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Considering the asymmetry of information in a credence good education, what inspires students to choose UCLouvain rather than other higher education institutions?

Asymmetry of information in higher education

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Abstract:

The purpose of this master's thesis is to study the information asymmetry of education demand. It is the continuation of Inès van Outryve d'Ydewalle's thesis, which focused on information asymmetry in education supply. This study considers various approaches to reduce information asymmetry in the context of a credence good as education. This includes students' choices of UCLouvain rather than another university or high school, or more basically, students' decisions about which higher education institution to attend. This study was carried out because education is one of the main topics in society. It exerts a fundamental influence on the development of individuals and the future of their nation. The second reason lies in the challenge that asymmetric information represents for universities, both in assessing the quality of their programs and in the evolution of students in their studies and how they choose them. This paper focuses on student choices and various factors influencing information asymmetry. To this end, we will analyze the definition of credence good, the market in which education evolves (quasi-market), the economics of education, the different elements influencing students' choice of university, and a survey aimed at identifying the different factors driving students to choose UCLouvain, as well as determining how to reduce information asymmetry.

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Forewords

After several months of hard work, I am happy to present my dissertation. It would not have been possible without the help of several people I would like to thank.

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Introduction

Introduction

"Considering the asymmetry of information in a credence good education, what inspires students to choose UCLouvain rather than other higher education institutions?"

This research is a follow-up to Inès van Outryve d'Ydewalle's master's thesis. [1]The research question of van Outryve d'Ydewalle was: "How can UCLouvain effectively address the challenge of asymmetric information in the evaluation of its education as a credence good?" In her thesis, she explains how the offer of education (professors) is affected by information asymmetry. I will work on the demand side (students) of information asymmetry and determine why students choose UCLouvain over other higher education institutions. For each student, it is not easy to form a precise idea of the quality of their future studies, whereas universities have a better idea.

In this thesis, high schools and universities are encompassed when referring to higher education institutions. Credence goods pose a challenge for consumers as they cannot determine the effectiveness of the service or product even after experiencing or using it (Srinivasan & Till, 2002). Education qualifies as a credence good due to its intangible benefits, which encompass acquiring a degree, career progression, the possibility of increased income, and personal development (Jongbloed and al., 2018). Asymmetric information in education occurs when professors or universities hold more substantial knowledge than students (Bloomenthal, 2021).

Asymmetry of information of the demand in education

Why study information asymmetry in education?

Although higher education (university or high school) is not compulsory, it offers the opportunity to deepen one's knowledge and significantly increase one's prospects of integration onto the job market (Enseignement supérieur | Belgium. be, n. d.). Education is at the heart of economic growth (M'Piayi, 2021). Education constitutes a pivotal element of society, exerting a fundamental influence on the development of individuals and the advancement of a nation (GGI Insights, 2023). The educational system imparts

[1] Although we started working on this topic as a team, circumstances forced us to present two separate – but complementary – theses.

knowledge, skills, values, and attitudes, equipping individuals for diverse roles in life (GGI Insights, 2023).

Higher education is a market where asymmetric information arises due to the lack of comprehensive data on the quality of services provided between universities and students. This represents a major challenge for universities when evaluating their educational programs, as well as a significant challenge for students when making their university choices and when evolving during their studies.

Studying information asymmetry can help to analyze behaviors and situations in the market economy. Asymmetric information contradicts the system's transparency assumption (Vujisic, n. d.). Studying information asymmetry can help reduce the latter, making it easier for students to choose a higher education institution.

Education has different roles: economic and social (M'Piayi, 2021). Education can help increase the rate of productivity and capital and, thus, GDP (M'Piayi, 2021). Education can also help with social integration, self-realization, self-investment, emancipation, preparation for work, etc. Reducing information asymmetry can help students choose the right path and thus help both social and economic roles to develop better.

Why study supply or demand?

The results of a school system cannot only be judged by its supply or demand. Education cannot be considered by either. Inès van Outryve d'Ydewalle has worked mainly on the supply side of education. That is, how teachers deal with information asymmetry and try to reduce it. Therefore, it is relevant and logical to work on the demand side of education and see how demand perceives supply-side efforts to reduce information asymmetry.

In Belgium, the sharp rise in participation in higher education is mainly due to factors other than supply constraints (Duchesne & Nonneman, 1998). University higher education institutions are publicly funded, with insignificant tuition fees (Duchesne & Nonneman, 1998). Access to higher education is open to all, but a secondary diploma is required to enter the institution of one's choice (Duchesne & Nonneman, 1998).

The main results

As seen in the literature review, education is commonly identified as a credence good. In other words that are difficult for consumers to assess regarding quality, even after being used (Jongbloed and al., 2018). Education operates in quasi-markets, specialized markets

where competition and market mechanisms are introduced to enhance efficiency and outcomes in sectors like education or healthcare. In this sector, information imbalance is due to incomplete data regarding the quality of services provided. This presents a considerable challenge for universities when assessing the effectiveness of their educational offerings. The field of education economics allows us to assess the quality of education; the impact of education policies; and to explore the limitations and opportunities within the frameworks of markets and institutions (CEPS & CESifo, n.d.). It provides insights into the efficient production of high-quality education within the educational sector (CEPS & CESifo, n.d.). Several factors influence students' choice of university, including finance, family background, student's gender, entrance exams, auditorium size, the social and economic role of education, previous educational background, and the proximity of the place of study to the student's residence.

As observed throughout the analysis section, students choose to attend university for various reasons, including the perceived suitability of its courses (31.7%) and a natural inclination towards university education (31.4%). Additional factors, such as exclusive study offerings and the university's reputation, play a role. It highlights key criteria for choosing UCLouvain, as the campus environment, university reputation, and proximity.

In our analysis, various elements were examined to assess their effectiveness in mitigating information asymmetry on the demand side, more precisely from the student's point of view. One such element is course specifications, a valuable tool for teachers to deal with information asymmetry. However, they are only moderately embraced by students, with a limited number of students consulting them. On the other hand, student evaluations of teaching effectively fill information gaps between lecturers and students. This approach fosters mutual understanding of course perceptions, thus contributing to a more transparent relationship. Then, when it comes to world university rankings, students do not really pay attention to them. So, it does not help them in terms of information asymmetry. Similarly, the reputation of UCLouvain is proving to be an ineffective strategy, especially when students do not attach significant value to it. A certain indifference on the part of students is present towards various university labels. On the other hand, email communications have emerged as a significant source of information, arousing particular interest among students and increasing transparency. Emails concerning lessons and significant events on the university campus are essential.

The university's sustained activity on several social networks plays a key role in attracting students, increasing accessibility, and helping to reduce information asymmetry. Lastly, open courses, information days, and fairs are all interesting ways of reducing information asymmetry. UCLouvain stands out for its active participation in these events, offering students valuable insights into the various courses available and establishing a connection between the university and its student community.

The literature review and some empirical findings of this dissertation highlight that certain elements are more pertinent to individuals of the female gender than their male counterparts. It revealed that women exhibit greater sensitivity to information asymmetry when making decisions during their academic pursuits. The analysis section identified specific factors that are more influential for women, including social networks, open courses, information days, and fairs. Conversely, factors such as university reputation and course specification impact women at choice time.

Higher education in Belgium

Belgium has a well-established and reputable higher education system. There are three types of higher education: short non-university education; long non-university education; and university education, which includes bachelor, master degrees, and doctorates. Belgium has several universities, such as UCLouvain. French, Dutch, or English courses are given depending on the Belgian university chosen. To study in higher education, students must have obtained their CESS[2]. To access a master's program, a bachelor's degree is needed. There are no entrance examinations for higher education except for civil engineering, medicine, and certain branches of the arts. Belgian degrees are generally well-recognized internationally.

Since 1953, the number of students in higher education has increased (Duchesne & Nonneman, 1998). From 35,000 students in 1953 to 255,000 in 1991. In 2016-2017, Belgium had 228,000 students (Kabashi, n.d.). This figure has risen by more than 26% in 10 years (Kabashi, n.d.). In 2016 - 2017, students were divided between university (43%), higher education (39%), social promotion institutions (15%) and higher arts schools (Kabashi, n.d.). At university, 76% of students are enrolled in the first cycle (bachelor

[2] The CESS is the Certificate of Higher Secondary Education. It is issued to students by the class council and approved by the Communauté Française de Belgique (*Description de la certification*, s. d.).

degree); 21% of students are enrolled in the second cycle (master degree); and 3% in the third cycle (doctorate) (Kabashi, n.d.). In Belgium, the proportion of university students is higher than in neighboring countries (Duchesne & Nonneman, 1998).

UCLouvain (also called "Université Catholique de Louvain") was founded in 1425 and today offers a wide range of academic programs in many fields, including science, humanities, medicine, law, engineering, economics, and many others (History, n.d.). The university has several campuses: Louvain-la-Neuve, Bruxelles Woluwe, Bruxelles Saint-Louis, Bruxelles Saint-Gilles, Mons, Tournai, Namur, and Charleroi (Campus, n.d.). UCLouvain is recognized for its significant contribution to research, with researchers active in various scientific fields. It participates in national and international research projects (La recherche, n.d.). UCLouvain promotes international openness, welcoming students of different nationalities and encouraging academic exchanges on a global scale (International, n.d.). UCLouvain offers a dynamic student life with various associations, cultural, sporting, and social events (Episode 2: Sport and culture at UCLouvain, n.d.).

