approximately 19 months more on average. Taking into consideration that these students often

achieve just a small number of ECs during their first year, one could say they need about 7 months more than an average recipient of a Positive BSA to complete the program.

One explanation for these differences can be that students with an Arrested BSA are sometimes force to follow a mixture of course from several program years at the same time. This may influence their performance negatively. Apart from this, another obvious explanation would be that not all students with an Arrested BSA should have been allowed to continue the program.

Conclusions, strengths and limitations

From the results, the BSA in general seems to be an effective method for selecting students after the first year, improving both study progress and course test grading. The only contradictory finding was the number of months needed to complete the program, which, as explained above, may not be accurately researched here. It would be interesting to compare my, partially estimated, data to the actual results in a couple of years.

Increasing the height of the BSA-norm does not seem to significantly improve study progress or course test grading results.

The research results concerning Arrested BSA variables can be inaccurate due to the mixing of Restarters into the group Arrested BSA. See page 7, subchapter Input Variables for further details. Students receiving an Arrested BSA perform worse than students receiving a Positive BSA. This is unsurprising, because, apart from the explanations given earlier, it is also probably impossible to make fully accurate predictions of further study performance for all students that underperform in the first year. Therefore, some students that are unsuited to the program will remain. Instead, the FVMU, and maybe the Utrecht University as a whole, is to determine whether the outcomes of this study present an acceptable difference between both groups, or that maybe stricter selection has to be applied.

One weakness in this report is the curricular differences which may have influenced several variables. This was however inevitable, as the main objective was to compare students subjected to a BSA to those that were not subjected to a BSA. All students in the bachelor curriculum were subjected to a BSA. In the C2001, groups were divisible between no BSA and BSA, but because of the special situation these students were in by virtue of the pressure of the curricular switch, it was decided this would not give results suitable for evaluation.

However, taking this weakness into account would mean the group NoBSA (and possibly BSA[30]) scored better than they maybe would have had there not been a curricular switch. Since most findings already point towards NoBSA scoring significantly worse, one would only expect these differences to increase. Further research could be done using older cohorts of C2001 students, which were not influenced by the curricular switch as much, and potentially removing the entire 2005 and 2006 cohorts.

Whether the BSA is also a profitable tool for students is a question not answered in this report, and would have to be answered through separate research. Utrecht University, by providing a half-time advice to all students, does seem to try to make the BSA not only a tool for selection that profits the faculties, but also a tool to make students aware of possible future problems.

Acknowledgements

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APPENDIX I
A NUMERICAL OVERVIEW ON THE SELECTIVE EFFICIENCY OF THE DECENTRALISED SELECTION METHOD USED AT THE FACULTY OF VETERINARY MEDICINE, UTRECHT

Admission of students for study programs with a *numerus clausus*

A fair amount of (academic) educations in the Netherlands have a set number of students allowed to enter the program; a *numerus clausus* or *numerus fixus*. The limitation can be caused by a lack of facilities, or is sometimes set to prevent an overflow of postgraduates in a certain field, which could potentially cause a rise in unemployment in that field. In the past students for these programs were often assigned by weighted lottery, in which people have better odds as their average grading during their pre-university secondary education is higher. Students averaging an 8 or higher would qualify automatically, and didn't have to take part in the lottery.

In recent times however resistance has been shown to this lottery system. Many people feel it's unfair and doesn't allow the potential student to show their strengths.[8] Institutes often also feel that selection allows them to create a strong field of students, decreasing the number of students who will experience problems in finishing the program.

Admission of students at the faculty of Veterinary Medicine

Yearly 225 new students enter the first year of their study program at the FVMU. Most of these students are either assigned by a weighted lottery system or because they scored an average of 8 or higher on their pre-university secondary education.

Part of the students positions however are reserved for students who want to specialize in the fields of food animals and/or veterinary public health. This is done because farm-animal medicine is a less popular field amongst students, and a shortage of students entering this field was therefore expected.[4] Students wanting to apply for these positions will follow a selection procedure, out of which a maximum number of 70 students will be chosen to enter the program. Applicants will be invited for a structured interview conducted by a teacher, veterinarian and a student which have been trained in interviewing based on behavioural analysis. Students are selected not only based on affinity with the field of farm-animal medicine and veterinary public health, but also on motivation, integrity, vision and social and decision making skills. Candidates may only take part in the decentralized selection procedure once.[4]

Decentralized selection may become mandatory for Dutch faculties in the near future, and mainly for this reason I, faculty board members and educational staff were interested to see if the current method of selection delivers a group of students that perform better than the average non-selected student. Because most of the necessary data was already extracted from OSIRIS, I decided to do statistical testing for grouping based on method of admission (Lottery, Average >8, Decentralized). An overview of results is presented in tables A-1 and A2. Full statistical analysis can be found in Appendix II.

Table A-1: Results on study progress per admission group

	ECs achieved in first year			ECs achieved in second year			Months till completion			Finish propedeuse in one year	Dropout rate after starting year 2
	Mean	N	St. Dev.	Mean	N	St. Dev.	Mean	N	St. Dev.		
Lottery	47,489	1217	17,9067	52,555	928	13,6124	41,5237	734	11,27095	46,4%	6,4%
>8 Exam	57,457	160	8,5522	58,501	141	7,4052	36,8454	126	8,47340	86,2%	0,8%
Selected	46,153	384	18,1686	51,937	290	13,6480	41,4969	228	9,92097	41,9%	4,6%
Total	48,103	1761	17,5791	53,040	1359	13,2400	40,9763	1088	10,80331	49,1%	5,4%

Table A-2: EC weighted average grades per BSA-norm group

	EC weighted average grades		
	Mean	N	St. Dev.
Lottery	6,8558	1053	,41813
>8 Exam	7,5110	156	,54738
Selected	6,7419	327	,36096
Total	6,8981	1536	,47153

b. Note that BSA[x] is the combined group of subgroups BSA[30], BSA[37,5] and BSA[45].

