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The effect of international accreditations on students' decisions: Evidence from French business schools

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Abstract

This paper evaluates how three different international accreditations for business schools (AACSB, EQUIS and AMBA) affect student preferences, expressed via enrollment decisions. Focusing on the French context, we build a relative preference indicator to compare schools using data collected by a central clearinghouse that allocates students to schools. We observe that all three accreditations positively and significantly influence students, but that the impact of the AACSB accreditation is larger than the other two accreditations. Having an AACSB accreditation is equivalent to moving up four places in rankings by *L'étudiant* magazine, whereas the impact of having EQUIS or AMBA is similar to moving up two places. We also find a sizeable "triple crown" effect, meaning that the three accreditations tend to complement each other. Our results are robust to different ways of assessing potential self-selection into accreditation.

Keywords: business schools, accreditations, enrollment .

JEL codes: D12, I23, L15

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1 Introduction

For prospective university students, deciding where to study can be challenging. Students can rely on advice from trusted friends or teachers, or do campus tours. There are also countless websites and brochures comparing what schools have to offer.

Educational programs still have many characteristics of what are traditionally called "experience goods": goods whose characteristics cannot be ascertained before consumption. As a response to this information problem, various third-party quality disclosure mechanisms have emerged in the higher education context [Deming and Figlio, 2016]. Two market-based mechanisms aiming at certifying the reputation of schools are particularly influential: rankings and (student) ratings. Using a natural experiment from U.S. News and World Report College Rankings, Luca and Smith [2013] find that, on average, a one-rank improvement leads to a 1% increase in the number of applicants to a university. Using U.K. data, Gibbons et al. [2015] observe that a 10 percentage point improvement in the National Student Survey rating increases applications by 2.4%.

Certifications are a common market-based accountability mechanism in many sectors where experience goods are present, but are less common in higher education. The business school accreditation system is a notable exception, with three international accreditations: EQUIS, AACSB and AMBA. While the first two certify institutions, the third only certifies specific programs. Although their scope may differ, these certifications aim to recognize business schools that have a certain level of quality. In this paper, we examine whether these accreditations influence prospective students' enrollment decisions.

Traditionally, economists have used hedonic price regressions, pioneered by Rosen [1974], to infer the impact of a good or service's characteristics on consumer preferences. This approach hinges on various assumptions that make it unsuitable for the higher education context. For example, hedonic price regressions assume that prices are flexible, whereas tuition fees tend to be fixed, and markets are not always perfectly competitive. As a consequence, the higher education literature instead uses application or enrollment data. In cases where there are capacity constraints or when applying to college is costly (i.e. it takes time to complete various forms and/or there is an application fee), these institution-specific measures also have limitations. For example, prestigious institutions that improve will not necessarily receive more applications in response, as good (rather than great) students might anticipate a decrease in their chances of being accepted.

We address this challenge by using data from SIGEM,[1] a centralized admission system that allocates students to French business schools. After applying to a set of schools, students participate in a (partially) common entry examination, after which students who do sufficiently well are ranked by each school. Then, each student ranks the schools that ranked them from their most to their least preferred. As a final step, the SIGEM clearinghouse allocates students to schools using the Gale-Shapley deferred acceptance mechanism, which incentivizes students to truthfully reveal their preferred rank-order list. Unfortunately, we do not have access to individual lists. However, each year, SIGEM publishes, for each pair of business schools participating in the allocation system, the number of students who could have gone to school A or B and how many decided, through their individual lists, to rank school A higher than school B and vice versa. Based on this information, we compute an indicator that gives us a measure of revealed preferences for one school compared to another, from which we infer the impact of the three international accreditations.

Our analysis shows that international accreditations influence enrollment decisions, as all three accreditations have a positive and significant influence on enrollment decisions. Having the AACSB accreditation is equivalent to moving up four ranks in *L'étudiant* magazine, which ranks the top 40 schools in the country. Having EQUIS or AACSB accreditation is equivalent to moving up two spots. We also observe a "triple crown" effect, as having all the three accreditations also positively impacts students' decision where to enroll. Finally, we confirm that our results are robust to various specifications.

We make several contributions to the literature on third-party quality disclosure mechanisms. First, as mentioned, we measure the impact of the accreditation signal on student enrollment decisions using relative performance indicators that compare pairs of schools. This data from the centralized enrollment system enables a more robust measure of student preferences than previous studies. In a paper similar to our study, Elliott and Soo [2013] use data from *Which MBA Guide* to analyze the relationship between accreditations and the number of applications to MBA programs and find little impact.[2]

[1] *Système d'Intégration aux Grandes Ecoles de Management.*

[2] Grove and Hussey [2014] and Elliott and Soo [2016] also look at the impact of accredita-

Second, we are able to examine how different accreditations interact with one another. It is a priori unclear whether competition between accreditation bodies is welfare improving [Bouvard and Levy, 2017] and whether multiple accreditations considered collectively will further influence student decisions.

Third, we address endogeneity in a novel way, using two complementary approaches. First, as in Dragusanu and Nunn [2018], we look at the determinants of selection into accreditation and find no evidence that self-selection is an issue. Second, we take advantage of the timing of accreditation and student enrollment decisions. By assuming that the precise timing of accreditation is exogenous, i.e. schools that become accredited a few months before or after a student's decision tend to be similar, we look at whether obtaining the accreditation just after the enrollment decision has an impact on student preferences.

Finally, we also look at the longer-term impact of accreditations related to continuous procedural improvements claimed by international accreditation bodies.

Section 2 discusses the French business school context and the three international accreditation systems. The data and our empirical strategy are discussed in Section 3. Our main results are provided in Section 4 and various robustness checks are discussed in Section 5. Section 6 concludes.

2 Background

2.1 Business schools in France

Business schools emerged during the industrial revolution. The *Ecole Spéciale de Commerce et d'Industrie de Paris*, better known as ESCP, was established in 1819 and is generally recognized as the first French business school [Blanchard, 2015]. Initiated by members of the Paris Chamber of Commerce, the school aimed to address demand for skilled commercial dealers and managers by providing a combination of theoretical and practical business education [Kaplan, 2014]. Around the 19^{th} and early 20^{th} centuries, most French business schools started from close partnerships with local chambers of commerce.[3] This is in stark contrast with what is observed in other countries, particularly Anglo-Saxon ones, where business schools emerged from already existing universities.

tions, but examine their impact on wages of graduates.

[3] The ESSEC, which was founded in 1907, is an exception as it was initiated by the clergy.

In France, business schools are independent private not-for-profit organizations and can take advantage of being under the umbrella of a chamber of commerce.[4] This ambiguous status arguably provided favorable conditions for schools to operate in. France has more institutions than any other country in the most recent European Business School Rankings published by the Financial Times, with 22 of the 90 institutions.

There are several potential explanations for this success. First, since French business schools are independent from a university, they are not expected to cross-subsidize other academic programs or expensive research. Their relatively small size also helps to avoid sometimes cumbersome administrative processes. Second, even though schools have limited direct access to public funding from the Ministry of National Education, Higher Education and Research, they can indirectly receive public funds via a chamber of commerce. Their wide business networks also facilitate access to revenues from the *taxe d'apprentissage*, a tax on businesses designed to support job training and apprenticeship programs. This tax comprises up to one-fifth of business school revenues [Menger et al., 2015]. In addition, schools can take advantage of funding from local, departmental and regional governments and funding agencies. One key advantage of these funding sources is that they come with limited strings attached. Business schools can freely set their tuition fees and select the students they enroll, which is a rarity in the French higher education landscape. These tuition revenues are also schools' main source of revenues, and have become increasingly important in recent years as the role played by chambers of commerce has decreased and the importance of tuition fees as a revenue source has tended to increase.