Methods and structure

The first chapter is the literature review, which allows us to see the student perspective on education thanks to secondary data. The analysis starts by identifying the type of good that education represents and the market in which it operates to comprehend the source of information asymmetry. Education is a credence good operating in a quasi-market. Therefore, an analysis of how the supply and demand for education evolve through the economics of education is done. This will enable us to understand students' university choices in the context of information asymmetry in education (M'Piayi, 2021). It is important to analyze the factors influencing their decisions to go to university and study strategies (M'Piayi, 2021). Finally, various factors influencing students' choice of university will be analyzed.

Then, in the second chapter, the methodology chapter, I explain how the data was collected and how the survey was carried out so that the third chapter can be analyzed.

Finally, in the last chapter, efforts are made to address the research question. To do this, I will examine how students make their university choices and why they come to study at UCLouvain. Next, various factors that can contribute to the reduction of information asymmetry will be explored.

Chapter 1: Students' perspective in the higher education market

1.1. Credence good

Three main types of goods are identified to facilitate the marketing of products: search, experience, and credence goods (Rutgers Business School-Newark and New Brunswick, 2019). Distinguishing them is possible based on the degree of information asymmetry (Srinivasan & Till, 2002). Goods are divided into three main types to ease the identification of the type of goods people are asking for and help facilitate companies target buyers (Rutgers Business School-Newark and New Brunswick, 2019).

Credence goods and services are complicated for consumers because they cannot ascertain whether the service or product they have Provided or used is effective even after consumption (Srinivasan & Till, 2002). Expertise is required to better comprehend its value (Mitra and al., 1999). Vendors will determine the customers' needs, and the customers must rely on reputation, expertise, or advice from friends. Vendors and customers do not have the same level of information. This creates information asymmetry. Certifications, therefore, become important (Ekelund and al., 1995). Education, health services, legal services, child daycare, etc., are credence goods. (DUV, 2007).

Education is credence good because it involves intangible benefits such as obtaining a degree, career advancement, potential income increase, and personal development (Jongbloed and al., 2018).

Kenneth Arrow and Michael Spence created the signal and filter theory in the 1970s because of the value of education in the labor market, particularly regarding career advancement (Lauricella, 2022). According to the signal and filter theory, education is not seen as an investment to enhance human capital but rather as a means of selection (Lauricella, 2022). Employers can be sure that if the students have a diploma, they possess specific skills and can thus select the best students, thanks to their diploma. The students are “sorted” by a prior screening process conducted by the educational institution and are mindful that they forgo a salary while studying (Lauricella, 2022). In other words, education acts as a signal of competence for recruiters, and a diploma attests to the individual's ability to pass the selection process successfully. Education increases

individuals' skills and identifies them to filter and send a signal (Fraisse-D'Olimpio, S., s. d.).

The signal and filter theory helps explain why education can be considered credence good (Lauricella, 2022). Candidates use their higher education degree to signal competence (Chatel, 2006). Considering education as a credence good, it is students who lack information about the quality of university programs. This lack of information leads to resource misallocation and market inefficiency (Kivistö, 2005). So, there are multiple levels of asymmetric information. In this case, education is indeed credence good because, as mentioned above, the education discussed here brings intangible benefits such as obtaining a degree, professional advancement, increased potential income, and personal development (Jongbloed and al., 2018).

Thanks to the signal and filter theory, the choice of study matters relatively little; what matters most is pursuing one's education and obtaining a degree. Even the content of the degree does not really matter; what matters most is who delivers the degree. In other words, the courses selected by students, the quality of teaching, etc., do not really count, but what does count is the university's reputation, which will signal that students want the companies that will eventually hire them.

1.2. Quasi-market and failures

Between perfectly competitive markets and monopolies, there are quasi-markets in which essential goods such as education and health care are located. Bara (1996) explains that quasi-market services play a pivotal role in redistributive and allocative policies; without essential goods, the economy would partially or totally collapse. They represent a subtle combination of public authorities' funding and market forces' regulation (Vandenberghe, 1998). Quasi-markets avoid economic failures, meet meritorious needs by providing services at reduced costs, and prevent natural monopoly situations (Bara, 1996). This concept was proposed by Milton Friedman (Dill, 1997).

The demand and supply are coordinated by market mechanisms (van Outryve d'Ydewalle, 2023). Education combines competition in the education market and public funding (Bertolin, 2011).

Quasi-markets are based on two pillars. The first pillar is the free choice of schools (Vandenberghe, s. d.). That is why students, and their families have a free choice of

educational establishment (Plassard & Thanh, 2009). There is, for example, no taxation of schools according to place of residence. The second is public funding per student (Vandenberghe, s. d.). In other words, tuition fees are refunded (or practically refunded) (Plassard & Thanh, 2009). Different systems exist for tuition fees all over the world. More and more countries are trying to provide free education (Lynch, 2009). The first system includes low student fees and subsidies for recognized universities such as Belgian universities (Agasisti & Catalano, 2006). In some countries, such as Panama, the university is free to all students, with no concern for nationality (Lynch, 2019). In other countries such as Norway, Sweden, Uruguay, Argentina, and Malaysia, university is free for the country's citizens but not for others (Lynch, 2019). Denmark, France, Austria, etc., are making exceptions to their fees. It is free (or practically free) for their citizens and European students but not for others (Lynch, 2019). Other countries have higher student tuition fees (see Appendix 1). In the USA, students' tuition fees depend on the number of academic credits[3] they have chosen (Pop, 2022). Consequently, not all education systems can be considered quasi-markets, as not all involve the reimbursement of tuition fees. They do not respect the two pillars of quasi-markets.

Studying the supply and demand functions is necessary to fully understand the quasi-market. Demand for universities is driven by students' previous achievements, such as their secondary school diplomas and technical qualifications (McGivney, 1996). In this type of economy, the state (the offer) plays various roles. The first is a market role (Plassard & Thanh, 2009). There is competition among educational institutions. While the quasi-market seeks efficiency through competition among these establishments, the state will still impose the rules of this competition (Plassard & Thanh, 2009). Competition exists due to the difference in quality among universities (Musselin, 2018). However, competition will help improve the quality of teaching, the efficiency and productivity of systems, etc. (Bertolin, 2011). The education market is imperfect and violates the assumption between homogeneity of the goods and services (Bertolin, 2011). The second role is administrative (Plassard & Thanh, 2009). The state controls the schools and the

[3] Credits in Europe are based on the student workload, and in the American university system, are based on the contact hours (Pop, 2022). The student workload is the hours needed to follow and prepare for a class and take and prepare for these examinations (Pop, 2022). The contact hours are the hours the faculty member needs to teach (Pop, 2022).

funds allocated to them. The quasi-market supports state education (Plassard & Thanh, 2009).

As the education market is imperfect, specific challenges emerge, such as information asymmetry as explained before, positive externalities, and economies of scale (Agasisti & Catalano, 2006). The existence of asymmetric information questions the assumption of information transparency in the standard model of pure and perfect competition (Vujisic, s. d.). Students seeking to maximize their utility are, therefore, inclined to adopt opportunistic behaviors that are likely to compromise the efficient functioning of the mark (Vujisic, s. d.). Positive externalities occur when one party benefits another without affecting pricing (Bertolin, 2018). Other agents create positive externalities during consumption because it is a merit good (Arcelus & Levine, 1986). Education began with positive externalities such as lowering crime, improved health, lower social tax, etc. (Agasisti & Catalano, 2006). Education is also a positional good (Salinas-Jiménez & Salinas-Jiménez, 2011). The value of education is enhanced by the evaluations it receives. Moreover, education is also a social good, implying consumers are not making rational choices (Goldweber & al., 2013). Students try to maximize their individual positional advantage at the expense of others. Scale economies result in more prominent universities offering education at a lower cost per student than smaller institutions due to spreading fixed costs over a more significant number of students in the case of universities (Koshal & Koshal, 1995). Competition is established because smaller universities cannot compete with the price of more prominent universities. The existence of market failure, primarily attributed to information asymmetry, positive externalities, and economies of scale, underscores the need for government intervention and, thus, public subsidies. Education is often organized in quasi-markets because of positive externalities and asymmetric information.

The information gap produced by asymmetric information makes it challenging for students to assess the utility of a university degree, as education is considered a credence good. Asymmetric information exists primarily between universities and students.

1.3. Economics of education

The examination of education's profitability on the job market, along with research into societal aspects typically studied in sociology and social sciences, led to a growing concern that eventually led to the establishment of the field known as the economics of education

(Lauricella, 2022). To better study students' choice of university, given the asymmetry of information in a credence good such as education, an analysis of how and what influences the choice of consumers (students) and what they put in place to study is necessary (M'Piayi, 2021). The economics of education[4] is a field of research within economics. Scientific research contributes to deepening the understanding of the individual decisions of students (demand), teaching (supply), and measures of the effect of education on demand but also the impact of students as a whole (macroeconomics). The field of education economics plays an essential role in producing educational goods and evaluation methods, considering the laws, rules, and requirements of the education system with the necessary amount of resources (the financing of studies) (M'Piayi, 2021).

This research field encompasses various aspects, such as the labor market's response to education, the efficiency of the education sector, funding models, and the broader impact of education on economic growth. It investigates the influence of education on wages, employment, innovation, social equality, and a society's knowledge-creation capacity through research. Our study focuses on evaluating the quality of education, the effectiveness of education policies and exploring the constraints and possibilities presented by markets and institutions (CEPS & CESifo, n.d.). This approach will allow an examination of the information asymmetry between students and universities.