APPENDIX II
COMPLETE OVERVIEW OF STATISTICAL TESTING

Means

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Gemiddeld cijfer * BSA-norm	1536	97,5%	40	2,5%	1576	100,0%
Gemiddeld cijfer * BSA Yes/No	1536	97,5%	40	2,5%	1576	100,0%
Gemiddeld cijfer * Admission	1536	97,5%	40	2,5%	1576	100,0%

Gemiddeld cijfer * BSA-norm

Gemiddeld cijfer

BSA-norm	Mean	N	Std. Deviation
0	6,8188	187	,42614
30	6,9117	750	,47630
37,5	6,8936	402	,45410
45	6,9305	197	,52188
Total	6,8981	1536	,47153

Gemiddeld cijfer * BSA Yes/No

Gemiddeld cijfer

BSA Yes/No	Mean	N	Std. Deviation
no	6,8188	187	,42614
yes	6,9091	1349	,47659
Total	6,8981	1536	,47153

Gemiddeld cijfer * Admission

Gemiddeld cijfer

Admission	Mean	N	Std. Deviation
Lottery	6,8558	1053	,41813
>8 Exam result	7,5110	156	,54738

Selected	6,7419	327	,36096
Total	6,8981	1536	,47153

NPar Tests

Kruskal-Wallis Test

Ranks

	BSA-norm	N	Mean Rank
Gemiddeld cijfer	0	187	697,56
	30	750	782,87
	37,5	402	768,52
	45	197	781,09
	Total	1536	

Test Statistics

	Gemiddeld cijfer
Chi-Square	5,730
df	3
Asymp. Sig.	,126

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
Gemiddeld cijfer	0	187	426,85	79821,00
	30	750	479,51	359632,00
	Total	937		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	62243,000

Wilcoxon W	79821,000
Z	-2,381
Asymp. Sig. (2-tailed)	,017

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
	0	187	276,32	51672,00
Gemiddeld cijfer	37,5	402	303,69	122083,00
	Total	589		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	34094,000
Wilcoxon W	51672,000
Z	-1,817
Asymp. Sig. (2-tailed)	,069

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
	0	187	182,39	34106,50
Gemiddeld cijfer	45	197	202,10	39813,50
	Total	384		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	16528,500
Wilcoxon W	34106,500

Z	-1,740
Asymp. Sig. (2-tailed)	,082

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
	30	750	580,32	435241,00
Gemiddeld cijfer	37,5	402	569,37	228887,00
	Total	1152		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	147884,000
Wilcoxon W	228887,000
Z	-,533
Asymp. Sig. (2-tailed)	,594

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
	30	750	474,04	355529,00
Gemiddeld cijfer	45	197	473,85	93349,00
	Total	947		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	73846,000
Wilcoxon W	93349,000
Z	-,008

Asymp. Sig. (2-tailed)	,993

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
	37,5	402	298,46	119982,00
Gemiddeld cijfer	45	197	303,14	59718,00
	Total	599		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	38979,000
Wilcoxon W	119982,000
Z	-,311
Asymp. Sig. (2-tailed)	,756

NPar Tests

Mann-Whitney Test

Ranks

	BSA Yes/No	N	Mean Rank	Sum of Ranks
	no	187	697,56	130443,50
Gemiddeld cijfer	yes	1349	778,33	1049972,50
	Total	1536		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	112865,500
Wilcoxon W	130443,500
Z	-2,334

Asymp. Sig. (2-tailed)	,020

NPar Tests

Kruskal-Wallis Test

Ranks

	Admission	N	Mean Rank
Gemiddeld cijfer	Lottery	1053	743,74
	>8 Exam result	156	1242,13
	Selected	327	622,27
	Total	1536	

Test Statistics

	Gemiddeld cijfer
Chi-Square	216,720
df	2
Asymp. Sig.	,000

NPar Tests

Mann-Whitney Test

Ranks

	Admission	N	Mean Rank	Sum of Ranks
Gemiddeld cijfer	Lottery	1053	553,34	582663,50
	>8 Exam result	156	953,73	148781,50
	Total	1209		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	27732,500
Wilcoxon W	582663,500
Z	-13,368

Asymp. Sig. (2-tailed)	,000

NPar Tests

Mann-Whitney Test

Ranks

	Admission	N	Mean Rank	Sum of Ranks
	Lottery	1053	717,41	755428,00
Gemiddeld cijfer	Selected	327	603,86	197462,00
	Total	1380		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	143834,000
Wilcoxon W	197462,000
Z	-4,501
Asymp. Sig. (2-tailed)	,000

NPar Tests

Mann-Whitney Test

Ranks

	Admission	N	Mean Rank	Sum of Ranks
	>8 Exam result	156	366,90	57237,00
Gemiddeld cijfer	Selected	327	182,41	59649,00
	Total	483		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	6021,000
Wilcoxon W	59649,000
Z	-13,585