French business schools typically provide three programs: a bachelor's degree, an executive MBA and a *Grande École* (master's in management). The latter, which is unique to France, tends to be the most well-known program. This paper focuses on this three-year program, which leads to the equivalent of a master's degree. The most prestigious to enroll in this program, which does not require professional experience, is via an examination.[5] Students prepare for the examination by spending two years in a non-degree-granting school,

[4] Very recently, foreign equity funds have also started to invest in existing schools [Delpont, 2019].

[5] The other part of the students enroll via a parallel examination, which is arguably less prestigious, and places more emphasize on a student's personal background. This process targets students who already have a bachelor's degree.

known as *classe préparatoire aux Grandes Écoles*. The examination almost exclusively targets French students.

As our main data source relies on data from this entrance procedure, we will describe the student allocation process [Menger and Marchika, 2014] in more detail. One key aspect is that while schools can individually recruit students, some aspects of the technology are centralized. Students in a *classe préparatoire aux Grandes Écoles* who want to enroll in a business school for September can sign up for the selection process no later than early January of the same year. On average, applicants apply to 12 schools. Centralized written exams are held in April and May. Students are notified in mid-June whether they have advanced to a decentralized oral exam, which takes place in each school at the end of June or beginning of July. Following the oral exam, students receive an admission rank from each institution that is willing to accept them.

Since 2000, the final step of assigning students to schools has been done via a centralized clearinghouse named SIGEM, in which most schools participate. Students ordinally rank schools that they received an admission rank from. Students are not charged for ranking schools, and there are no limits to the number of schools an individual can rank. The centralized school allocation algorithm then works as follows. Students are assigned to their first choice of school if they rank sufficiently high in the school examination ranking compared to the number of slots available. Otherwise, they can be assigned to their second choice, knowing that students who have already been assigned to a school are removed from the system. If the student is not ranked high enough by their second-choice school relative to the number of seats available, the algorithm repeats the process for their third choice and so on until each school's seats are filled. This student allocation mechanism is known as the Gale-Shapley Deferred Acceptance mechanism in its school-proposing version [Gale and Shapley, 1962]. An attractive feature of this algorithm is that it incentivizes students to truthfully reveal their rank-ordered preferences [Iehle and Jacqmin, 2021]. SIGEM guidelines also explicitly state that students should truthfully reveal their preferences in ordering schools.

2.2 Accreditations

Higher education has properties associated with both experience and credence goods. Because of this, prospective students cannot easily assess the characteristics of educational programs via search or experience. These information asymmetries create a demand for mechanisms to disclose and certify information that can be verified by a third party [Dranove and Jin, 2010]. Voluntary rather than government-enforced mandatory disclosure systems are influential in the business school sector, as voluntary measures rely less directly on public funding and function well in an international market.[6]

Three main international accreditation systems fulfill the role of a private third-party certifier: AACSB, EQUIS and AMBA. The Association to Advance Collegiate Schools of Business was founded in 1916 primarily to provide accreditation to US business schools. According to its mission, AACSB aims to "foster engagement, accelerate innovation, and amplify impact in business education." The EQUIS accreditation was created by the European Foundation for Management Development (EFMD) and "ensures a rigorous quality control, benchmarking your school against international standards in terms of governance, programmes, students, faculty, research, internationalisation, ethics, responsibility and sustainability, as well as corporate engagement." Finally, the AMBA accreditation has been administered by the UK-based Association of MBAs since 1967.

The procedure to become accredited is similar for each accreditation [Cret, 2011]. After members of the accreditation body determine that a school is eligible, the institution completes a self-evaluation of the extent to which it is aligned with the guidelines and pre-defined standards for the accreditation. Then, accreditors conduct an on-site peer-review visit, making recommendations for improvement and providing a decision on accreditation.[7]

Accreditation bodies differ in several ways. First, while EQUIS and AACSB certify schools, AMBA only certifies a specific program. Historically, AMBA focused on executive MBAs, but the association also accredits master's in business management programs such as the programs we focus on. Assessment criteria tend to differ between the programs. Some criteria are absolute and

[6]There is also a national accreditation system set by the Ministry of National Education, Higher Education and Research and commissioned by the *Commission pour l'Evaluation des Formations et Diplômes de Gestion*. This accreditation is provided for a one- to six-year period. In our sample, most schools have this accreditation (only a few schools do not have it during early years of our observations). In addition, this accreditation is often seen as less prestigious than other accreditations. In Section 5.3, we observe that having this accreditation has a positive impact on student preferences and that this influence does not crowd out the impact of international accreditations.

[7]We only observe when a school becomes accredited, and not when a school has unsuccessfully attempted to receive accreditation.

can be objectively assessed. For example, to receive the EQUIS accreditation, there must be at least 25 full-time-equivalent faculty members [EFMD, 2018]. Participating faculty members of a school accredited by AACSB should teach at least 75% of the school's courses [AACSB, 2018]. For AMBA, an accredited MBA program should have a cohort composed of students with "a minimum of three years appropriate and relevant postgraduate experience upon entry" [AMBA, 2016]. However, most of the eligibility requirements are described in vague terms that lack specific targets, so it is subjective whether an institution or program fulfills them. These requirements tend to address quality standards as well as procedures to be implemented.

One goal of accreditations is also to evaluate whether a school's programs are aligned with its mission. An AACSB-accredited business school must produce "intellectual contributions that have had an impact on the theory, practice and/or teaching of business consistent with its mission" [AACSB, 2018]. The EQUIS accreditation mandates that a business school "should have an effective and integrated organisation for the management of its activities based on appropriate processes, with a significant degree of control over its own destiny" [EFMD, 2018]. The accreditation process takes between two and three years for EQUIS, and four to five years for AACSB. The accreditation is valid for a period of three or five years, after which the school can seek re-accreditation.

Schools face costs in becoming accredited. Accreditation bodies follow an issuer-pay model, and charge various fees (such as eligibility, application, review or accreditation fees as well as reimbursing the peer-review team's expenses). As of 2019, the fees for EQUIS are €60,000, and the fees for AACSB and AMBA are €30,000. Accreditation processes are also labor-intensive and require skilled administrative staff to manage. Academic staff also have to be proactive during accreditation, taking time away from activities like research and teaching. Finally, an institution may need to change or adopt policies in order to fulfill some of the required standards. Overall, these costs are likely to be substantial. However, providing a precise cost estimate is not feasible, as costs are likely to depend on a school's governance structure and its managerial team.

3 Data and empirical strategy

Our sample contains information on 23 French business schools from 2004 to 2019. The sample has been determined by the availability of the SIGEM matrices that we will describe in this section. We rely on the archived websites of each of the three accreditation bodies for data about accreditations. We also use data about fees from *L'étudiant*, a French magazine about higher education, and also use the magazine's influential annual ranking of business schools.