Therefore, this study aims to explore the factors influencing students' choices of university studies in the context of information asymmetry. Understanding the motivation behind students opting for university education may help address issues such as over-education, the profitability of education, etc. Over-education is present in many sectors. Students often leave their studies overqualified for their chosen jobs (Gurgand, 2005). When workers are overqualified, their performance remains positive but lower than that of someone in a job appropriate to their level of education. The best case for workers, of course, is to have a job suited to their level of qualification (Gurgand, 2005). The approach involves examining university education's attributes, as van Outryve d'Ydewalle investigated. Essentially, the analysis will center on the rational behavior

[4] This field of research was created at the end of the 1950s by three economists: Theodore Schultz, who was awarded a Nobel Prize in 1979; Gary Becker, who was awarded a Nobel Prize in 1992; and Jacob Mincer (LECLERCQ, s. d.). It was formalized in 1973 in a journal of political economy (Paul, J., 2007).

presented by universities. Subsequently, attention will be directed to the study of demand—how students respond to the available educational offerings.

1.3.1. Supply-side: University

In a microeconomic framework, education providers must behave rationally by thinking about the training required and the quality asked by the students with the fewest resources possible (M'Piayi, 2021). Microeconomics shows us how good can be produced qualitatively in the education industry (CEPS & CESifo, n.d.). That is to say that microeconomics analyses can assess the influence of family contexts, budget allocations, and institutional characteristics on student performance (CEPS & CESifo, n.d.). In this way, they demonstrate how high-quality education can be efficiently "produced" within the educational "industry" (CEPS & CESifo, n.d.). In addressing this issue, the aim is to diminish information asymmetry. This is achieved by using methods to assess the quality of education and its effectiveness in providing students with the essential information for deciding between university enrollment and attending high school.

To achieve the required quality with the least possible resources, universities are implementing various plans. The financial charge on the state is substantial due to the university's high costs, stemming from internal inefficiencies associated with a large student population, elevated failure rates, and dropout rates (Rochat & Demeulemeester, 2001). As van Outryve d'Ydewalle concluded in her thesis (2023), various points make up the offer that reduces the asymmetry of information between students and the university:

- The course specifications provide practical information to limit information asymmetry. To this end, the course plan should be like the course specifications. There is a lack of clear sanctions if professors do not follow them.
- Student course evaluation, guided by confidentiality, responsibility, adaptability, and reflexivity (Berthiaume and al., 2011), helps teachers to enhance their courses through valuable student-provided insights. Results remain confidential and are shared only with the Dean to support the teacher. The faculty oversees this process, conducted at least every three years for first-year courses, allowing for some adaptability within modules. Lastly, teachers are encouraged to reflect on the feedback, either independently or with the guidance of an educational advisor.

- The academic competition between teachers leads to a selection of teachers due to limited funding. They will have more secure and better-paid posts, giving them a certain amount of freedom.
- The world university ranking assesses the research carried out in the university. Professors are paid more if they are more active in research.
- The university's reputation gives students more information, reducing this asymmetry.
- The university's transparency reduces information asymmetry if the parties have the same information. Generally, transparency refers to an organization's willingness to make its internal processes and decisions accessible to third parties, whether they are involved or not (Pasquier & Villeneuve, 2007).
- Labels (AEQUES, EQUIS, CTI, etc.)[5] help identify the teaching quality.

1.3.2. Demand side: students

The applicant (the student), the subject of this research, asks themselves many questions, such as how to choose their studies, train, why study, why go to university and not to non-university higher education institutions and vice versa. Each student chooses the educational pathway that is supposed to maximize their utility (M'Piayi, A., 2021). Given the information asymmetry in education, this is not an easy choice. The student must form a more precise idea of the quality of education despite the asymmetry of information present in this credence good (M'Piayi, A., 2021).

1.3.2.1. What is the purpose of studying?

Two reasons drive students to pursue their studies: the first is the uncertainty of the future (Gurgand, 2005). Any event can disrupt the plans of any student. Furthermore, they are inclined to modify their choices when they study, evolve, and learn. With each choice, new opportunities arise. It is important to decide gradually. The second reason is that the educational system provides and certifies a certain level of training quality (Gurgand, 2005). The choice of the education a student pursues represents the signal they wish to send to their future employer. Do they want a broader range of job options, or do they aim for a higher return rate (better salary, etc.) (Lauricella, 2022)?

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[5] AEQUES is an agency for the evaluation of the quality of education. EQUIS is the European Quality Improvement System. CTI is the "Commission des Titres d'Ingénieurs".

1.3.2.2. How do students make their decision to study?

Students' decision-making process has been studied, and in 1966, James E. Marcia summarized it in four different profiles. These profiles were identified based on certain factors such as orientation, exploration, decisional status, and commitment.

The first profile is the diffusion status. In this status, the student does not feel like they are making decisions (Marcia, 2020). This means they are carefree adolescents lacking commitment. They do not want to decide their obligations (Lannegrand-Willems, 2012).

Next, there is the foreclosure status. The student wants to take on responsibilities, but they also like someone to help them determine their direction (Marcia, 2020). Young adults in this status are somewhat insecure (Cohen-Scali & Guichard, 2008).

The third status is the moratorium status, during which the adolescent is in crisis and explores different commitments but does not truly commit (Marcia, 2020). The student is in a state of questioning and self-examination (Lannegrand-Willems, 2012).

The final identity achievement status is when adolescents commit to their chosen identity (Marcia, 2020). This is when the student is most mature in their reflection (Cohen-Scali & Guichard, 2008).

Evaluation, another tool to guide stakeholders' decisions, is a distinct and essential discipline in educational economics (M'Piayi, 2021). It takes two forms: descriptive evaluation, establishing indicators characterizing the education system and signaling its quality; and measuring the shocks generated by factors linked to school. The latter type of evaluation makes it possible to develop a production function (M'Piayi, 2021).

In conclusion, students will not make similar decisions depending on their status. Those with a diffusion status will let themselves be carried along. Their decisions will undoubtedly be influenced by the choices of their friends, etc. On the other hand, students with foreclosure status know where they are going and what they want to do, thanks to someone's help. Study fairs and information sessions will come in handy. Students with a moratorium status will find themselves asking a battery of questions without knowing what they want to study and where. Finally, students with completion status understand what they want and what they want to learn. Evaluation can also help students to make their own decisions.

1.3.2.3. What is the optimal level of education for students?

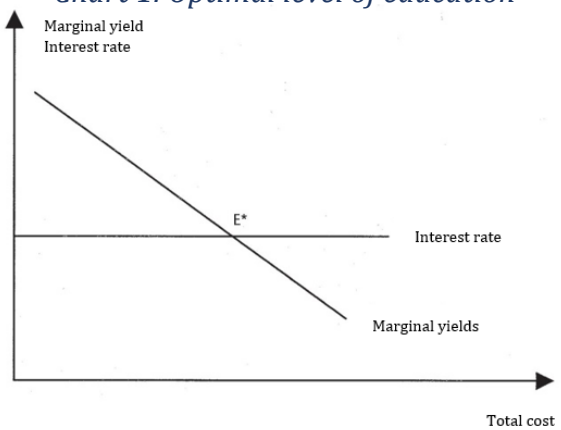
Students may wonder what the optimal level of education is. Why would they continue to study beyond high school, especially when considering the information asymmetry between students and universities, which does not help students decide whether to continue their studies?

In this first sub-section, the issue will be examined from an economic point of view to understand what is going on. Why should students consume educational goods? Why should they invest in education? Then, understanding human capital theory will enable us to understand the more human aspect of the question of the optimal level of education.

Economic Perspective: Investing in education?

Understanding the demand for education is equivalent to analyzing why students invest in an extra year of study. This model's first assumption is that decisions result from a rational comparison between the costs and benefits of studying an additional year (Gurgand, 2005). Secondly, income must be fixed over an individual's lifetime because if it varies, this can influence students' choices (Gurgand, 2005). Consideration should be given to the additional income earned by studying for a longer duration, as well as the fact that income received in the future is not equal to income received now.

Chart 1: Optimal level of education



https://www.cairn.info/economie-de-l-education--9782707140555-page-33.htm - (Gurgand, 2005)

As you can see in Chart 1, the E* point is where students have studied for the optimal number of years (Gurgand, 2005). In other words, it is the point where marginal gain equals cost. To determine whether a student will study for an additional year, they must assess what they gain (marginal gain) compared to what they lose (marginal cost), considering income they have not earned during the year they study. The student will check if the marginal gain from studying for an additional year is greater than the direct cost of the year plus the potential income that can be earned during that year if the student becomes a young worker (Gurgand, 2005). If the return on education is higher than the interest rate, the student can borrow to continue their studies (Gurgand, 2005). This investment costs less to the students than what it yields. Previously, in the context of

quasi-markets, it was mentioned that studies are practically free because the state subsidizes recognized universities. Here, the tuition fees and any borrowings are taken into account. Firstly, students can borrow, but this is not compulsory. Secondly, in education systems where studies are virtually free, the total amount differs slightly from the opportunity cost due to various charges such as syllabuses, study-related travel, and accommodation.

In concrete terms, if students choose to continue their studies, they evaluate the anticipated increase in income over their entire working life as compensating for the initial cost of not having a salary during their studies (Gurgand, 2005). The optimal level of education is the level at which education no longer brings any marginal gain to the student when the marginal cost exceeds the marginal gain (Gurgand, 2005).

Human Capital Perspective: Human Capital Theory

The economics of education was born at the same time as the theory of human capital (Leclercq, n.d.). The Organization for Economic Co-operation and Development (OECD) defines human capital as all the assets, knowledge, know-how, skills, and qualifications contributing to personal, social, and economic well-being. Productivity, innovation, and employability are supported by human capital (Fraisse-D'Olimpio, S., n.d.). To what extent are students willing to invest in their studies?