Asymp. Sig. (2-tailed)	,000

Means

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
ECTS in J1 * BSA-norm	1761	100,0%	0	0,0%	1761	100,0%
ECTS in J1 * BSA Yes/No	1761	100,0%	0	0,0%	1761	100,0%
ECTS in J1 * Admission	1761	100,0%	0	0,0%	1761	100,0%

ECTS in J1 * BSA-norm

ECTS in J1

BSA-norm	Mean	N	Std. Deviation
0	45,874	223	18,2045
30	47,787	870	18,1031
37,5	48,767	444	16,5677
45	50,234	224	16,6091
Total	48,103	1761	17,5791

ECTS in J1 * BSA Yes/No

ECTS in J1

BSA Yes/No	Mean	N	Std. Deviation
no	45,874	223	18,2045
yes	48,426	1538	17,4691
Total	48,103	1761	17,5791

ECTS in J1 * Admission

ECTS in J1

Admission	Mean	N	Std. Deviation
Lottery	47,489	1217	17,9067
>8 Exam result	57,457	160	8,5522
Selected	46,153	384	18,1686
Total	48,103	1761	17,5791

NPar Tests

Kruskal-Wallis Test

Ranks

	BSA-norm	N	Mean Rank
ECTS in J1	0	223	818,13
	30	870	882,13
	37,5	444	879,20
	45	224	942,77
	Total	1761	

Test Statistics

	ECTS in J1
Chi-Square	7,627
df	3
Asymp. Sig.	,054

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
ECTS in J1	0	223	515,74	115009,50
	30	870	555,01	482861,50
	Total	1093		

Test Statistics

	ECTS in J1
Mann-Whitney U	90033,500
Wilcoxon W	115009,500
Z	-1,761
Asymp. Sig. (2-tailed)	,078

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
	0	223	318,23	70964,50
ECTS in J1	37,5	444	341,92	151813,50
	Total	667		

Test Statistics

	ECTS in J1
Mann-Whitney U	45988,500
Wilcoxon W	70964,500
Z	-1,576
Asymp. Sig. (2-tailed)	,115

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
	0	223	208,17	46421,50
ECTS in J1	45	224	239,76	53706,50
	Total	447		

Test Statistics

	ECTS in J1
Mann-Whitney U	21445,500
Wilcoxon W	46421,500
Z	-2,750
Asymp. Sig. (2-tailed)	,006

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
	30	870	658,18	572613,50
ECTS in J1	37,5	444	656,17	291341,50
	Total	1314		

Test Statistics

	ECTS in J1
Mann-Whitney U	192551,500
Wilcoxon W	291341,500
Z	-,096
Asymp. Sig. (2-tailed)	,923

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
	30	870	539,94	469744,50
ECTS in J1	45	224	576,88	129220,50
	Total	1094		

Test Statistics

	ECTS in J1
Mann-Whitney U	90859,500
Wilcoxon W	469744,500
Z	-1,676
Asymp. Sig. (2-tailed)	,094

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
	37,5	444	326,11	144791,50
ECTS in J1	45	224	351,14	78654,50
	Total	668		

Test Statistics

	ECTS in J1
Mann-Whitney U	46001,500
Wilcoxon W	144791,500
Z	-1,692
Asymp. Sig. (2-tailed)	,091

NPar Tests

Mann-Whitney Test

Ranks

	BSA Yes/No	N	Mean Rank	Sum of Ranks
	no	223	818,13	182443,50
ECTS in J1	yes	1538	890,12	1368997,50
	Total	1761		

Test Statistics

	ECTS in J1
Mann-Whitney U	157467,500
Wilcoxon W	182443,500
Z	-2,104
Asymp. Sig. (2-tailed)	,035

NPar Tests

Kruskal-Wallis Test

Ranks

	Admission	N	Mean Rank
ECTS in J1	Lottery	1217	858,83
	>8 Exam result	160	1222,14
	Selected	384	809,13
	Total	1761	

Test Statistics

	ECTS in J1
Chi-Square	93,005
df	2
Asymp. Sig.	,000

NPar Tests

Mann-Whitney Test

Ranks

	Admission	N	Mean Rank	Sum of Ranks
ECTS in J1	Lottery	1217	655,83	798142,50
	>8 Exam result	160	941,32	150610,50
	Total	1377		

Test Statistics

	ECTS in J1
Mann-Whitney U	56989,500
Wilcoxon W	798142,500
Z	-9,170
Asymp. Sig. (2-tailed)	,000

NPar Tests

Mann-Whitney Test

Ranks

	Admission	N	Mean Rank	Sum of Ranks
	Lottery	1217	812,00	988204,50
ECTS in J1	Selected	384	766,14	294196,50
	Total	1601		

Test Statistics

	ECTS in J1
Mann-Whitney U	220276,500
Wilcoxon W	294196,500
Z	-1,780
Asymp. Sig. (2-tailed)	,075

NPar Tests

Mann-Whitney Test

Ranks

	Admission	N	Mean Rank	Sum of Ranks
	>8 Exam result	160	361,33	57812,00
ECTS in J1	Selected	384	235,49	90428,00
	Total	544		

Test Statistics

	ECTS in J1
Mann-Whitney U	16508,000
Wilcoxon W	90428,000
Z	-9,317
Asymp. Sig. (2-tailed)	,000

Means

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
ECTS in J2 * BSA-norm	1359	100,0%	0	0,0%	1359	100,0%
ECTS in J2 * BSA Yes/No	1359	100,0%	0	0,0%	1359	100,0%
ECTS in J2 * Admission	1359	100,0%	0	0,0%	1359	100,0%