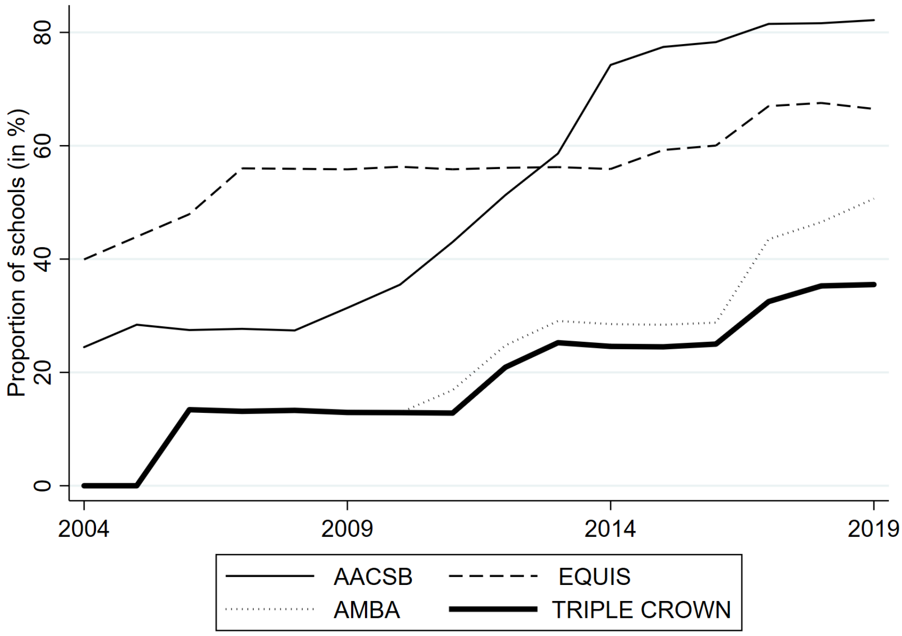
3.1 Accreditations

The main explanatory variable is an indicator of whether a business school is accredited through EQUIS, AACSB or AMBA. Figure 1 displays the proportion of business schools that are accredited over the duration of our study. We see that the proportion of accredited schools has been increasing for all three accreditations, but at a faster rate for AACSB and AMBA, which were less represented in the early stages of our analysis. This contrasts with the proportion of schools that are labelled “triple crown", the term commonly use to refer to schools with all three accreditations.[8] We observe a clear tendency for schools to accumulate all three accreditations over the course of our study.

Table A.1 in the appendix shows the evolution of business school accreditations between 2004 and 2019 for our sample. By 2019, many schools had obtained at least one of the three accreditations. However, as shown in Figure 1, this is the result of an increasing trend. In 2004, only seven schools were accredited by AACSB, 11 schools were accredited by EQUIS and none had an AMBA accreditation for their master's in management program. Schools tend to start with an EQUIS accreditation, then obtain an AACSB accreditation, followed closely by AMBA.

[8]Note that our “triple crown" definition differs from the conventional one, as we only consider schools that receive the AMBA label for their master's in business management program. However, if we instead consider a school to be accredited by AMBA if it has at least one program with the accreditation (e.g. if the executive MBA program is accredited even if the master's in business management program is not), this does not change our key results.

Figure 1: Proportion of schools with an accreditation



3.2 Student preferences

Unfortunately, an ordered listing of individual student preferences for schools is not available. However, after the final student allocation decision, SIGEM publicizes a matrix of cross-withdrawals. Table 1 provides an excerpt of the 2016 matrix for three schools.[9] In this square matrix, each school is represented by a row and a column ranked in the same order. The main diagonal shows the number of students enrolling at an institution. For example, in 2016, 371 students enrolled at HEC via the SIGEM allocation mechanism and 385 enrolled at ESSEC. The element of the row ESSEC and the column HEC is 5, and represents the number of students who could have studied in both schools but decided to rank ESSEC higher on their preference list than HEC.[10] The element of row HEC and column ESSEC is 267, and represents the number of students who could have studied in both schools but decided to rank

[9]Complete information for all schools using SIGEM in 2016 is presented in Figure A.1 in the appendix.

[10]Note that when students provide their preferences, they do not know which school they will ultimately be enrolled in. This information is only known after the allocation algorithm is implemented. However, as they know the cut-off ranks from previous years for each school, they can make an educated guess about their likelihood of being enrolled, as cut-offs tend to be stable from year to year. Note in addition that when computing pairwise comparisons for the matrix, it is not considered whether the student rather went to a third school.

HEC higher. Following the terminology used by SIGEM, this shows that, from the 272 “matches” played between the two schools, HEC won 267 times and ESSEC only won five times.

Table 1: Excerpt of the 2016 SIGEM’s matrix of cross-withdrawals

		School j		
	2016	HEC	ESSEC	ESCP Europe
School i	HEC	371	267	311
	ESSEC	5	385	205
	ESCP Europe	-	5	355

Based on aggregate choices made by students via the central clearinghouse SIGEM, we derive a relative preference indicator that corresponds to the percentage of the so-called "matches won" by one school against another. A match corresponds to a choice made by one student between two schools. For example, in 2016, HEC won 98.6% of its matches against ESSEC.

This indicator is calculated for each pair of schools for every year. The data set includes 351 pairs of schools, for which we have almost 4,500 pair-year observations. Thus, matches between the same pair of schools can be observed multiple times across different years. The percentage of matches won summarizes student preferences for one school over another, and is the dependent variable in our econometric estimations.[11]

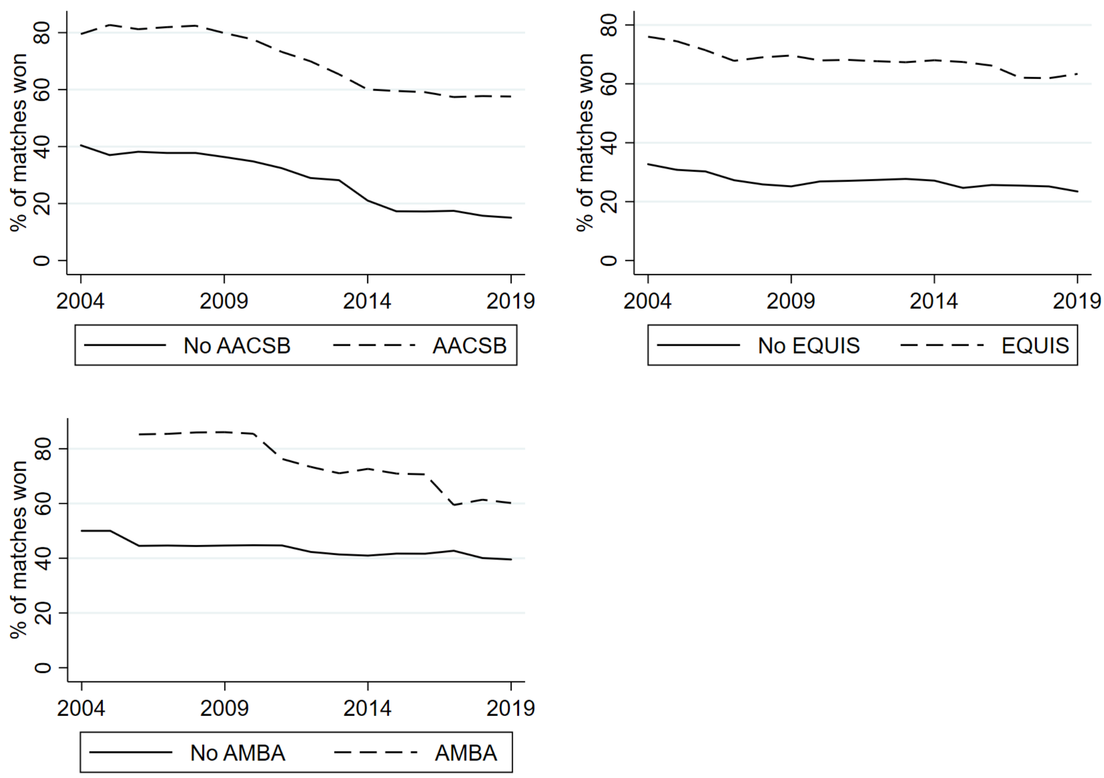
Figure 2 shows the percentage of matches won by schools holding a particular accreditation. We see that the probability of winning matches is higher when a school is accredited.[12] Interestingly, we see that the influence of each accreditation slowly decreases over time. This may be due to the increasing number of schools that are accredited.