Thanks to the theory of human capital, it can be assumed that the student invests in themselves at one point to achieve greater future satisfaction than if they had not invested (Paul, J., 2007). When students invest in an additional year of study, they forgo a year of salary (Paul, J., 2007). The skills acquired in the educational system also help students, once they become young workers, to increase their income and enhance their productivity. Learning is, therefore, a form of capital embodied by the individual (Leclercq, n.d.). Students choose the duration and content of their higher education based on present costs and benefits (Leclercq, n.d.).

This theory is also seen as a means to explain wage disparities. Since workers are not equally trained, they should not be equally paid (Lauricella, 2022). On average, in 2000, in France, the salary gain was 6% per additional year of study (Gurgand, 2005). As mentioned before, students must weigh the costs and benefits of studying for an extra year. This will influence students' choices.

1.4. Factors influencing students in their choice of university

Various readings quoted below identified factors influencing students' choices to pursue higher education. Students are not always aware that these factors influence them. Demand is affected by many social, cultural, economic, and other factors (Kirby, 2011).

1.4.1. Financial aspect

The first point that repeatedly comes to mind is the budgetary aspect of pursuing studies. Moreover, knowledge development is a crucial issue to ensuring a sufficient standard of living and work compared to the rest of the world (Vermandele and al., 2010).

In Belgium, with the subsidies the state provides to universities, university enrolment fees are limited. Family income is rarely a reason for students to continue or stop their higher education studies. Less than 3% of students do not have access to universities, and less than 6% are forced to delay their university entry due to insufficient income (Duchesne & Nonneman, 1998). Most students have four options to enter university: they can benefit from scholarships; reduce their daily expenses; work during their studies; or choose a less expensive educational institution. These "options" impact students and their families (Duchesne & Nonneman, 1998). The human capital during the studies will be affected.

Not all students have the same opportunities to access higher education. Students' social backgrounds have a significant impact on their finances. Naturally, there is self-selection on the part of the more disadvantaged students (Gurgand, 2005). In less developed countries, staying home to work the land is more important than studying. The investment will be higher for someone with a lower income than for someone more affluent. Students do not have the same opportunities (see Appendix 2). Meanwhile, in more developed countries, costs are less of a concern for the early years of study (Gurgand, 2005). The cost-benefit ratio matters more (see Appendix 3). For a person with a middle-income level, the financial aspect in Belgium has relatively limited influence (Gurgand, 2005). Any resources that enhance students' knowledge and productive capabilities will not be used for other consumption. The student will forgo resources they could earn, by working to gain other resources (Paul, 2007). They will earn more thanks to their university studies (Gurgand, 2005).

1.4.2. Family background

As confirmed in Appendix 4, the parents' educational level (of new students in their first year at university) impacts the education level of their children, regardless of the student's gender. Fewer and fewer students with neither parent holding a higher education degree are enrolled in higher education (approximately 20% in 2008-2009 compared to approximately 30% in 1997-1998) (Vermandele and al., 2010). The number of students with at least one parent holding a degree (but not a university degree) has remained stable over the years (approximately 30%) (Vermandele and al., 2010). The percentage of students with at least one parent who is a university graduate and attending university increases slightly. It affects approximately 42% - 47% of students (Vermandele and al., 2010). In the French-speaking community of Belgium, children of university-educated mothers have 2.5 times more chance of attaining a higher degree than those with a mother holding only a primary school diploma (Maroy & Van Campenhoudt, 2010).

The proportion of parents with diplomas is rising, increasing the chances of university access through segregative democratization. Segregative democratization in Belgium reflects students' self-selection based on factors like parental education, cultural capital, and parental perceptions, explaining the self-exclusion of first-generation students from university education (Maroy & Van Campenhoudt, 2010). This is observed between universities and secondary schools in Belgium (Maroy & Van Campenhoudt, 2010).

1.4.3. Gender of students

Even though the proportion of men and women varies depending on the field of study, access to university is not different. 53% of the students entering university are women. Divided into three major fields: 58.2% of those studying humanities and social sciences are women; 61.1% in health sciences; and 26.9% in natural sciences (Vermandele and al., 2010). Humanities and social sciences include philosophy and literature, information and communication, political and social sciences, law, economics and management, and psychology and education. Health sciences include medical sciences, motor sciences, and related medical sciences. Finally, the sciences include engineering sciences, agronomy, and biological engineering sciences and sciences.

The only difference is that women prefer more safety concerning scheduling (Agrey & Lampadan, 2014). Women are more sensitive to the asymmetry of information. They

prefer information about the institutions before choosing a university as their enrollment or first choice (Agrey & Lampadan, 2014). Women tend to be more sensitive to asymmetric information.

1.4.4. Other factors

Selection aspect

In Belgium, there is little formal selection in such studies such as medicine, civil engineering, and some artistic options (Duchesne & Nonneman, 1998). Different ways of selecting students exist. In civil engineering, there is an entrance exam. Due to this selection, some students can feel discouraged or refuse to continue their studies.

Class size

Class size has a minimal influence on students (CEPS & CESifo, n.d.). For the state, reducing class size is too expensive. It would require hiring more teachers, having more extensive facilities, etc. (Gurgand, 2005).

Social role of education

A student within the education system also has a social role, such as social integration, self-fulfillment, self-investment, resistance to the work provided, preparation for the workplace, etc (M'Piayi, 2021).

Economic role of education

Studying increases productivity and the capital of society, and its GDP. Education is at the core of economic growth. Studying can also help limit unemployment (M'Piayi, 2021).

Previous educational background

The type of secondary education the student attends also influences their decision (see Appendix 5). 90% of students entering their first year at university have studied in the Belgian general secondary education system, while only approximately 5% have come from technical or artistic Belgian secondary education (Vermandele and al., 2010).

Proximity

University should not be too far from the place of residence (Agrey & Lampadan, 2014). Students will have extra costs (accommodation, travel, etc.) if the residence is too far from the university.

Chapter 2: Methodology

This chapter will explain the methodology used throughout my master thesis. This means that this chapter will explain the theoretical framework, research method, data collection, and analysis method I have chosen to answer my research question.

2.1. Research strategy and method

Based on the literature review, specific hypotheses for further research have been identified. The first hypothesis is as follows: specific factors drive students to pursue higher education at university and, specifically, to choose UCLouvain. The second hypothesis is that students and professors agree on specific means of reducing information asymmetry, such as course specifications, evaluation of teaching by students, world university rankings, labels, and university transparency. The final hypothesis is as follows: according to students, other factors put in place by the university or other organizations reduce information asymmetries, such as emails, university reputation, open courses, information days, fairs, and social networks.

I chose to conduct a quantitative study because it gives a representative sample and is more accurate (Pleyers, 2021). It seemed important to me to have a good number of answers to have a representative sample of students wanting to enter, be, or were at UCLouvain to find out whether the tactics to reduce the university's information asymmetry are practical but also whether students can try to reduce this information asymmetry for themselves. I chose UCLouvain for its relevance to van Outryve d'Ydewallle's research. In addition, surveys are a flexible economic tool that allows structured data to be collected for a large student population sample (Fleetwood, 2023).

2.2. Data collection

I employed a combination of primary and secondary data sources to gather the necessary data for my dissertation. This combination of data collection methodologies ensures a robust foundation upon which I could build my master thesis.

2.2.1. Primary data collection

In this context, primary data refers to the information I directly collected through a custom survey designed to address my specific research question (survey in Appendix 6

and complete data set in Appendix 8). This survey allowed me to acquire fresh insights and perspectives from the participants.

To gather my primary data, I initially shared my survey with a small control sample to assess its performance and see whether it worked properly. I then had to make some changes: questions asking for multiple responses but with the option to check only one item, new proposals, one or two spelling mistakes, etc. I also checked that all the questions helped complete my hypotheses and were understandable (Pleyers, 2021). I subsequently launched my survey on Facebook, but I did not want just anyone to participate. Therefore, I actively sought out various UCLouvain student groups to ensure responses from this demographic, all while monitoring the obtained responses to maintain good representativity. I received some answers from students at other universities or high schools. I thought it would be helpful to have advice from “the opposing camp” for some of my questions. I also asked my promoter to share it with its students.

The survey has three main sections:

- The first section mainly concerns questions relating to the conclusions of van Outryve d'Ydewalle's thesis. In other words, questions to assess how demand reacts to supply-side attempts to reduce information asymmetry. This section includes questions about professors' course specification, their opinions on them, students' course evaluations, world university rankings, labels, the university's or high school's reputation, and the transparency of higher education institutions.
- The second section includes questions on various elements that help students reduce information asymmetry during and after their studies. These questions concern information emails, open courses, information days or study fairs, campaigns on social networks, their choice to study in higher education, and the criteria that led them to study in a high school or university.
- The final section covers all respondent control data: gender, age, year of study, the aim of students who wish to study after the CESS to know whether they take education as a credence good and the university at which they are studying or have studied, knowing that UCLouvain is the university that concerns us.

2.2.2. Secondary data collection

I also incorporated secondary data into my literature review. Secondary data is information initially gathered for purposes other than the current study but holds relevance and significance in the research context. As elucidated by Pupion (2012), secondary data sources can be valuable, providing a wealth of pre-existing knowledge and data points that contribute to a comprehensive understanding of the subject matter.

2.3. Analysis method

I believe the software best suited to analyzing the data collected is SPSS. Before analyzing my data, I sorted the data to have only data relevant to our study. In SPSS, I will only use data from students at UCLouvain.

2.4. Reliability and validity of this research

Several small strategies were implemented to ensure a valid and reliable survey. The first is that respondents were only required to answer closed questions. The open-ended question is optional because this type of question generally tends to bore respondents, who will finish the study quicker than expected (Pleyers, 2021). In addition, a filter question checks whether respondents answer without reading the questions or paying attention. The question was: "Why did you choose to attend high school or university?" If university students select answers concerning high school and vice versa, they will be deleted and considered invalid.