ECTS in J2 * BSA-norm

ECTS in J2

BSA-norm	Mean	N	Std. Deviation
0	47,599	202	14,6238
30	53,758	757	13,0879
37,5	54,430	400	12,1012
Total	53,040	1359	13,2400

ECTS in J2 * BSA Yes/No

ECTS in J2

BSA Yes/No	Mean	N	Std. Deviation
no	47,599	202	14,6238
yes	53,990	1157	12,7541
Total	53,040	1359	13,2400

ECTS in J2 * Admission

ECTS in J2

Admission	Mean	N	Std. Deviation
Lottery	52,555	928	13,6124
>8 Exam result	58,501	141	7,4052
Selected	51,937	290	13,6480
Total	53,040	1359	13,2400

NPar Tests

Kruskal-Wallis Test

Ranks

	BSA-norm	N	Mean Rank
ECTS in J2	0	202	518,96
	30	757	707,80
	37,5	400	708,71
	Total	1359	

Test Statistics

	ECTS in J2
Chi-Square	43,161
df	2
Asymp. Sig.	,000

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
ECTS in J2	0	202	375,81	75913,00
	30	757	507,80	384407,00
	Total	959		

Test Statistics

	ECTS in J2
Mann-Whitney U	55410,000
Wilcoxon W	75913,000
Z	-6,244
Asymp. Sig. (2-tailed)	,000

NPar Tests

Mann-Whitney Test

Ranks

BSA-norm		N	Mean Rank	Sum of Ranks
	0	202	244,65	49419,00
ECTS in J2	37,5	400	330,21	132084,00
	Total	602		

Test Statistics

	ECTS in J2
Mann-Whitney U	28916,000
Wilcoxon W	49419,000
Z	-5,872
Asymp. Sig. (2-tailed)	,000

NPar Tests

Mann-Whitney Test

Ranks

BSA-norm		N	Mean Rank	Sum of Ranks
	30	757	579,00	438304,00
ECTS in J2	37,5	400	579,00	231599,00
	Total	1157		

Test Statistics

	ECTS in J2
Mann-Whitney U	151399,000
Wilcoxon W	231599,000
Z	,000
Asymp. Sig. (2-tailed)	1,000

NPar Tests

Mann-Whitney Test

Ranks

	BSA Yes/No	N	Mean Rank	Sum of Ranks
	no	202	518,96	104829,00
ECTS in J2	yes	1157	708,12	819291,00
	Total	1359		

Test Statistics

	ECTS in J2
Mann-Whitney U	84326,000
Wilcoxon W	104829,000
Z	-6,570
Asymp. Sig. (2-tailed)	,000

NPar Tests

Kruskal-Wallis Test

Ranks

	Admission	N	Mean Rank
	Lottery	928	670,32
	>8 Exam result	141	855,11
ECTS in J2	Selected	290	625,83
	Total	1359	

Test Statistics

	ECTS in J2
Chi-Square	36,900
df	2
Asymp. Sig.	,000

NPar Tests

Mann-Whitney Test

Ranks

	Admission	N	Mean Rank	Sum of Ranks
	Lottery	928	516,32	479145,00
ECTS in J2	>8 Exam result	141	657,94	92770,00
	Total	1069		

Test Statistics

	ECTS in J2
Mann-Whitney U	48089,000
Wilcoxon W	479145,000
Z	-5,334
Asymp. Sig. (2-tailed)	,000

NPar Tests

Mann-Whitney Test

Ranks

	Admission	N	Mean Rank	Sum of Ranks
	Lottery	928	618,50	573969,00
ECTS in J2	Selected	290	580,70	168402,00
	Total	1218		

Test Statistics

	ECTS in J2
Mann-Whitney U	126207,000
Wilcoxon W	168402,000
Z	-1,641
Asymp. Sig. (2-tailed)	,101

NPar Tests

Mann-Whitney Test

Ranks

	Admission	N	Mean Rank	Sum of Ranks
	>8 Exam result	141	268,16	37811,00
ECTS in J2	Selected	290	190,64	55285,00
	Total	431		

Test Statistics

	ECTS in J2
Mann-Whitney U	13090,000
Wilcoxon W	55285,000
Z	-6,391
Asymp. Sig. (2-tailed)	,000

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
BSA Yes/No * Prop in jaar 1	1761	100,0%	0	0,0%	1761	100,0%
BSA-norm * Prop in jaar 1	1761	100,0%	0	0,0%	1761	100,0%
Admission * Prop in jaar 1	1761	100,0%	0	0,0%	1761	100,0%

BSA Yes/No * Prop in jaar 1

Crosstab

% within BSA Yes/No

		Prop in jaar 1		Total
		no	yes	
BSA Yes/No	no	57,4%	42,6%	100,0%
	yes	50,0%	50,0%	100,0%
Total		50,9%	49,1%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4,267	1	,039		
Continuity Correction	3,976	1	,046		
Likelihood Ratio	4,283	1	,038		
Fisher's Exact Test				,045	,023
Linear-by-Linear Association	4,264	1	,039		
N of Valid Cases	1761				

BSA-norm * Prop in jaar 1

Crosstab

% within BSA-norm

		Prop in jaar 1		Total
		no	yes	
BSA-norm	0	57,4%	42,6%	100,0%
	30	50,0%	50,0%	100,0%
	37,5	52,5%	47,5%	100,0%
	45	45,1%	54,9%	100,0%
Total		50,9%	49,1%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7,518	3	,057
Likelihood Ratio	7,538	3	,057
Linear-by-Linear Association	3,484	1	,062
N of Valid Cases	1761		