Figure 3 plots our dependent variable of the percentage of matches won, aggregated for all schools, across event time, where the event is the year in which a school becomes accredited for the first time. We consider all three accreditations to gather enough data on these events. We see that once a school becomes accredited, its percentage of matches won immediately increases significantly. Although Figure 3 is striking, we cannot conclude that accreditation

[11]These pairwise indicators, and their evolution, are also commonly used by schools as comparative performance indicators to guide their decisions. They also influence media discussions about the evolution of the market, and are a hot topic of discussion among prospective and current students.

[12]Since no master’s in business management program in our sample has the AMBA label in 2004 and 2005, there is no % of won matches for AMBA in these years.

Figure 2: Proportion of matches won by accreditation



causes the increase in the percentage of matches won, since there may be selection bias or cofounding factors. Our empirical strategy and robustness tests will address these issues.

3.3 Empirical strategy

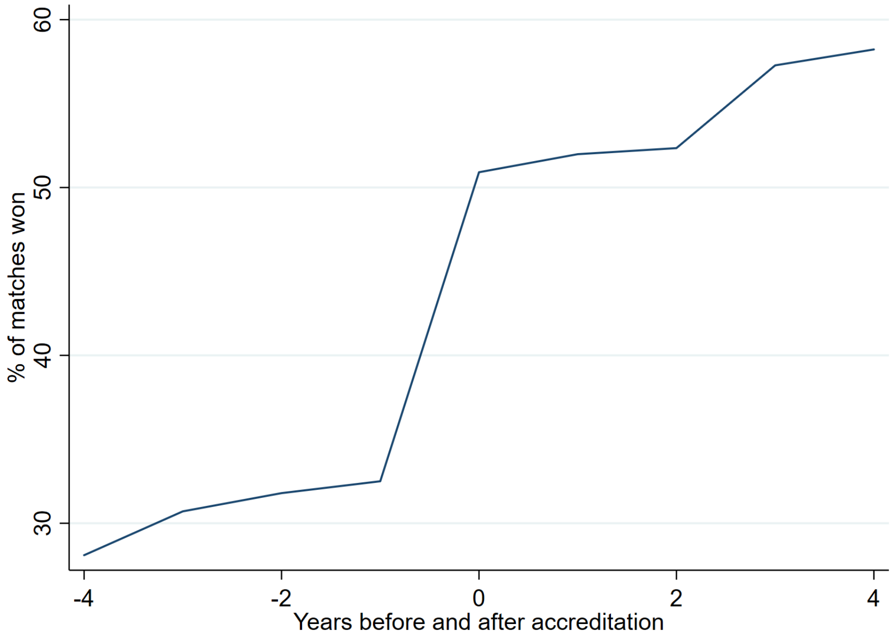
We look at the effect of accreditation on prospective students' choices using the variables described previously. Each observation corresponds to a pair of schools in a given year. Specifically, we estimate the following equation:

$$y_{ijt} = \beta Accr_{it} + \delta X_{it} + \gamma M_{jt} + \alpha_{ij} + \alpha_t + \varepsilon_{ijt} \qquad (1)$$

where i compares the business school of interest to school j based on student choices, and t denotes the year of observation.

The dependent variable y_{ijt} is the indicator of student preferences, i.e. the percentage of students who are accepted by both schools i and j and decide to go to i by ranking school i higher in their list. $Accr_{i,t}$ is an indicator variable

Figure 3: Proportion of matches won before and after accreditation



that equals one if a business school holds an active accreditation in year t. Depending on the specification, $Accr_{it}$ can either indicate that a school has at least one of the three accreditations, or that it holds a specific accreditation. $X_{i,t}$ are a series of contemporaneous time-varying control variables related to school i, and $M_{j,t}$ are the same control variables related to school j in year t. α_{ij} is a pair fixed effect to control for time-invariant pair characteristics and α_t is a year fixed effect. $\varepsilon_{i,j,t}$ is an idiosyncratic error term.

For both $X_{i,t}$ and $M_{j,t}$, we consider three confounding factors to limit omitted variable bias. First, in each specification, we control for the log of student fees. In contrast with other French higher education institutions, business schools are free to set their own tuition fees, which tend to vary from one school to the next. Over the 15 years of our study, fees almost doubled on average, reaching an average of close to €12,000 per year by 2019. Second, rankings are a key indicator of quality. There are several rankings available, but *L'étudiant* magazine's are arguably the most influential.[13] To facilitate the

[13]Based on the annual cross-withdrawals tables, an annual ranking is also computed using a similar method to Avery et al. [2013], where information about overlapping student enrollment decisions is obtained through a survey. A key property of this method is that it is non-manipulable. Using this ranking measure (lagged by one year to reflect the most recent ranking available at the time that students make their decisions) does not alter our key findings. However, it leads to endogeneity issues since it is constructed from student choices,

interpretation of our coefficients, we drop the rank of school i from the rank of the lowest ranked school each year, so that a higher ranking is better.[14] Finally, we also control for school mergers during our period of observation. Four schools have been created from mergers in the last 15 years: SKEMA, NEOMA, KEDGE and INSEEC. When two schools merge, we treat the new school as a continuation of each of the two original schools. To account for this approach, we include a "merged" dummy from the time of the merger. Note that both fees and rankings can be endogenous to obtaining an accreditation, but their inclusion does not affect our key results. We also include the accreditation status and the confounding factors of school j in all our regressions.

To account for the fact that the dependent variable is a percentage that can only take values between 0 and 1, equation (1) is estimated by a fractional outcome regression model (see Papke and Wooldridge [1996] and Papke and Wooldridge [2008]). Fractional regression estimators fit models on continuous 0 to 1 data using a probit or logit approach that ensures the reduction of the dependent variable is between 0 and 1. We use a logit estimation and present average marginal effects to facilitate the interpretation of results.

Since our dependent variable is the percentage of students who prefer school i, for a pair of schools i and j, the value of this variable is 1 minus the value for the pair of schools j and i. To assess covariate effects from schools i and j at the same time, we randomly drop one observation for each pair of schools.[15] To control for the correlation of errors and regressors within pairs, we estimate the model with standard errors clustered at the school-pair level. This allows us to account for potential dependence between observations, and ensures the analysis is also robust to heteroscedasticity. In addition, we account for the dyadic nature of our data by estimating the model with a dyadic-robust variance estimator. The results are presented in Section 5.

which are also the basis for our dependent variable.

[14] Average values of the dependent variable as well as the fees and rankings are presented in the appendix.

[15] This is a common practice in sports economics; see for example Robst et al. [2011] and Pitts [2016]. [Catalini et al., 2020] uses a similar data selection approach in a recent study of scientific collaboration. As a robustness check, we estimate the same specification when we keep the second observation for the pair, and obtain similar results (see below).

4 Results

4.1 Effect of accreditation

Table 2 presents a series of specifications related to equation (1) and reports average marginal effects for each explanatory variable. The first column shows the average effect of being accredited (regardless of the specific accreditation). We control for school *i* and *j* covariates and for whether school *j* is also accredited. The effect is positive, but surprisingly does not appear to be significant at the 10% level. However, as explained in Section 2, each accreditation is unique, so the impact may depend on the particular accreditation, and/or the number of accreditations a school holds.