To find out whether my survey is valid and representative of the Belgian university population, I checked the proportion of men and women who had been enrolled at university for years (53% women and 47% men (Vermandele and al., 2010)) matched more or less the proportion of male and female students (see Appendix 7). I also checked that there were not only students from master's or bachelor's.

The reliability of this research will be guaranteed thanks to the large sample (Interaction Design Foundation - IxDF., 2016). I then chose this research method because student answers can be subjective. Therefore, my sample size must be large enough for a representative sample. Before sorting, I reached a total of 790 answers. I had collected enough data to sort it without influencing the outcome of my search. What is more, I stopped collecting data when adding a few extra answers did not really influence the overall response to the questions.

Chapter 3: Why are students choosing UCLouvain and how do they reduce asymmetric information?

This chapter analyzes how students choose to study in higher education, especially at UCLouvain, and how asymmetric information can be reduced at UCLouvain. This means that in this chapter, different factors will be analyzed to help reduce asymmetric information, such as the course specification; the evaluation of teaching by students; the world university rankings; the university's reputation; labels; transparency of university; emails; social networks; open courses; information days and fairs. In this chapter, attempts will be made to address the hypotheses presented in Chapter 2.

All the answers in this part are from UCLouvain students. Education is always considered as a credence good. All the frequencies of the data can be found in Appendix 7.

The first part will be dedicated to the student's choice of studies. I will explain why students choose to study at university or high school. An analysis of why students choose UCLouvain rather than another higher education establishment is made. Then, different factors influencing the information asymmetry will be analyzed.

3.1. The choice of studies

3.1.1. Why are students choosing university and why UCLouvain?

Chart 2: Why do students choose university?

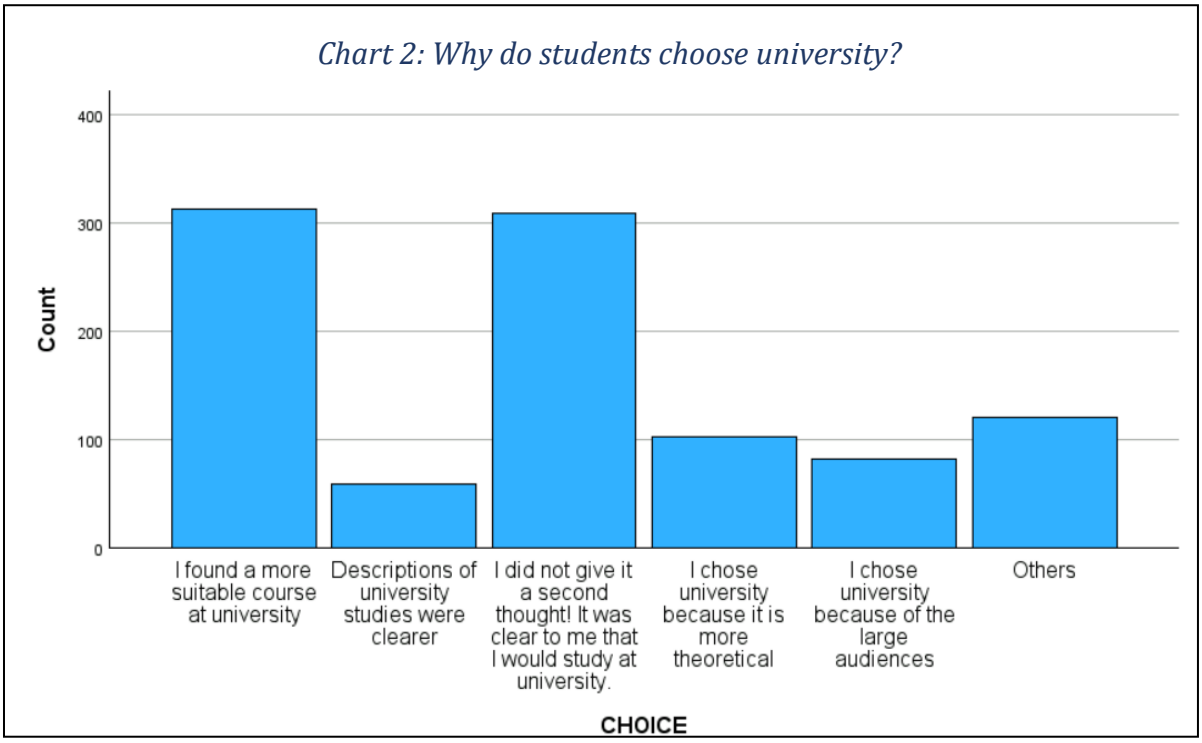
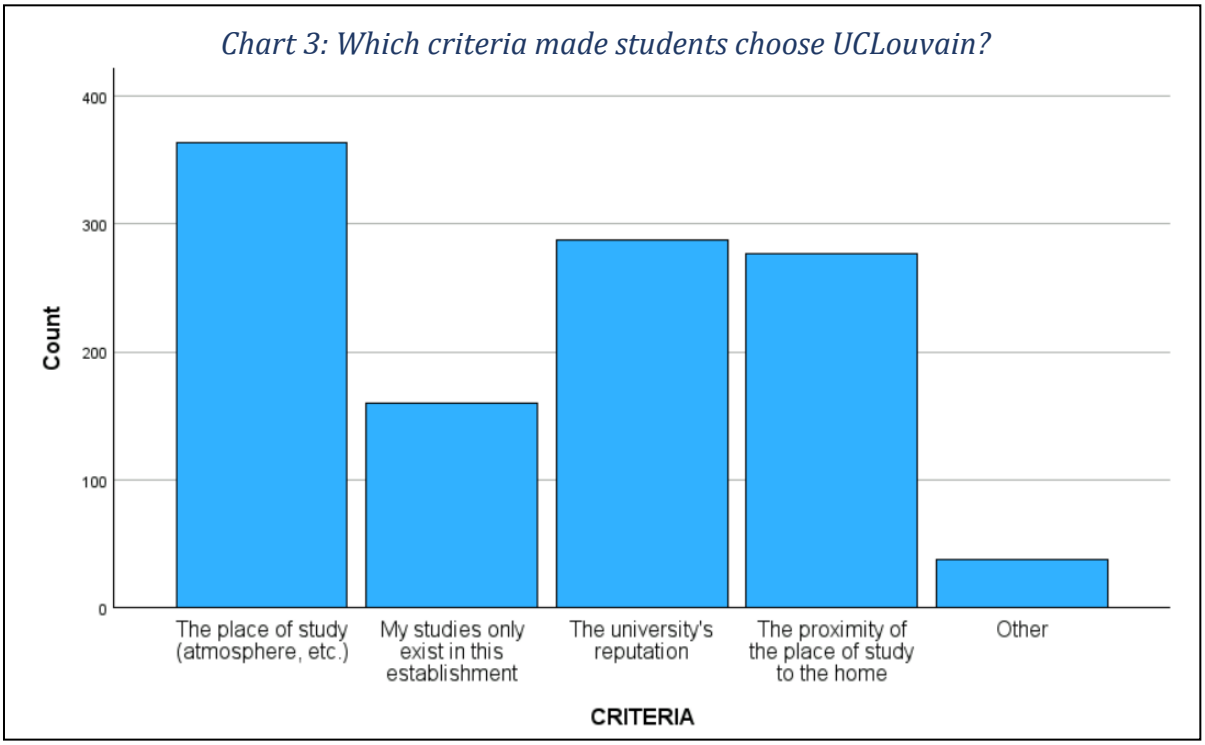


Chart 2 shows the student's answers to the following multiple-choice question: "Why did you choose to attend high school or university?" 31.7% of students chose university

because they found the courses more suited to university than non-university higher education institutions. 31.4% of students knew they wanted to study at university. For them, studying at university is a no-brainer. Only 10.5% of sample students choose university because it is more theoretical. Then, 5.9% of students think the study descriptions are more explicit at university. Moreover, 12.2% of students choose a university for other reasons, some of which regularly come up. The first was that only universities offer the studies that students want to do, as in the case of medical studies. The second is the university's reputation in relation to other non-university higher education establishments in Belgium. Many students are pushed by their parents because the university is "better seen". A particular social pressure is linked to the university's image from family and friends. This pressure pushes students to choose university regardless.

Chart 3: Which criteria made students choose UCLouvain?



Subsequently, the question of why students choose UCLouvain seems obvious. The multiple-choice question asked to students was: "What criteria made you choose your university or high school?" As Chart 3 illustrates, most students chose UCLouvain for its campus (32.3%), the university's reputation (25.5%), and its proximity to students' place of residence (24.6%). 14.2% of students come to the university for their studies because it only exists there. UCLouvain's strengths lie in its location, some of its courses' uniqueness, and reputation.

3.1.2. Parents influence

As mentioned earlier in the literature review, parents influence their children's education, both in their choice of studies and their influence on them (Vermandele and al., 2010). The rising percentage of parents with educational credentials contributes to an increase in the likelihood of access to university through a form of democratization characterized by segregation (Maroy & Van Campenhoudt, 2010).

A significant majority, 62% of students, indicated they were free to make their own choices in response to the question: "Do you think your parents had any influence on your choice between university and high school?" Conversely, 30.5% of students acknowledged that their parents expressed a preference for them to attend university. Interestingly, 7.5% of students asserted their independence by stating that they resisted parental influence and made their own decisions regarding the choice between university and high school. These findings underscore the diverse dynamics in the decision-making process, where a notable portion of students value and exercise autonomy in shaping their educational path.

Students enjoy the freedom to choose their field of study, although research by Vermandele and al. (2010) suggests a notable influence from parental education. The study indicates that if one of the parents has a university education, there is a higher likelihood that the child will pursue university studies. Hence, while students feel free to choose their studies, it is evident that their decisions are significantly shaped by the educational background of their parents, who serve as influential role models.