Admission * Prop in jaar 1

Crosstab

% within Admission

		Prop in jaar 1		Total
		no	yes	
Admission	Lottery	53,6%	46,4%	100,0%
	>8 Exam result	13,8%	86,2%	100,0%
	Selected	58,1%	41,9%	100,0%

Total	50,9%	49,1%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	99,746	2	,000
Likelihood Ratio	109,340	2	,000
Linear-by-Linear Association	,073	1	,787
N of Valid Cases	1761		

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
BSA-norm * Prop in jaar 1	1093	100,0%	0	0,0%	1093	100,0%

BSA-norm * Prop in jaar 1 Crosstabulation

% within BSA-norm

		Prop in jaar 1		Total
		no	yes	
BSA-norm	0	57,4%	42,6%	100,0%
	30	50,0%	50,0%	100,0%
Total		51,5%	48,5%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3,891	1	,049		
Continuity Correction	3,600	1	,058		
Likelihood Ratio	3,905	1	,048		
Fisher's Exact Test				,051	,029
Linear-by-Linear Association	3,887	1	,049		
N of Valid Cases	1093				

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
BSA-norm * Prop in jaar 1	667	100,0%	0	0,0%	667	100,0%

BSA-norm * Prop in jaar 1 Crosstabulation

% within BSA-norm

		Prop in jaar 1		Total
		no	yes	
BSA-norm	0	57,4%	42,6%	100,0%
	37,5	52,5%	47,5%	100,0%
Total		54,1%	45,9%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1,448	1	,229		
Continuity Correction	1,257	1	,262		
Likelihood Ratio	1,452	1	,228		
Fisher's Exact Test				,249	,131
Linear-by-Linear Association	1,446	1	,229		
N of Valid Cases	667				

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
BSA-norm * Prop in jaar 1	447	100,0%	0	0,0%	447	100,0%

BSA-norm * Prop in jaar 1 Crosstabulation

% within BSA-norm

		Prop in jaar 1		Total
		no	yes	
BSA-norm	0	57,4%	42,6%	100,0%
	45	45,1%	54,9%	100,0%
Total		51,2%	48,8%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6,778	1	,009		
Continuity Correction	6,294	1	,012		
Likelihood Ratio	6,795	1	,009		
Fisher's Exact Test				,011	,006
Linear-by-Linear Association	6,762	1	,009		
N of Valid Cases	447				

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
BSA-norm * Prop in jaar 1	1314	100,0%	0	0,0%	1314	100,0%

BSA-norm * Prop in jaar 1 Crosstabulation

% within BSA-norm

		Prop in jaar 1		Total
		no	yes	
BSA-norm	30	50,0%	50,0%	100,0%
	37,5	52,5%	47,5%	100,0%
Total		50,8%	49,2%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,722	1	,396		
Continuity Correction	,626	1	,429		
Likelihood Ratio	,722	1	,395		
Fisher's Exact Test				,414	,214
Linear-by-Linear Association	,721	1	,396		
N of Valid Cases	1314				

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
BSA-norm * Prop in jaar 1	1094	100,0%	0	0,0%	1094	100,0%

BSA-norm * Prop in jaar 1 Crosstabulation

% within BSA-norm

		Prop in jaar 1		Total
		no	yes	
BSA-norm	30	50,0%	50,0%	100,0%
	45	45,1%	54,9%	100,0%
Total		49,0%	51,0%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1,719	1	,190		
Continuity Correction	1,528	1	,216		
Likelihood Ratio	1,722	1	,189		
Fisher's Exact Test				,203	,108
Linear-by-Linear Association	1,717	1	,190		
N of Valid Cases	1094				

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
BSA-norm * Prop in jaar 1	668	100,0%	0	0,0%	668	100,0%

BSA-norm * Prop in jaar 1 Crosstabulation

% within BSA-norm

		Prop in jaar 1		Total
		no	yes	
BSA-norm	37,5	52,5%	47,5%	100,0%
	45	45,1%	54,9%	100,0%
Total		50,0%	50,0%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3,251	1	,071		
Continuity Correction	2,962	1	,085		
Likelihood Ratio	3,255	1	,071		
Fisher's Exact Test				,085	,043
Linear-by-Linear Association	3,246	1	,072		
N of Valid Cases	668				

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Admission * Prop in jaar 1	544	100,0%	0	0,0%	544	100,0%

Admission * Prop in jaar 1 Crosstabulation

% within Admission

	Prop in jaar 1	Total

		no	yes	
Admission	>8 Exam result	13,8%	86,2%	100,0%
	Selected	58,1%	41,9%	100,0%
Total		45,0%	55,0%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	89,633	1	,000		
Continuity Correction	87,852	1	,000		
Likelihood Ratio	98,365	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	89,469	1	,000		
N of Valid Cases	544				

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Admission * Prop in jaar 1	1377	100,0%	0	0,0%	1377	100,0%

Admission * Prop in jaar 1 Crosstabulation

% within Admission

		Prop in jaar 1		Total
		no	yes	
Admission	Lottery	53,6%	46,4%	100,0%
	>8 Exam result	13,8%	86,2%	100,0%
Total		48,9%	51,1%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	89,748	1	,000		

Continuity Correction	88,162	1	,000		
Likelihood Ratio	99,293	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	89,683	1	,000		
N of Valid Cases	1377				