Thus, in column (2) to (4), we look at the effects of each accreditation separately. Being accredited by AACSB, EQUIS or AMBA appears to be positively and significantly correlated with students choosing to go to the school.[16] Having an AACSB (or EQUIS or AMBA) accreditation increases a school's matches won by 10.6 percentage points (or 3.7 percentage points or 3.6 percentage points, respectively). Using the coefficient of ranking, we find this is similar to the impact of moving up four spots in the *L'étudiant* rankings for the AACSB accreditation, or 1.5 spots for EQUIS or AMBA. The significant effects of being accredited are confirmed by the negative and significant effect of the three accreditations obtained by school *j* in the matches.

In the fifth column of Table 2, we estimate the same equation but consider all three accreditations together as explanatory variables. All three labels are still significant at a similar level to what we observe when they are considered separately, although the coefficient of EQUIS is slightly lower. In addition, we observe that program fees are not an important driver of choice, whereas a school's ranking is. Schools that merge are less attractive after the merger.

[16] Note that the EQUIS accreditation can be granted for a period of three or five years. The three-year accreditation is less prestigious than the five-year, as it requires annual monitoring by the accreditor, whereas monitoring for the five-year accreditation only takes place once halfway through the accreditation. Additional tests show that the five-year accreditation has a greater impact on student choices than the three-year accreditation; results are available upon request.

Table 2: Effect of accreditation

	(1)	(2)	(3)	(4)	(5)
Accreditation	0.009				
	(0.011)				
AACSB		0.106***			0.102***
		(0.010)			(0.010)
EQUIS			0.037**		0.028**
			(0.015)		(0.014)
AMBA				0.036***	0.035***
				(0.012)	(0.012)
Log fees	0.016	0.011	0.031*	0.015	-0.003
	(0.020)	(0.018)	(0.017)	(0.017)	(0.018)
Merged	-0.019	-0.016	-0.007	-0.016	-0.024**
	(0.012)	(0.011)	(0.012)	(0.012)	(0.011)
Ranking	0.028***	0.024***	0.026***	0.026***	0.023***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Accreditation_j	-0.011				
	(0.011)				
AACSBd_j		-0.075***	-0.086***	-0.081***	-0.076***
		(0.011)	(0.011)	(0.011)	(0.011)
EQUISd_j		-0.067***	-0.040**	-0.057***	-0.053***
		(0.015)	(0.018)	(0.016)	(0.017)
AMBA_j		-0.046***	-0.050***	-0.032**	-0.028**
		(0.015)	(0.016)	(0.013)	(0.013)
Log_fees_j	-0.004	0.002	0.025	0.003	-0.011
	(0.018)	(0.016)	(0.018)	(0.017)	(0.016)
Merged_j	0.033***	0.030***	0.053***	0.045***	0.027**
	(0.012)	(0.012)	(0.012)	(0.012)	(0.011)
Ranking_j	-0.028***	-0.023***	-0.024***	-0.024***	-0.023***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
N	4505	4505	4505	4505	4505
Pseudo R^2	0.582	0.597	0.591	0.591	0.598

Note: The table presents average marginal effects. Robust standard errors are in parentheses. All specifications includes school and year fixed effects. * $p < 0.01$, ** $p < 0.05$, *** $p < 0.01$.

4.2 Complementarity and substitutability

In Section 3, we observed a trend of schools pursuing all three accreditations (the so-called "triple crown"). In this subsection, we investigate whether there is a cumulative effect of having multiple accreditations, and whether this effect is linear. Another important question is whether the different accreditations are complements or substitutes.

The first two columns of Table 3 present results for the effect of the number of accreditations as well as the non-linear effect of having one, two or three accreditations. For ease of exposition, we only present the results for the accreditation variables; other controls are presented in the appendix. In column (1), we observe a positive and significant effect when schools add accreditations. Having an additional accreditation increases the proportion of students choosing a school by almost 6 percentage points; the effect of adding a second accreditation is larger than obtaining an initial accreditation, and the effect of adding a third accreditation is larger than adding a second. Obtaining the third accreditation (i.e. becoming a "triple crown" school) increases a school's proportion of won matches by 15 percentage points.

It may be that particular combinations of accreditations are better than others. Put another way, some accreditations can be complements (substitutes), such that having one accreditation increases (decreases) the marginal benefit of obtaining another. A proper complementarity or substitutability test requires a testing framework that considers the complete set of accreditations. In the literature, it is common to estimate pair-wise interaction effects in addition to the "triple crown" term when there are three options. Thus, we estimate y_{ijt} as a function of possible combinations of three accreditations (using the same covariates as in equation 1):

$$\begin{aligned} y_{ijt} =& \beta_1 AACSB_{it} + \beta_2 EQUIS_{it} + \beta_3 AMBA_{it} + \beta_{12} AACSB_{it} * EQUIS_{it} \\ &+ \beta_{13} AACSB_{it} * AMBA_{it} + \beta_{23} EQUIS_{it} * AMBA_{it} \\ &+ \delta X_{it} + \gamma M_{jt} + \alpha_{ij} + \alpha_t + \varepsilon_{ijt} \end{aligned} \tag{2}$$

Unfortunately, to avoid collinearity issues, we cannot include the triple crown term because all schools in our sample that have EQUIS and AMBA are also triple crown schools. Each pair-wise interaction can be interpreted as an indicator of complementarity/substitutability. In column (3) of Table 3, we see that having only AACSB accreditation has a positive and significant impact on the percentage of won matches. The interaction term between AACSB and EQUIS is also positive and significant, indicating complementarity between these two accreditations. Surprisingly, only having the EQUIS accreditation appears to have a negative effect. EQUIS and AMBA appear to be substitutes, as the interaction coefficient between these accreditations is negative and significant. Unfortunately, since we cannot examine the impact of the additional cross-term for having all three accreditations, our approach is prone to omitted variable bias that affects all coefficients. Nevertheless, these results suggest that students perceive differences between the accreditations, such that obtaining additional accreditations is not redundant.

Table 3: Interaction between accreditations

	(1)	(2)	(3)
# of accreditations	0.064***		
	(0.007)		
1 accreditation		-0.001	
		(0.011)	
2 accreditations		0.130***	
		(0.015)	
3 accreditations		0.152***	
		(0.021)	
AACSB			0.024*
			(0.014)
EQUIS			-0.034**
			(0.015)
AMBA			0.035
			(0.023)
AACSB*EQUIS			0.136***
			(0.016)
AACSB*AMBA			0.036
			(0.028)
EQUIS*AMBA			-0.057**
			(0.026)
N	4505	4505	4505
Pseudo R^2	0.597	0.601	0.602

Note: The table presents average marginal effects. Robust standard errors are in parentheses. All specifications include schools and year fixed effects as well as controls from Table 2. * $p < 0.01$, ** $p < 0.05$, *** $p < 0.01$.

4.3 Dynamic effects

It is a priori unclear whether the impact of accreditations is constant over time. On the one hand, accreditations signal more than just program and institutional characteristics to students. Accreditation bodies also claim to promote good managerial practices and production processes [Levine and Toffel, 2010]. If this is true, having an accreditation should improve a school's quality over time. On the other hand, schools are likely to heavily advertise receiving a new accreditation. This signalling effect of accreditations should be somewhat short-lived, as the advertising campaigns likely complement the accreditation itself in attracting new students. To evaluate whether this is the case, Table 4 examines whether the effect of accreditation differs depending on the time elapsed since the accreditation was obtained. To consider a potential non-linear effect, we consider both a linear and a quadratic term for the duration since the accreditation was obtained.

In the three columns of Table 4, we look at the effect of each accreditation separately. These results confirm the idea that accreditations have a non-linear effect over time. An accreditation's effect on student preferences peaks three to six years after accreditation (depending on the particular accreditation). Examining all our duration variables simultaneously leads to similar results.[17] These results suggest that accreditations do not only signal school and program characteristics, but also influence the way schools operate, although the impact appears to diminish over time.