3.2. What factors reduce asymmetric information?

Various factors will be analyzed from the student's point of view. Therefore, the conclusion examines how this effectively reduces information asymmetry between students and the university. Various topics will be explored. However, not all the conclusions of van Outryve d'Ydewalle's thesis will be covered, as some do not directly impact students and cannot be analyzed from their perspective. In other words, specific issues of van Outryve d'Ydewalle's thesis, such as academic compliance if professors do not respect the course specification and the academic competition, are difficult to analyze for students. Students are unaware of this academic compliance and thus cannot give their advice. Among van Outryve d'Ydewalle's thesis conclusions, the analysis will focus on the

course specification; the evaluation of teaching by students; and world university rankings (UCLouvain's reputation); labels; and UCLouvain's transparency. Finally, other factors, such as emails, social networks, open courses, information days and fairs, will also be analyzed.

3.2.1. Course specification

A course specification is an essential tool for facilitating communication between teachers and students, written by course instructors (Le "plan de cours", n. d.). It enables students to record in writing the objectives they must achieve, the course content structure, the course's organization (deadlines, etc.), and the teacher's expectations regarding the material to be studied to pass the course exam. It is important to note that the course specification differs from the specifications, which set out the faculty's requirements and which the teacher must also follow scrupulously (Le "plan de cours", n. d.).

As it can be observed in our survey, 67.3% of students never read course specifications. Only a third of students (32.7%) read course specifications. 8.6% say they have already read it and noticed differences between the specification and the official course.

In another open question on this subject, several students pointed out that it helps students, but they do not always have access to this course specification. At UCLouvain, the course specification allows lecturers to report on their work over the academic year. Even if it is unavailable to students, the university advises professors to draw up one for the courses they are responsible for. Other students appreciate the course specification for the overall vision, structure, and direction of their course. They also see it as a small quantity of help in choosing one option over another or organizing their study session (also called "blocus" in French). Students who do not read it say it is useless to them and are indifferent to it. Finally, other students are more mixed in their opinions of the course specification, saying that it lets them know the direction the course is taking or that they like the concept. However, it is not essential, or that the teachers are too fussy about it to be bound by anything, or that they read it once at the beginning of the course, and then ignore it.

The literature review mentions that women are more sensitive than men to information asymmetry at a choice time or before an inscription (Agrey & Lampadan, 2014). Course specification can help to choose a future master or option by learning course information.

To check this, a chi-square test is used, which tests the hypothesis of independence between two random variables by examining whether there is a relationship between the actual count and the expected count (Yergeau & Poirier, 2019). If there is no difference, the count and expected count (E. Count) are identical. The count value is the value found through the survey, and the expected count represents the mean of the potential values that a random variable can assume. The expected count and count are illustrated in the Chart 4. A simple formula can calculate it.

$$Expected\ count = \frac{(column\ sum\ of\ count * line\ sum\ of\ count)}{Total\ sum}$$

Chart 4: Cross table of the gender of students and course specification

			COURSE SPECIFICATION			
			Yes, I read it and it was different from the course	Yes, I read it and it was the same as the course	No, I never read it	Total
GENDER	Feminine	Count	20	74	225	319
		E. Count	27.5	76.9	214.7	319
	Masculine	Count	35	80	205	320
		E. Count	27.5	77.1	215.3	320
TOTAL		Count	55	154	430	639
		E. Count	55	154	430	639

In order to perform the chi-square test, two hypotheses must be posed. The null hypothesis (H0) is the absence of a relationship between the two variables or the independence of the variables (*IBM documentation*, s. d.). In other words, the expected count and the count are the same. In our case, the null hypothesis is that there is no relationship between the variables gender and course specification. There is no difference between the genders. Hypothesis 1 (H1) states that the fact of being a man or a woman influences whether or not they read the course specifications. Suppose an observed difference between the count and the expected count is due to a random variation (*IBM documentation*, s. d.). The chi-square must be calculated with the following formula:

$$x^2 = \sum \frac{(count - expected\ count)^2}{expected\ count} \quad and \quad df = (\#\ lines - 1) * (\#\ columns - 1)$$

where X^2 = Chi-Square; df = degree of freedom; # = number of

Once the value of the chi-square test has been calculated, it is necessary to determine the degree of freedom, as the distribution of this test varies according to the degree of

freedom of the cross-tabulation (*Test de Chi-2 |*, s. d.). Then, compare the chi-square statistic with the chi-square distribution table (see Appendix 9), parameterized by the degree of freedom and the chosen significance level (usually $p < 0.05$). To find the value in the table, you must find the line of the df and the column of the error probability (0,05 here) (Eric Lombardot, 2021). This will enable you to decide whether or not to reject the null hypothesis, indicating the absence of a relationship. If the calculated chi-square exceeds the critical chi-square, H0 is rejected, and H1 is validated (Eric Lombardot, 2021). Another way to check our conclusion is to look at the asymptotic significance in the chart of the chi-square test. If this is smaller than 0.05, then the H0 hypothesis is rejected.

In our case, the chi-square value can be found in Chart 5. The calculated chi-square value is 5,253 for a df of 2. In the distribution table, the value of the critical chi-square is 5,991, and it is bigger than the calculated chi-square value. Thus, the H0 hypothesis is validated, and H1 is rejected. There is no relationship between the genders and the course specification. The variables are, therefore, independent. Being a man or a woman does not influence reading the course specification. The calculated value of the chi-squared test is between 4.605 and 5.991, corresponding to a probability of error of rejection of H0 between 10% and 5%.

Chart 5: Chi-square test of the variables gender and course specification

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.253 (a)	2	0.072
N of valid Cases	639		

(a) 0 Cells (0,0%) have expected count less than 5. The minimum expected count is 27.46.

To conclude this point, two-thirds of students of the sample are indifferent to the course specification, so even if it helps some, only one-fifth of students are satisfied with it. According to the teachers, a university can appear more transparent to students who read the course specification (van Outryve d'Ydewalle, 2023). For the students of the sample, this helps only very partially to reduce the asymmetry of information in education because they are indifferent to it. There are several problems with this, including the accuracy of the teachers and access to course specifications. However, teachers strongly recommend reading this course specification, as it can help students reduce information asymmetry (van Outryve d'Ydewalle, 2023).

3.2.2. Evaluation of teaching by students

Student evaluations of teaching are carried out at least once every three years, enabling students to give their opinions on the quality of teaching. At UCLouvain, a single standard questionnaire is organized online during the last two weeks of term (Évaluation des enseignements par les étudiants, s. d.). This survey provides a complete report on a teacher's teaching, as well as a complete report on a study program (Évaluation des enseignements par les étudiants-es, s. d.). This allows UCLouvain to have an idea of the quality of teaching perceived by their students.

As can be seen from the frequencies (see Appendix 7), 54.3% of students who have already completed a student evaluation find the evaluation of teaching by students helpful. 19.1% of the students in the sample have already completed one and find it unnecessary. 17.4% of students said they had not yet completed this type of questionnaire (students in their first year or those not yet at university but wishing to study at UCLouvain). 6.7% of students have already filled it in because it is compulsory. Given the figures obtained, student evaluations of teaching have a tangible impact on the information asymmetry between students and teachers.

In conclusion, student evaluation of teaching reduces information asymmetry between students and professors. The university possesses less information than the students in this context, and the purpose of these evaluations is to enable the university to gain insights into students' perceptions of teaching quality. Students can provide more information and build up feedback, both positive and negative. The latter then enables professors to adapt their courses in the limits of the framework given by the program committee (van Outryve d'Ydewalle, 2023). This process might enhance teaching, although it does not immediately benefit the students being evaluated. According to the teachers, not all feedback is relevant, but it remains useful and constructive (van Outryve d'Ydewalle, 2023).

3.2.3. World university rankings

Different university rankings exist, each with different criteria such as the number of students, participation in global research, academic reputation, teaching, employability, etc. (QS International, 2021). UCLouvain is ranked 68th among the best European universities and third compared with other Belgian universities in the QS ranking

(Quacquarelli Symonds ranking), which assesses universities in the world ranking in 2023 (UCLouvain stands out among European universities, n.d.). UCLouvain ranks 168th in the world university ranking in 2023 (Université catholique de Louvain, 2023). UCLouvain is 195th in the QS world university ranking in 2022-2023 (L'UCLouvain première université francophone belge, s. d.).

Students were asked, "Have you ever looked at the world university rankings before choosing your university?" In reply, 51% of students paid no attention to it, and 30.4% of students had already looked at it but paid no attention when choosing their university. Thus, 81.4% of students do not pay attention to it and it only matters for 18.6% of the UCLouvain students of the sample.

In conclusion, in my sample of French-speaking community of Belgium students, the world university rankings do not help students reduce information asymmetry when choosing their institution. Students of the sample ignore this type of information. Moreover, as mentioned earlier, university rankings do not entirely reflect the quality of teaching at universities but rather the research. Some professors believe rankings can create information asymmetry, as some universities have more money to spend on research (van Outryve d'Ydewalle, 2023). This confirms that they are more a reflection of the research quality of the institutions than a source of information for students choosing their studies.

3.2.4. Universities reputation

The reputation of universities, according to students, is essential. It is the opinion of the students or young people about the university. Students may rely more on the institution's reputation (word-of-mouth, press, etc.) than formal information about the university. UCLouvain's reputation comes from students at this university or brothers or sisters of students who are at UCLouvain, etc. As said in the literature review, a university reputation is also really important for the future student's employer because the university that the student chooses sends a signal to the companies that will eventually hire them.