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Admission * Prop in jaar 1	1601	100,0%	0	0,0%	1601	100,0%

Admission * Prop in jaar 1 Crosstabulation

% within Admission

		Prop in jaar 1		Total
		no	yes	
Admission	Lottery	53,6%	46,4%	100,0%
	Selected	58,1%	41,9%	100,0%
Total		54,7%	45,3%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2,383	1	,123		
Continuity Correction	2,205	1	,138		
Likelihood Ratio	2,392	1	,122		
Fisher's Exact Test				,127	,069
Linear-by-Linear Association	2,382	1	,123		
N of Valid Cases	1601				

Means

Case Processing Summary

	Cases		
	Included	Excluded	Total

	N	Percent	N	Percent	N	Percent
Gemiddeld cijfer * BSA-norm	1536	97,5%	40	2,5%	1576	100,0%
Gemiddeld cijfer * BSA Yes/No	1536	97,5%	40	2,5%	1576	100,0%
Gemiddeld cijfer * Admission	1536	97,5%	40	2,5%	1576	100,0%

Gemiddeld cijfer * BSA-norm

Gemiddeld cijfer

BSA-norm	Mean	N	Std. Deviation
0	6,8188	187	,42614
30	6,9117	750	,47630
37,5	6,8936	402	,45410
45	6,9305	197	,52188
Total	6,8981	1536	,47153

Gemiddeld cijfer * BSA Yes/No

Gemiddeld cijfer

BSA Yes/No	Mean	N	Std. Deviation
no	6,8188	187	,42614
yes	6,9091	1349	,47659
Total	6,8981	1536	,47153

Gemiddeld cijfer * Admission

Gemiddeld cijfer

Admission	Mean	N	Std. Deviation
Lottery	6,8558	1053	,41813
>8 Exam result	7,5110	156	,54738
Selected	6,7419	327	,36096
Total	6,8981	1536	,47153

NPar Tests

Kruskal-Wallis Test

Ranks

	BSA-norm	N	Mean Rank
	0	187	697,56
	30	750	782,87
Gemiddeld cijfer	37,5	402	768,52
	45	197	781,09
	Total	1536	

Test Statistics

	Gemiddeld cijfer
Chi-Square	5,730
df	3
Asymp. Sig.	,126

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
	0	187	426,85	79821,00
Gemiddeld cijfer	30	750	479,51	359632,00
	Total	937		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	62243,000
Wilcoxon W	79821,000
Z	-2,381
Asymp. Sig. (2-tailed)	,017

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
	0	187	276,32	51672,00
Gemiddeld cijfer	37,5	402	303,69	122083,00
	Total	589		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	34094,000
Wilcoxon W	51672,000
Z	-1,817
Asymp. Sig. (2-tailed)	,069

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
	0	187	182,39	34106,50
Gemiddeld cijfer	45	197	202,10	39813,50
	Total	384		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	16528,500
Wilcoxon W	34106,500
Z	-1,740
Asymp. Sig. (2-tailed)	,082

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
	30	750	580,32	435241,00
Gemiddeld cijfer	37,5	402	569,37	228887,00
	Total	1152		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	147884,000
Wilcoxon W	228887,000
Z	-,533
Asymp. Sig. (2-tailed)	,594

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
	30	750	474,04	355529,00
Gemiddeld cijfer	45	197	473,85	93349,00
	Total	947		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	73846,000
Wilcoxon W	93349,000
Z	-,008
Asymp. Sig. (2-tailed)	,993

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
	37,5	402	298,46	119982,00
Gemiddeld cijfer	45	197	303,14	59718,00
	Total	599		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	38979,000
Wilcoxon W	119982,000
Z	-,311
Asymp. Sig. (2-tailed)	,756

NPar Tests

Mann-Whitney Test

Ranks

	BSA Yes/No	N	Mean Rank	Sum of Ranks
	no	187	697,56	130443,50
Gemiddeld cijfer	yes	1349	778,33	1049972,50
	Total	1536		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	112865,500
Wilcoxon W	130443,500
Z	-2,334
Asymp. Sig. (2-tailed)	,020

NPar Tests

Kruskal-Wallis Test

Ranks

	Admission	N	Mean Rank
Gemiddeld cijfer	Lottery	1053	743,74
	>8 Exam result	156	1242,13
	Selected	327	622,27
	Total	1536	

Test Statistics

	Gemiddeld cijfer
Chi-Square	216,720
df	2
Asymp. Sig.	,000

NPar Tests

Mann-Whitney Test

Ranks

	Admission	N	Mean Rank	Sum of Ranks
Gemiddeld cijfer	Lottery	1053	553,34	582663,50
	>8 Exam result	156	953,73	148781,50
	Total	1209		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	27732,500
Wilcoxon W	582663,500
Z	-13,368
Asymp. Sig. (2-tailed)	,000

NPar Tests

Mann-Whitney Test

Ranks

	Admission	N	Mean Rank	Sum of Ranks
	Lottery	1053	717,41	755428,00
Gemiddeld cijfer	Selected	327	603,86	197462,00
	Total	1380		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	143834,000
Wilcoxon W	197462,000
Z	-4,501
Asymp. Sig. (2-tailed)	,000

NPar Tests

Mann-Whitney Test

Ranks

	Admission	N	Mean Rank	Sum of Ranks
	>8 Exam result	156	366,90	57237,00
Gemiddeld cijfer	Selected	327	182,41	59649,00
	Total	483		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	6021,000
Wilcoxon W	59649,000
Z	-13,585
Asymp. Sig. (2-tailed)	,000