Table 4: Dynamic effect of accreditation

	(1)	(2)	(3)
# of years AACSB	0.035***		
	(0.003)		
# of years $AACSB^2$	-0.006***		
	(0.001)		
# of years EQUIS		0.020***	
		(0.004)	
# of years $EQUIS^2$		-0.003**	
		(0.002)	
# of years AMBA			0.013***
			(0.003)
# of years $AMBA^2$			-0.007***
			(0.002)
N	4505	4505	4505
Pseudo R^2	0.613	0.601	0.592

Note: The table presents average marginal effects. Robust standard errors are in parentheses. All specifications include school and year fixed effects as well as controls from Table 2. * $p < 0.01$, ** $p < 0.05$, *** $p < 0.01$.

[17] For the sake of clarity, we do not present specifications with all accreditation variables together. These results are available upon request.

4.4 Alternative dependent variables

We have shown that accreditation affects student enrollment decisions. In this subsection, we examine whether accreditation also affects other student decisions, by estimating the effect of the three accreditations on a series of variables related to schools' student populations and characteristics.

While our previous unit of analysis was school-year pairs, these dependent variables are only two-dimensional as they vary across years and schools. For this purpose, we estimate a school panel data model, controlling for fixed school characteristics and differences in accreditations. In particular, we estimate the following equation:

$$y_{i,t} = \beta_1 AACSB_{i,t} + \beta_2 EQUIS_{i,t} + \beta_3 AMBA_{i,t} + \gamma X_{i,t} + \alpha_i + \alpha_t + \varepsilon_{i,t} \quad (3)$$

where i indexes a business school and t denotes the year of observation.

$y_{i,t}$ can represent different variables. First, we look at the proportion of foreign students (obtained from *L'étudiant* magazine), using the three different accreditations as explanatory variables.[18] $X_{i,t}$ are a series of contemporaneous control variables.[19] α_i and α_t denote school fixed effects and year fixed effects, respectively.

Table 5 presents the results. We observe that the EQUIS accreditation has a positive and significant impact on a school's proportion of international students. This is consistent with our expectations, as EQUIS places a heavy emphasis on internalization. Next, we examine whether having an accreditation has an impact on student *application* decisions. While we have shown that accreditations affect *enrollment* decisions, Table 5 shows that they have a negligible impact on applications. This result implies that the role of accreditations may depend on the context.[20] This result is consistent with previous findings by Elliott and Soo [2013], who find that accreditations have little effect on applications.

We also look at the so-called capacity rate of schools, which is calculated by dividing the number of students who choose to enroll at a school by the total number of available places at the school. Capacity rate is an important

[18]We obtain similar results when conducting separate regressions for each accreditation; results are available upon request.

[19]Consistent with our earlier approach, these include the log of tuition fees, the ranking of the school and a dummy variable equal to one if a school has merged with another school.

[20]As of 2019, students applied to 12 schools on average, and are able to rank four of them.

indicator for schools' planning, and is frequently discussed in the press when the SIGEM results are published. We observe that AACSB and AMBA have a positive and significant effect on the capacity rate (EQUIS also has a positive effect, but it is not statistically significant).

The last column presents an additional specification in which the dependent variable is the "domination score": the average percentage of matches won by a school. The domination score is used by SIGEM to rank schools as explained above, and provides an additional robustness test of the results we obtained in Table 2. The results confirm our previous findings, as AACSB and EQUIS have both a positive and significant impact.

Table 5: Alternative dependent variables

	% international students	Applications	Capacity rate	Domination score
AACSB accredited	-0.047	191.964	8.419***	80.838***
	(0.318)	(135.817)	(2.440)	(15.870)
Equis accredited	0.545**	-111.231	1.415	45.667*
	(0.244)	(197.095)	(3.980)	(25.779)
AMBAPGEd	0.144	190.146	9.485***	-14.892
	(0.257)	(148.892)	(2.715)	(17.545)
Log fees	-2.213*	212.971	10.463**	-46.537
	(1.253)	(273.156)	(4.945)	(32.237)
Merged	0.048	108.084	-7.784***	20.072
	(0.463)	(152.407)	(2.776)	(18.018)
classementinv	0.011	40.614***	1.043***	17.230***
	(0.016)	(12.510)	(0.229)	(1.516)
Constant	20.154*	1604.210	-25.524	827.454***
	(11.529)	(2479.189)	(44.892)	(293.950)
N	104	419	419	409
R^2	0.491	0.908	0.686	0.979

Note: Robust standard errors are in parentheses. All specifications include schools and year fixed effects. * $p < 0.01$, ** $p < 0.05$, *** $p < 0.01$.

5 Robustness tests and further results

Our data and estimation strategy raise questions regarding self-selection, timing of accreditation, the sample considered and econometric approach. In this section, we examine the robustness of our estimates to various alternative specifications.

5.1 Selection into accreditation

One important concern is the possibility of selection bias in accreditation. For example, a school's characteristics may influence its decision to become accredited. We would then face an omitted variable bias in our estimations and the results presented above would not be reliable.

We assess the importance and nature of selection by checking whether time-varying school characteristics predict the onset of accreditation. That is, we examine if there are significant changes in a school's characteristics just prior to the onset of accreditation. To do so, we follow Dragusanu and Nunn [2018] and estimate the following equation at the school level, where the dependent variable is an indicator variable for the first year of accreditation:

$$F_{i,t} = \alpha_i + \alpha_t + \beta_1 X_{i,t-1} + \varepsilon_{i,t} \tag{4}$$

where i indexes a school and t indexes a year. $F_{i,t}$ is an indicator variable that equals one if period t is the year that school i first becomes accredited. α_i and α_t denote school fixed effects and year fixed effects. The vector $X_{i,t-1}$ denotes a set of observable characteristics measured one year before accreditation that may predict whether a school pursues accreditation, including number of professors, number of foreign professors, number of international partnerships, number of scientific publications by scholars in highly ranked journals[21] and student fees. This helps us check whether we observe significant changes just prior to certification.

Table 6 reports the results. Panels A, B and C report the coefficients when the dependent variable is being accredited by AACSB, EQUIS and AMBA respectively. For the three different labels, we find no significant evidence of a positive relationship between the explanatory variables and the onset of accreditation. All reported coefficients are rather small and are not statistically different from zero. These results suggest that self-selection is a minor issue in our analysis.

[21] This data is obtained from *L'étudiant* magazine.

Table 6: Determinants of accreditations

	Characteristics for independent variable:				
	# of prof./100	# of foreign prof.	# international partnerships/100	Publications	Fees
	(1)	(2)	(3)	(4)	(5)
	Panel A: AACSB				
$X_{i,t-1}$	0.0128	0.0264	0.0005	0.0008	-0.0213
	(0.0652)	(0.1064)	(0.0042)	(0.0009)	(0.0316)
N	278	415	204	207	612
R^2	0.093	0.052	0.025	0.025	0.043
	Panel B: EQUIS				
$X_{i,t-1}$	-0.0459	-0.1031	-0.0213	-0.0007	-0.0222
	(0.0338)	(0.1028)	(0.0324)	(0.0014)	(0.0259)
N	278	415	204	207	612
R^2	0.022	0.023	0.021	0.032	0.028
	Panel C: AMBA				
$X_{i,t-1}$	-0.0339	-0.2332	0.0980	-0.0056	-0.0184
	(0.0458)	(0.1932)	(0.1215)	(0.0044)	(0.0259)
N	278	415	204	207	612
R^2	0.054	0.049	0.078	0.069	0.034

Note: Robust standard errors are in parentheses. All specifications include school and year fixed effects. The dependent variable is $F_{i,t}$, which equals one if a school first becomes accredited in period t. * $p < 0.01$, ** $p < 0.05$, *** $p < 0.01$.