According to students, the question regarding UCLouvain's reputation was asked as follows: "Have you paid attention to the reputation of your institution, whether through friends, family, or otherwise?" The replies reveal that 44.8% of students have been

exposed to UCLouvain's reputation but assert that it has not played a decisive role in their choices. On the other hand, 26.9% of students attribute their decision to choose UCLouvain for its reputation. Only 11.6% of students had no prior knowledge of UCLouvain before enrolling. Notably, 16.7% of students express that their understanding of the university's reputation has significantly enriched their knowledge.

A university's reputation significantly influences students' decisions, even amid a certain degree of information asymmetry. The diverse responses highlight how students engage with and consider a university's reputation during their decision-making process.

Chart 6: Cross table of gender of the students and university reputation by students

			REPUTATION				
			No, I chose this establishment without having heard of it	Yes, and that is why I chose my school	Yes, and it was a great help	Yes, but that did not influence me	Total
GENDER	Feminine	Count	34	83	52	150	319
		E. Count	36.9	85.9	53.4	142.8	319
	Masculine	Count	40	89	55	136	320
		E. Count	37.1	86.1	53.6	143.2	320
TOTAL		Count	74	172	107	286	639
		E. Count	74	172	107	286	639

As mentioned in the literature review, women prefer to have more information than men when choosing which university to attend. Thus, being a man or woman can be significant, according to the literature review. In Chart 7, a chi-square test is made to test the independence of the variable. The null hypothesis (H0) is that the variables are independent, and the hypothesis one (H1) is that the variables are dependent. The critical value in the distribution table is 7,815 (see Appendix 9). It is bigger than the calculated chi-square value (1,464), so the null hypothesis is validated. The variables are, therefore, independent. Being male or female makes no difference to reputation. We can observe it in the Chart 6 with the count of the genders.

Chart 7: Chi-square test of the variables gender and university reputation by students

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.464 (a)	3	0.691
N of valid Cases	639		

(a) 0 Cells (0,0%) have expected count less than 5. The minimum expected count is 36.94.

UCLouvain's reputation is not an efficient strategy for reducing information asymmetry. Many students say they do not value the university's reputation, even if they have heard of it. As written before, according to signal and filter theory, the key is to obtain a degree, with the university's reputation being the critical signal for future employers.

3.2.5. Labels

The label provides a sign of distinction that promotes the quality of education. To possess a label, demanding legal obligations must be met (Viard, 2017). UCLouvain has different labels for different faculties. The Louvain School of Management (LSM) has been awarded the EQUIS label (LSM has been awarded the EQUIS label for five years, n. d.). The AGRO (Faculty of Bioscience Engineering) and EPL (Louvain School of Engineering) faculties are accredited by the CTI (Commission des Titres d'Ingénieurs) (AGRO and EPL diplomas are accredited by the CTI, n.d.). Of course, UCLouvain has many other labels.

The answer to our question asking students if they had ever paid attention to the labels that certify teaching led to a majority response: 88.3% of students did not know what they were, and 11% had already seen one of these labels in the press but had not paid much attention to it. And only 0.8% of the student of the sample have even read the reports about labels and it is a great help for them. Students of the sample are not familiar with the labels.

Most sample students do not know labels, proving they cannot help reducing information asymmetry. Something students of the sample do not know or choose to ignore cannot help them. This means that if students see these labels next to the name of their university, they will not know that this can mean that the university provides quality education. For UCLouvain, it is practically useless, but it is more useful for students from abroad to Belgium's universities (van Outryve d'Ydewalle, 2023). Moreover, in general, in Belgium, it is not useful because the quality of education is certain compared to other countries (van Outryve d'Ydewalle, 2023).

3.2.6. Transparency

Transparency relates to an organization's openness to sharing its internal processes and decisions with external parties, irrespective of their involvement (Pasquier & Villeneuve, 2007).

In my survey, students had a definition of transparency and answered the following question: "Do you find higher education institutions transparent?" 52.3% of students in the sample said that perhaps the educational institution is transparent. 37.2% of students think that universities are not transparent. Only 10.5% of students think that the university system is transparent.

From the students' point of view, university transparency is not a strong point. This point on transparency shows us that information asymmetry is present in the university system.

3.2.7. Emails

At UCLouvain, students receive numerous emails for various reasons, such as courses, but also all sorts of surveys about the quality of teaching, rectoral elections, blood drives, administrative matters, student information, newsletters, job or internship opportunities, solidarity causes (earthquakes in Morocco), etc.

The question in the survey for the emails was: "What do you think of the information emails we receive via the student email address?" 28% of students only read course-related emails. 27.9% of students read emails relating to courses and major campus events. 14.6% of students read all emails, and 9.1% try to read them all but find that students receive too many. 12.2% of the students of the sample read one in two emails depending on their mood. Only 2.8% of students do not read their emails. None of the students only read emails relating to significant events on the UCLouvain campus.

In conclusion, emails help students of the sample to reduce information asymmetry. 55.9% of students read course-related emails, with approximately 28% reading also all emails relating to major campus events. Emails are, therefore, quite effective in reducing information asymmetry between students and teachers. The utilization of emails proves to be an effective strategy in mitigating information asymmetry, as students demonstrate a considerable level of receptivity to this form of communication. This receptiveness not only facilitates the dissemination of information but also enhances the overall effectiveness of communication channels within the educational context. The use of emails contributes to a more transparent and accessible flow of information, fostering a favorable environment for students to stay informed and engage with relevant updates and announcements.

3.2.8. Social Network

UCLouvain maintains a presence on several social media platforms, including Facebook, X (formerly Twitter), LinkedIn, YouTube, TikTok, and Instagram (*UCLouvain on social media*, s. d.). The university actively engages in podcasts covering various topics, such as the town of Louvain-la-Neuve, campus life, and political sciences (Podcasts & projects, n.d.). Additionally, UCLouvain is featured in various press outlets, contributing to discussions on various subjects (Media, n.d.). This multi-faceted approach ensures the university reaches diverse audiences through different channels, fostering engagement and communication on various platforms.

When asked about their opinions regarding social media campaigns to provide information about various higher education programs, students responded with 47.9% expressing interest in UCLouvain's social media. They noted that it serves as an eye-opener to new programs. On the other hand, 40.1% of students indicated that they did not pay attention to these campaigns.

Chart 8: Cross table of gender of the students and university social networks

			SOCIAL NETWORK				
			It bothers me	It bothers me because it is linked to a political message	It is interesting! It opens your eyes to new trainings courses	I do not pay any attention to it	Total
GENDER	Feminine	Count	6	16	180	117	319
		E. Count	13	25.5	152.8	127.8	319
	Masculine	Count	20	35	126	139	320
		E. Count	13	25.5	153.2	128.2	320
TOTAL		Count	26	51	306	256	639
		E. Count	26	51	306	256	639

To perform this chi-square test and test the independence of the variables, the same method as for the previous chi-square tests is used. H0 postulates the absence of a relationship or independence between the variables, as indicated in the IBM documentation. In our context, H0 states that there is no relationship between gender and the social network variables, meaning that there is no distinction between genders. Hypothesis H1 asserts that an individual's gender, whether male or female, plays a role in determining their propensity to scroll and see on social networks UCLouvain publications.

Through chi-square tests (Chart 9), a dependency between the variables is observed. The distribution table (see Appendix 9) reveals that the calculated chi-square is greater than the critical chi-square.

The responses from men and women to these two questions are interdependent, suggesting that gender influences their response, following the observations from the literature review.

Chart 9: Chi-square test of the variables gender and university social networks

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	26.035 (a)	3	<0.001
N of valid Cases	639		

(a) 0 Cells (0,0%) have expected count less than 5. The minimum expected count is 12.98.

Our literature review shows women are more sensitive to asymmetric information when making choices. Chart 8 illustrates that women exhibit a higher sensitivity to the type of information compared to men. Women really find social networks opens the eyes to new training courses. Social networks are essential in helping the women in our sample to inform themselves.

Given that our variables are dependent, Cramer's V allows to determine the strength of the relationship between the gender and social network variables (Yergeau & Poirier, 2019). Cramer's V is a measure of association calculated from chi-square. Cramer's V is calculated as follows (Baudot, s. d.):

$$Cramer's\ V = \sqrt{\frac{x^2\ value}{x^2{}_{MAX}}} = \sqrt{\frac{x^2\ value}{n * (s-1)}}$$

Where n = total count, s = smallest number between the number of columns or lines

Cramer's V is between 0 and 1 (Baudot, s. d.). If the value is closer to 0, the relationship is weak; conversely, if the value is closer to 1, the relationship is strong. More precisely, if the value of the Cramer's V is less than 0.20, the relationship is weak; between 0.20 and 0.60, the relation is moderate; and greater than 0.60, the relationship is strong (*IBM documentation*, s. d.-b). In Chart 10, the latter has a value of 0.202. This means that the relationship is medium. In the Chart 10, the Phi value can be observed. This value is not

used because it is only suitable for dichotomous variables, which is not the case here, unlike Cramer's V, which accepts more variables.

Chart 10: Cramer's V of gender and university social networks

		Value	Approximate Significance
Nominal by Nominal	Cramer's V	0.202	<0.001
N of valid Cases		639	

According to the figures obtained, social media represents an excellent strategy to mitigate information asymmetry. The diversity of usage on these platforms fosters the development of critical thinking, benefiting from various reception activities (The youth, social media experts?, n.d.). Through this curiosity and critical thinking, young individuals, especially students, acquire much information through UCLouvain's social media networks.