Means

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent

MonthsCompletion * BSA-norm	1088	100,0%	0	0,0%	1088	100,0%
MonthsCompletion * BSA Yes/No	1088	100,0%	0	0,0%	1088	100,0%
MonthsCompletion * Admission	1088	100,0%	0	0,0%	1088	100,0%

MonthsCompletion * BSA-norm

MonthsCompletion

BSA-norm	Mean	N	Std. Deviation
0	39,8342	174	5,79879
30	41,3240	721	11,84930
37,5	40,7072	193	10,11075
Total	40,9763	1088	10,80331

MonthsCompletion * BSA Yes/No

MonthsCompletion

BSA Yes/No	Mean	N	Std. Deviation
no	39,8342	174	5,79879
yes	41,1937	914	11,50160
Total	40,9763	1088	10,80331

MonthsCompletion * Admission

MonthsCompletion

Admission	Mean	N	Std. Deviation
Lottery	41,5237	734	11,27095
>8 Exam result	36,8454	126	8,47340
Selected	41,4969	228	9,92097
Total	40,9763	1088	10,80331

NPar Tests

Kruskal-Wallis Test

Ranks

	BSA-norm	N	Mean Rank
MonthsCompletion	0	174	545,61
	30	721	548,46
	37,5	193	528,69
	Total	1088	

Test Statistics

	MonthsCompletion
Chi-Square	,607
df	2
Asymp. Sig.	,738

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
MonthsCompletion	0	174	439,51	76474,50
	30	721	450,05	324485,50
	Total	895		

Test Statistics

	MonthsCompletion
Mann-Whitney U	61249,500
Wilcoxon W	76474,500
Z	-,483
Asymp. Sig. (2-tailed)	,629

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
	0	174	193,60	33687,00
MonthsCompletion	37,5	193	175,34	33841,00
	Total	367		

Test Statistics

	MonthsCompletion
Mann-Whitney U	15120,000
Wilcoxon W	33841,000
Z	-1,651
Asymp. Sig. (2-tailed)	,099

NPar Tests

Mann-Whitney Test

Ranks

	BSA-norm	N	Mean Rank	Sum of Ranks
	30	721	459,41	331238,00
MonthsCompletion	37,5	193	450,35	86917,00
	Total	914		

Test Statistics

	MonthsCompletion
Mann-Whitney U	68196,000
Wilcoxon W	86917,000
Z	-,425
Asymp. Sig. (2-tailed)	,671

NPar Tests

Mann-Whitney Test

Ranks

	BSA Yes/No	N	Mean Rank	Sum of Ranks
MonthsCompletion	no	174	545,61	94936,50
	yes	914	544,29	497479,50
	Total	1088		

Test Statistics

	MonthsCompletion
Mann-Whitney U	79324,500
Wilcoxon W	497479,500
Z	-,051
Asymp. Sig. (2-tailed)	,959

NPar Tests

Kruskal-Wallis Test

Ranks

	Admission	N	Mean Rank
MonthsCompletion	Lottery	734	563,34
	>8 Exam result	126	335,32
	Selected	228	599,44
	Total	1088	

Test Statistics

	MonthsCompletion
Chi-Square	65,597
df	2
Asymp. Sig.	,000

NPar Tests

Mann-Whitney Test

Ranks

	Admission	N	Mean Rank	Sum of Ranks
	Lottery	734	456,74	335250,50
MonthsCompletion	>8 Exam result	126	277,62	34979,50
	Total	860		

Test Statistics

	MonthsCompleti on
Mann-Whitney U	26978,500
Wilcoxon W	34979,500
Z	-7,488
Asymp. Sig. (2-tailed)	,000

NPar Tests

Mann-Whitney Test

Ranks

	Admission	N	Mean Rank	Sum of Ranks
	Lottery	734	474,10	347988,50
MonthsCompletion	Selected	228	505,33	115214,50
	Total	962		

Test Statistics

	MonthsCompleti on
Mann-Whitney U	78243,500
Wilcoxon W	347988,500
Z	-1,484
Asymp. Sig. (2-tailed)	,138

NPar Tests

Mann-Whitney Test

Ranks

	Admission	N	Mean Rank	Sum of Ranks
	>8 Exam result	126	121,21	15272,00
MonthsCompletion	Selected	228	208,61	47563,00
	Total	354		

Test Statistics

	MonthsCompletion
Mann-Whitney U	7271,000
Wilcoxon W	15272,000
Z	-7,705
Asymp. Sig. (2-tailed)	,000

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Admission * Gestopt?	1159	100,0%	0	0,0%	1159	100,0%

Admission * Gestopt? Crosstabulation

% within Admission

		Gestopt?		Total
		nee	ja	
	Lottery	93,6%	6,4%	100,0%
Admission	>8 Exam result	99,2%	0,8%	100,0%
	Selected	95,4%	4,6%	100,0%
Total		94,6%	5,4%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7,309	2	,026
Likelihood Ratio	10,173	2	,006
Linear-by-Linear Association	2,552	1	,110
N of Valid Cases	1159		

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
BSA-norm * Gestopt?	1316	74,7%	445	25,3%	1761	100,0%
BSA Yes/No * Gestopt?	1316	74,7%	445	25,3%	1761	100,0%
BSA * Gestopt?	1093	62,1%	668	37,9%	1761	100,0%

BSA-norm * Gestopt?