5.2 Late accreditation

An important feature of France's centralized admission process is that students' final enrollment decisions take place simultaneously. Students have less than 30 hours to rank the schools that have ranked them before this last step of this two-sided matching procedure, as discussed in Section 2. This decision takes place each year at the same time (the start of July). Similarly, schools have little influence over the specific date that their accreditation is announced. Usually, it follows a board meeting of the entity responsible for the accreditation. Finally, schools are not supposed to advertise to students that they are likely to be accredited soon.[22] Hence, schools being accredited shortly before or after the final admission step should be similar, except that those accredited right before can highlight their accreditation to prospective students.[23] Thus, these two groups of schools provide an ideal natural exper-

[22]Hansmann [1980] argue that this kind of unethical behavior is unlikely from a not-for-profit institution due to the absence of residual claimants.

[23]We consider some school characteristics (fees and rankings) and test for differences in the two samples (using t-tests). We do not observe significant differences between those schools

iment on the effect of accreditation. On average, we observe that "late accreditations," defined as receiving accreditation up to four months after July, from August 1 to November 30, represent almost 20% of new accreditations.

As an additional robustness check, we exploit the exogenous discontinuity created by the timing of accreditation and enrollment to further test the signalling effect of accreditations. We estimate an additional specification that considers the effect of being accredited just before or just after the last step of the enrollment process. We select all schools that have not been accredited at the time of enrollment and estimate the effect of accreditation in the year they obtain it.[24]

Table 7 presents the results. We estimate one regression for each accreditation. In each specification, we control for the same covariates as in Table 2. The independent variables of interest are whether a school becomes accredited in the current year and whether it happens just before or just after enrollment decisions. We call these additional variables "early" and "late" accreditation, respectively. The results in Table 7 confirm our expectations. There is no significant effect of being accredited shortly after the enrollment decision. On the contrary, being accredited by AACSB and EQUIS shortly before the enrollment decision has a strong and positive effect on student preferences. This implies that having an accreditation matters, rather than having the characteristics of an accredited school. This further confirms the signalling effect of these two accreditations.

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accredited shortly before the final admission step and those accredited shortly after.

[24]Due to data availability, we are not able to evaluate the impact of the AMBA accreditation. Since AMBA certifies programs rather than an entire school, and schools tend to have the accreditation for several programs at different points in time, it is complicated to precisely determine when particular programs have been accredited.

Table 7: Effect of accreditation timing

	(1)	(2)
AACSB_early	0.088***	
	(0.014)	
AACSB late	0.016	
	(0.017)	
EQUIS_early		0.044**
		(0.022)
EQUIS late		0.012
		(0.015)
N	2201	1970
Pseudo R^2	0.543	0.481

Note: The table presents average marginal effects. Robust standard errors are in parentheses. All specifications include school and year fixed effects as well as controls from Table 2. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

5.3 Samples and methods

We conduct a final series of robustness tests on the validity of our main results. First, we consider whether a school is also accredited under the national label created by France's Ministry of National Education, Higher Education and Research. Second, we check the robustness of our results to a number of sample restrictions. Finally, we test the validity of our results when we use different estimation techniques. In particular, we cluster our standard errors at the school level and use an alternative estimator that is robust to the possibility of dyadic error correlation.

While international accreditations are the most high-profile, France's Ministry of National Education, Higher Education and Research also has an accreditation, as discussed in Section 2.2. While this accreditation is not of key interest to our study, we have included it in a regression as a dependent dummy variable. The first column of Table 8 shows the results. We observe that having this accreditation also significantly impacts student enrollment decisions. Using the number of years that a school has held this accreditation as the dependent variable, we find that holding this accreditation also has a positive and significant influence on student enrollment.[25]

As explained in Section 3.3, our main specification randomly drops one of

[25] This result is available upon request.

the two observations for each school-year pair. As a robustness test, we check whether our results hold if we don't drop these observations. The second column of Table 8 shows a positive and significant impact for all three labels, confirming our main result.

The French business school landscape is dominated by a few schools with particularly strong reputations: HEC, EDHEC, ESCP, ESSEC and EM Lyon. These top schools tend to have longstanding accreditations and a high percentage of matches won. Thus, we test the validity of our results when we drop pairs of schools that include these five schools. In the same vein, we also show that our results are robust to dropping observations corresponding to lopsided matches (i.e. the lowest and highest 5%). This suggests that accreditations impact enrollment decisions for both top-tier and other schools.

To control for errors being correlated across observations, our main results make cluster-robust inferences at the school-pair level, and include fixed effects. To control for within-school error correlation, we check the robustness of our results when we instead cluster standard errors at the school level. Errors could also be correlated between school-pair observations that have a school in common. Cameron and Miller [2014] show that including fixed effects and/or one-way clustering in such situations cannot fully account for this error correlation. They propose a (paired) dyadic-robust variance estimator inspired by the analysis of social network data [Fafchamps and Gubert, 2007; Snijders and Borgatti, 1999]. The last column of Table 8 presents the results of an estimation with the same specification as in Table 2 but considering the alternative dyadic-robust standard errors. These final results confirm the robust impact of AACSB and AMBA accreditations. However, they tend to diminish the impact of EQUIS, which does not appear to be robust to this specification.

Table 8: Subsample and methods

	Controlling for national label	Other half	Top five schools	No extreme values	Cluster school i	Dyadic-robust
AACSB	0.290***	0.076***	0.108***	0.148***	0.102***	0.074*
	(0.016)	(0.011)	(0.010)	(0.022)	(0.022)	(0.038)
EQUIS	0.594***	0.053***	0.054***	0.061***	0.028	0.047
	(0.019)	(0.017)	(0.012)	(0.022)	(0.028)	(0.052)
AMBA	0.233***	0.028**	0.031***	0.009	0.035**	0.059**
	(0.025)	(0.013)	(0.011)	(0.027)	(0.014)	(0.026)
National label	0.228***	-	-	-	-	
	(0.025)					
N	4505	4505	3806	1575	4505	4505
Pseudo R^2	0.376	0.598	0.592	0.223	0.598	-

Note: The table presents average marginal effects. Robust standard errors are in parentheses. All specifications include school and year fixed effects as well as controls from Table 2. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

6 Conclusion

Using data on French business schools, we study the impact of international accreditations on student preferences. Building on a pairwise indicator of revealed preferences for one school over another from France's centralized student allocation system, we observe that accreditations impact student decisions on where to enroll.

Among the three international accreditations, we observe that AACSB has the largest influence on students, equivalent to a school to improving four spots in *L'étudiant* magazine's annual ranking of the 40 best business schools. In comparison, having an EQUIS or AMBA accreditation is similar to moving up two spots. We observe that accumulating multiple accreditations tends to have a positive effect, and being a "triple crown" school with all three certifications is particularly influential.

Several questions remain for further research. First, we are limited by the aggregate nature of our data on student preferences, so cannot examine the heterogeneity of accreditations related to student characteristics (e.g. ability, location, financial situation, gender, age, etc.). Second, we do not evaluate whether accreditations affect other stakeholder decisions, such as professors' decisions or decisions of granting organizations; additional data is needed to address these questions. Third, while we show that accreditations influence student enrollment decisions, we do not evaluate whether accreditors truthfully disclose information and help students make better choices. The incentives faced by accreditation bodies are not necessarily aligned with student welfare, especially due to the presence of credence good characteristics in this market. For example, the objectives or budget constraints of accreditors may create conflicts of interest that inhibit the truthful disclosure of information. We hope to address these issues in the near future.