3.2.9. Open courses, information days and fairs

UCLouvain provides a diverse array of opportunities for prospective students. The university offers numerous open courses during the Autumn and relaxation breaks, covering various disciplines such as biological sciences, chemical sciences, geographical sciences, mathematical sciences, physical sciences, and veterinary medicine (Open Courses 2023-24, n.d.). Moreover, UCLouvain actively participates in various events and information sessions, including those organized by SIEP (Study Information Fairs, n.d.). The university ensures ample information is disseminated in secondary schools through evenings and fairs dedicated to higher education (Evenings and fairs for higher education information, n.d.). Many open courses, information days, and fairs exist for UCLouvain and all universities.

To further facilitate engagement, UCLouvain organizes a variety of activities both in-person and online. These include virtual discussion forums, orientation sessions, campus visits, and more (Information and discussion forums, n.d.). This extensive outreach effort is conducted across the different UCLouvain campuses, demonstrating the university's commitment to providing comprehensive information and support to individuals considering higher education (Information meetings, n.d.).

Two questions were asked in the survey: "Have you ever participated in open courses at a university?" and "Have you ever attended information days or study fairs?" 50% of

students in the sample have never participated in open courses with 7.7% of the student of the sample who do not know it existed. 50% of students have attended open courses, but only 21.8% found it helpful. 51% of students found information days and fairs interesting, while only 29.1% of students were not interested in them, find it pointless. 14.6% of the sample's student do not go to fairs but would like to. Events such as fairs and information days reduce information asymmetry between students and the university when choosing their universities.

Chart 11: Cross table of gender of students and open courses

			OPEN COURSES				
			I did not know it existed	No, I have not tried	Yes, it did not do me much good	Yes, and it was very interesting	Total
GENDER	Feminine	Count	32	118	92	77	319
		E. Count	24.5	134.8	90.4	69.4	319
	Masculine	Count	17	152	89	62	320
		E. Count	24.5	135.2	90.6	69.6	320
TOTAL		Count	49	270	181	139	639
		E. Count	49	270	181	139	639

Chart 12: Cross table of gender of students and fairs

			FAIRS						
			No, it is pointless	No, but I would like to	Yes, it did not do any good	Yes, it was a great help	Yes, and it was interesting	Others	Total
GENDER	Feminine	Count	22	48	51	28	157	13	319
		E. Count	28.5	46.4	64.4	24	138.8	17	319
	Masculine	Count	35	45	78	20	121	21	320
		E. Count	28.5	46.6	64.6	24	139.2	17	320
TOTAL		Count	57	93	129	48	278	34	639
		E. Count	57	93	129	48	278	34	639

As the other variables, and as open courses, information days and fairs are variables that influence students' choice of studies. Check whether women exhibit greater sensitivity to this type of information than men, as indicated in the literature review. To see this, a chi-square test was performed. H0 suggests the absence of a relationship or independence between the variables. In our specific context, H0 asserts no association between gender and open courses or fairs variables, indicating a lack of differentiation based on gender. H1 proposes that an individual's gender, whether male or female, influences their likelihood of going to open courses or fairs. The count and the expected count for the open courses and the fairs are in the Chart 11 and 12. In the Chart 13 and 14, the chi-square is

calculated. Thanks to the distribution table (see Appendix 9), the calculated chi-square (16.589 for open courses and 10.540 for fairs) is bigger than the critical chi-square (7,815 for open courses and 11,070 for fairs). H0 is therefore rejected and H1 validated. Being a woman or a man influences whether or not you have already taken part in open courses, information days and fairs. The variables gender and open courses and gender and fairs are dependent on each other.

Chart 13: Chi-square test of variables gender and open courses

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.540 (a)	3	0.014
N of valid Cases	639		

(a) 0 Cells (0,0%) have expected count less than 5. The minimum expected count is 24.46.

Chart 14: Chi-square test of variables

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	16.589 (a)	5	0.005
N of valid Cases	639		

(a) 0 Cells (0,0%) have expected count less than 5. The minimum expected count is 16.97.

As our variables exhibit dependence, Cramer's V enables us to assess the strength of the relationship between gender and social network variables. If Cramer's V is below 0.20, the relationship is considered weak (*IBM documentation*, s. d.-b). In the range of 0.20 to 0.60, the relationship is classified as weak; a value exceeding 0.60 indicates a strong relationship (*IBM documentation*, s. d.-b). Charts 15 and 16 respectively show the value of Cramer's V which is 0.128 for the open courses and 0.161 for the fairs. The relationships for both questions are weak. However, a distinction between men and women is evident, as illustrated in Charts 11 and 12. Women more often find open courses, information days and fairs useful. It therefore confirms, as in the literature review, that women are more sensitive to asymmetric information.

Chart 15: Cramer's V of gender and open courses

		Value	Approximate Significance
Nominal by Nominal	Cramer's V	0.128	0.014
N of valid Cases		639	

Chart 16: Cramer's V of gender and fairs

		Value	Approximate Significance
Nominal by Nominal	Cramer's V	0.161	0.005
N of valid Cases		639	

In conclusion, fairs, open courses, information days, and other initiatives are essential in reducing information asymmetry for students. UCLouvain offers a variety of opportunities in this regard, and it is encouraging to see that students are receptive to them. These initiatives provide valuable information to students in the university selection phase and foster a proactive connection between the institution and its student community.

Conclusion

Conclusion

Based on the literature review, it is difficult to explain precisely why students choose one academic institution over another. A whole range of reasons are responsible for their choices. Students have multiple choices for their studies. They can often feel lost. The asymmetry of information does not help them in their choice. The uncertain future, the diploma they can obtain, and the level of training provided by education give students goals for their studies. According to Marcia, their status and life stage make them more or less inclined to study. The Economics of Education field of study helps students make their university choices. Students may choose to study for an extra year if the extra income they will get from studying more is greater than the salary the student would have got from working instead of studying. They will also study if they get greater satisfaction from studying or working. Various attempts have been made to reduce information asymmetry, including course specifications, student course evaluation, world university ranking, labels, and transparency. On the demand side, students are influenced by a variety of factors, such as selection for certain courses of study, financial considerations, family background, audience size, the social role played by education, the economic role (higher salaries, etc.), the proximity of the educational establishment to the student's place of residence, the student's gender and educational background.

Furthermore, Students of the sample go to university because, in their opinion, the courses are more suited to university and because they know deep down that they want to study at university. More specifically, they choose UCLouvain for its campus, the university's reputation, and the proximity of the place of study to their residence. UCLouvain must keep is reputation and keep the atmosphere on their campus according to students of the sample of French-speaking community of Belgium students.

Based on the empirical part of this thesis, it is evident that certain methods of reducing information asymmetry prove more effective for UCLouvain, whether from the supply or demand perspective. Various elements are implemented to reduce information asymmetry, such as course specifications, student evaluation of teaching, etc. However, according to students of the sample, only student evaluation of teaching is really effective. Information asymmetry between students and the university is also reduced by other factors, such as email, open courses, information days and fairs, and social networks.

Finally, thanks to the literature review and the empirical part of this dissertation, various elements are more useful to people of the female gender than the male. In the literature review, it was found that women are more sensitive to information asymmetry when making choices during their studies. The analysis section noted elements such as social networks, open courses, information days and fairs. Other factors influence fewer women at choice time, such as the university's reputation and course specification. Is there a real necessity to make a difference between men and women for those factors to reach other parts of the population? Do university authorities need to difference them?

Study limitations

The results of this study are significant, but it is essential to recognize and explain their limitations.

Firstly, the main limitation lies in the voluntary nature of the survey participants. Indeed, the sample comprised solely of people who chose to respond voluntarily. This characteristic raises questions about the sample's representativeness, as it plausible that students who are less successful at university or high school may have been less inclined to participate. Thus, the conclusions drawn from the survey could be slightly biased in favor of a specific population.

A second important point concerns the methodology used to collect replies, most of which were collected via the Facebook platform. This approach could introduce a bias, as Facebook users may not faithfully represent the diversity of the student body. Consequently, the results could be influenced by the specific characteristics of those active on this platform, potentially excluding other groups. However, this limitation is not a strong constraint, as 68.9% of people over the age of twelve in Belgium use Facebook (Degraux, 2023). Moreover, Facebook is widely used in the university context for its accessibility, practicality, and ease of communication (Mélot and al., 2017). Despite this, the fact that the majority of the survey was distributed via networks still represents a bias. Because of the networks' algorithms, not all students have the same chance of responding to the survey.

Finally, the last limitation concerns the freedom of interpretation of questions by participants. The answers obtained may be influenced by subjective interpretations, leading to variability in the data collected. This variability can make it difficult to establish

clear, objective relationships between the variables studied. This can lead to a variation in responses.

Although this study provides interesting insights, awareness of the above-mentioned limitations is essential for accurately interpreting the results.

Further research

The constant evolution of contemporary markets, particularly in the context of education, raises important questions as education shapes the young workers of tomorrow. This raises several questions for future research into information asymmetry in education.

The first point is that the emergence of a parallel market to control quality and reduce information asymmetry raises a fundamental question: How far should this control mechanism be extended? At present, one market is created to control another. How extensive should one go? Should another parallel market be established to supervise the initial market, supervising the market of evaluation of education (Vinokur, 2006)? This raises numerous ethical, economic, and organizational questions.

The second perspective focuses on whether more information necessarily leads to better management of information asymmetry, even if reducing information asymmetry altogether is complicated. The principle that "too much information kills information" underlines the need to determine the right balance. How much information is enough to make informed decisions without being overwhelmed by complexity? This line of research could explore the concepts of "information overload" (Studialis, n. d.). Could this lead to more inequality with information asymmetry than is currently the case?

Finally, what regulatory mechanisms are needed to prevent the uncontrolled proliferation of these parallel markets? Is additional information necessary?

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