Crosstab

% within BSA-norm

		Gestopt?		Total
		nee	ja	
BSA-norm	0	79,8%	20,2%	100,0%
	30	83,3%	16,7%	100,0%
	37,5	86,5%	13,5%	100,0%
Total		83,3%	16,7%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3,628	2	,163
Likelihood Ratio	3,632	2	,163
Linear-by-Linear Association	3,621	1	,057
N of Valid Cases	1316		

BSA Yes/No * Gestopt?

Crosstab

% within BSA Yes/No

		Gestopt?		Total
		nee	ja	
BSA Yes/No	no	79,8%	20,2%	100,0%
	yes	84,0%	16,0%	100,0%
Total		83,3%	16,7%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2,311	1	,128		
Continuity Correction	2,022	1	,155		
Likelihood Ratio	2,220	1	,136		
Fisher's Exact Test				,140	,079
Linear-by-Linear Association	2,310	1	,129		
N of Valid Cases	1316				

BSA * Gestopt?

Crosstab

% within BSA

		Gestopt?		Total
		nee	ja	
BSA	Interrupted	6,7%	93,3%	100,0%
	Negative		100,0%	100,0%
	Aangehouden	35,5%	64,5%	100,0%
	Positive	94,0%	6,0%	100,0%
Total		84,0%	16,0%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	512,340	3	,000

Likelihood Ratio	391,067	3	,000
Linear-by-Linear Association	472,932	1	,000
N of Valid Cases	1093		

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
BSA-norm * Gestopt?	957	100,0%	0	0,0%	957	100,0%

BSA-norm * Gestopt? Crosstabulation

% within BSA-norm

		Gestopt?		Total
		nee	ja	
BSA-norm	30	95,8%	4,2%	100,0%
	37,5	96,5%	3,5%	100,0%
Total		95,9%	4,1%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,214	1	,644		
Continuity Correction	,068	1	,794		
Likelihood Ratio	,222	1	,638		
Fisher's Exact Test				,841	,410
Linear-by-Linear Association	,214	1	,644		
N of Valid Cases	957				

Means

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
ECTS in J2 * BSA	1152	100,0%	0	0,0%	1152	100,0%

MonthsCompletion * BSA	913	79,3%	239	20,7%	1152	100,0%
Gemiddeld cijfer * BSA	1150	99,8%	2	0,2%	1152	100,0%

Report

BSA		ECTS in J2	MonthsCompletion	Gemiddeld cijfer
Aangehouden	Mean	38,159	59,6457	6,5735
	N	69	37	69
	Std. Deviation	16,2760	20,01837	,21398
Positive	Mean	55,143	40,3956	6,9237
	N	1083	876	1081
	Std. Deviation	11,6052	10,30542	,47242
Total	Mean	54,126	41,1758	6,9027
	N	1152	913	1150
	Std. Deviation	12,5902	11,49505	,46841

NPar Tests

Mann-Whitney Test

Ranks

	BSA	N	Mean Rank	Sum of Ranks
ECTS in J2	Aangehouden	69	218,49	15075,50
	Positive	1083	599,31	649052,50
	Total	1152		
MonthsCompletion	Aangehouden	37	814,00	30118,00
	Positive	876	441,92	387123,00
	Total	913		

Test Statistics

	ECTS in J2	MonthsCompletion
Mann-Whitney U	12660,500	2997,000
Wilcoxon W	15075,500	387123,000
Z	-9,653	-8,423
Asymp. Sig. (2-tailed)	,000	,000

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
BSA * Gestopt?	952	82,6%	200	17,4%	1152	100,0%

BSA * Gestopt? Crosstabulation

% within BSA

		Gestopt?		Total
		nee	ja	
BSA	Aangehouden	69,1%	30,9%	100,0%
	Positive	98,0%	2,0%	100,0%
Total		96,3%	3,7%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	122,243	1	,000		
Continuity Correction	114,217	1	,000		
Likelihood Ratio	55,553	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	122,114	1	,000		
N of Valid Cases	952				

Means

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
ECTS in J2 * BSA	917	100,0%	0	0,0%	917	100,0%

Report

ECTS in J2

BSA	Mean	N	Std. Deviation
Aangehouden	46,803	38	11,4859
Positive	55,615	879	10,7043
Total	55,250	917	10,8741

NPar Tests

Mann-Whitney Test

Ranks

	BSA	N	Mean Rank	Sum of Ranks
	Aangehouden	38	221,01	8398,50
ECTS in J2	Positive	879	469,29	412504,50
	Total	917		

Test Statistics

	ECTS in J2
Mann-Whitney U	7657,500
Wilcoxon W	8398,500
Z	-5,963
Asymp. Sig. (2-tailed)	,000

Means

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Gemiddeld cijfer * BSA	1139	99,8%	2	0,2%	1141	100,0%

Report

Gemiddeld cijfer

BSA	Mean	N	Std. Deviation

Aangehouden	6,5688	58	,17792
Positive	6,9237	1081	,47242
Total	6,9056	1139	,46849

NPar Tests

Mann-Whitney Test

Ranks

	BSA	N	Mean Rank	Sum of Ranks
Gemiddeld cijfer	Aangehouden	58	296,91	17221,00
	Positive	1081	584,65	632009,00
	Total	1139		

Test Statistics

	Gemiddeld cijfer
Mann-Whitney U	15510,000
Wilcoxon W	17221,000
Z	-6,490
Asymp. Sig. (2-tailed)	,000