7 Appendix

Table A.1: Accredidated business schools in 2004 and 2019

	AACSB		EQUIS		AMBA	
	2004	2019	2004	2019	2004	2019
Audencia	X	X	X	X		X
Burgundy BS		X		X		
EDHEC	X	X	X	X		
EM Lyon		X	X	X		X
EM Normandie		X		X		
EM Strasbourg		X				
ESCP	X	X	X	X		X
Excelia BS		X				
ESC Pau						
ESSEC	X	X	X	X		X
Grenoble SM	X	X	X	X		X
HEC	X	X	X	X		X
ICN				X		
INSEEC						X
ISC Paris		X				
KEDGE		X	X	X		X
Montpellier BS		X				X
IMT BS		X				X
NEOMA		X	X	X		X
Rennes BS		X		X		X
SKEMA		X		X		X
South Champagne BS						
Toulouse BS	X	X	X	X		

Table A.2: Average values of variables

	Fees	Ranking	y_i
Audencia	8677	7	78,3
Burgundy BS	7441	22	31,2
EDHEC	10276	5	82,0
EM Lyon	10255	4	86,1
EM Normandie	7332	23	18,1
EM Strasbourg	6349	17	40,2
ESCP	10047	3	89,4
Excelia BS	7805	28	17,6
ESC Pau	7807	29	18,6
ESSEC	11006	2	93,7
GRENOBLE SM	9148	6	74,6
HEC	10498	1	99,8
ICN	7724	18	37,2
INSEEC	8705	27	16,5
ISC Paris	9267	26	23,8
KEDGE	8913	12	57,2
Montpellier BS	8834	17	36,1
IMT BS	3284	18	47,8
NEOMA	9084	10	66,1
RENNES BS	8153	17	41,4
SKEMA	9118	13	52,3
South Champagne BS	6839	32	9,2
Toulouse BS	9038	9	65,1

Note: For schools resulting from mergers (INSEEC, NEOMA, SKEMA and Kedge), the values prior to the merger are the average of their two precursor schools.

Figure A.1: Sigem students choices in 2016 (Headway Advisory [2016])

SIGEM 2016

TABLEAU DES RECOUPEMENTS PAR ÉCOLE

	Ont intégré ou auraient pu intégrer :																																
École	Affectés	AUDENCIA Nantes	BREST Business School	École de Management de NORMANDIE	EDHEC Business School	EM STRASBOURG Business School	EMLYON Business School	ENS Cachan	ENSAE ParisTech	ESC DIJON BOURGOGNE	ESC LA ROCHELLE	ESC RENNES School of Business	ESCP Europe	ESM Saint-Cyr SES	ESSEC	GRENOBLE École de Management	Groupe ESC Clermont	Groupe ESC PAU	Groupe ESC TROYES	HEC Paris	ICN Business School	ICN Business School BEL-B/L	INSEEC BS - Paris, Bordeaux, Lyon	ISC Paris Business School	ISG International Business School	KEDGE Business School	KEDGE Business School BEL-B/L	MONTPELLIER Business School	NEOMA Business School	NEOMA Business School BEL-B/L	SKEMA Business School	TELECOM École de Management	TOULOUSE Business School
AUDENCIA Nantes	475	475		1	13	18				10	1	70				238		4			63	5	8	6	3	197	14	40	250	16	181	19	325
BREST Business School	1		1																														
École de Management de NORMANDIE	73		2	73		2				3	24	2					5	29	40		4		32	30	12			3					
EDHEC Business School	505	393	1	2	505	8	11			1	1	22				367					30	1	1	3	1	102	1	10	145	3	91	7	257
EM STRASBOURG Business School	255		6	48		255				96	78	34					9	34	46		109	3	86	78	13	8		65	5	2	4	21	3
EMLYON Business School	505	384			342	3	505	2	5	1		14	4			370					21		2	1	1	56	1	7	80	1	86	1	217
ENS Cachan	7	4			4		3	7	1				3		2	1				2	1								1				1
ENSAE ParisTech	7	4			5		3		7							3													1		2		1
ESC DIJON BOURGOGNE	185	1	1	52		67				185	58	12					16	34	54		61	1	86	67	12	7	3	33	3	2	7	10	1
ESC LA ROCHELLE	110		4	55		10				17	110	3					12	34	50		20		53	55	11	3		6	3		1	3	
ESC RENNES School of Business	295	2	9	42		172				66	49	295				1	3	11	18		131	7	50	53	20	51	4	121	24	6	32	37	1
ESCP Europe	355	167			230		209	6	10			2	355		5	147					1					7		2	23		8		48
ESM Saint-Cyr SES	35	1		1	1		2					1		35		3								1	1	1			1		2		3
ESSEC	385	124			208		231	5	10				205		385	122				5						2			5		6		22
GRENOBLE École de Management	455	225			8	22	3			8	1	60				455			1		64	7	4	6	2	216	11	46	233	13	207	16	330
Groupe ESC Clermont	17			7													17	5	7		3		8	5	3								
Groupe ESC PAU	46		1	13		2				1	10						2	46	27		5		22	13	8			1					
Groupe ESC TROYES	44			13		2				1	5						5	14	44		2	1	11	13	8			2					
HEC Paris	371	35			116		224	22	39			1	311		267	39				371	1					1			3		1		2
ICN Business School	235		3	51		33				35	39	9					17	24	53		235		58	60	25	3		16	2		5	6	
ICN Business School BEL-B/L	17			5		4				3	2	1					2	1	4			17	4	5	3		1			5		1	
INSEEC BS - Paris, Bordeaux, Lyon	197			58		11				15	42	2					19	68	79		25	1	197	113	42	3		5	1		1	4	1
ISC Paris Business School	164			51		10				11	32	3					11	32	62		15		95	164	42	2		4	1			2	
ISG International Business School	47			9		4				3	7	1						10	18		3	2	21	23	47			3		1		1	
KEDGE Business School	605		3	24		231				102	61	231				2	7	28	25		298		92	59	21	605		260	224		168	66	15
KEDGE Business School BEL-B/L	30		1	1		7				2	2	8							1			19	3	2			30	10		24	8	1	1
MONTPELLIER Business School	255		3	32		127				75	53	52					12	27	33		101		80	75	21	13		255	10		7	25	1
NEOMA Business School	693	4	6	13	3	201	1			57	31	291				5	5	25	15		286		64	38	18	533		259	693		312	98	60
NEOMA Business School BEL-B/L	77			8		20				3	9	16				1		1	8			44	7	11	4		28	13		77	12	3	2
SKEMA Business School	535	3	7	16	1	224				84	26	253				4	4	18	17		191	6	60	58	22	251	11	252	158	14	535	105	14
TELECOM École de Management	117			10		35				29	12	21					2	9	14		38	1	31	31	19	17	1	37	9	1	13	117	2
TOULOUSE Business School	425	27	1	4		74				27	7	125				30	5	15	5		76	7	16	8	6	289	11	142	257	10	241	37	425
Total affectés	7 523	1 849	49	589	1 436	1 542	1 192	42	72	836	660	1 529	878	35	659	1 788	153	467	619	378	1 784	122	1 109	906	363	2 366	116	1 592	2 132	175	1 928	580	1 732
Non Affectés / Démissionnaires	1 136	164	10	39	64	84	30	1	0	42	37	73	4	0	3	120	10	36	42	2	178	18	101	88	44	212	26	131	211	40	159	97	144
Ont intégré ou auraient pu intégrer	8 659	2013	59	628	1500	1626	1222	43	72	878	697	1602	882	35	662	1908	163	503	661	380	1962	140	1210	1084	407	2578	142	1723	2343	215	2087	677	1876

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