

IPVC Student: Indices of Attractiveness, Loyalty and Student Satisfaction

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ABSTRACT

Attractiveness and student loyalty are determinant for the sustainability of Higher Education Institutions as it contributes to the number of students who seek and preserve their connection to the institution.

The main objective of this study is to analyse course attractiveness and student loyalty, in the last five years, in the Instituto Politécnico de Viana do Castelo (IPVC).

The demand, student dropout rate and pursuance of studies and satisfaction with teaching and services were analysed, linking them to student profiles and organizational context.

Dropouts in Professional Higher Technical Courses (CTeSP) and Bachelor's Degree occur mainly within the masculine gender and in the first year; in Masters', this occurs mainly in the 2nd year and in the feminine gender. In 2013/14, dropouts reached their highest level and students' enrolment in National Call reached its lowest number of the last 8 years, coinciding with the peak of the economic crisis. 60% of CTeSP graduates go on to Bachelor's and 25% of graduates carry on to Master's.

Keywords: demand, student profile, dropout, student loyalty, pursuance of studies

1. Introduction

In the last few decades, the system of higher education in Portugal has undergone profound, structural changes with a substantial increase in the number of Higher Education Institutions (HEI) [1]. Public funding of HEIs has been reduced, being partially based on the number of students. Attractiveness and student loyalty are crucial to having key performance indicators (KPIs). By applying the appropriate strategy, offering resources to improve the quality of activities that are important to students, administrators can increase the value offered and contribute to student loyalty by ensuring the institution's sustainability [2]. Standifird [3] refers that reputation management is also considered very important in attracting and retaining students.

Student loyalty is generated by overcoming expectations in relation to the received experience. Identifying the reasons for non-retention allows for the implementing of solutions to mitigate the causes and maintain the student-client [4]. Retention is the "ability of HEI to successfully graduate students who enrol" [5]. Abandonment is one of the major problems of HEI, and it is fundamental that strategies be implemented in order to reduce it [6, 7]. Student loyalty is influenced by "psychological attachment" and a feeling of institutional pride [8]. Satisfaction and institutional reputation contribute strongly to loyalty [9, 10]. According to [9, 11-13], loyalty is maintained through the development of values between the institution and the individual, driven by personal relationships guided towards maintaining long-term relationships.

The relationship between HEI and students is fundamental, as well as with candidates, graduates, parents, companies and partner schools, teachers and employees. The HEI must carefully manage these relationships, as each one is a potential multiplier in the dissemination of the institution [14]. Parents are the ones who often choose the HEI [15]. Future employers create close relationships with HEI through their immersion in student training and hiring of graduates.

Kotler and Fox [16] state that "retaining enrolled students is as important as attracting them for registration." Satisfaction is defined by student experience at the institution and satisfied students are motivated in maintaining their relationship with and defending the name of the HEI, as well as in attracting

new students by conveying positive information and even returning to the HEI to undertake other courses [14, 17-19].

It is imperative that strategies of loyalty be implemented and not simply those of prospecting; gaining new students is not enough, it is necessary that they be retained, by winning their loyalty in the short, medium and long terms. Student satisfaction must be sustained by the following four variables: course, services, people and environment, which should be evaluated in an integrated way for the continuous improvement of satisfaction, loyalty, recommendation and engagement. HEIs are confronted with increasingly competitive and commercial environments, with strategic planning and management focused on the quality of education and its services, the means to gain recognition and a more competitive advantage [20]. Martensen *et al.* [21] report that students have very high yet inexplicit expectations, which makes analyses more complex. The measurement of satisfaction is unreliable if it is based solely on one variable from the perspective of consumer behavior [22, 23].

Teaching and course organization are the main determinants of student satisfaction and student loyalty among the more academic components of the educational service [24]. [25] confirms the assertion that student satisfaction is the most effective factor that influences positively on students' loyalty, meaning the more satisfied students are, the more loyal they will become.

1.1 Methods

The aim of this study is to analyse the results obtained with the indicators of attractiveness, student loyalty and satisfaction, used in the IPVC Management System, within organizational and socioeconomic contexts and its impact on institutional performance. It was applied to the courses of CET-Course of Technological Specialization (until 14/15), CTeSP since 15/16, degrees and masters, of the 6 schools of the IPVC (ESA-Agrarian School, ESCE-School of Business Sciences, ESDL-School of Sport and Leisure, ESE-School of Education, ESTG-School of Technology and Management, ESS-School of Health).

In order to study attractiveness, the demand for Bachelor's degrees between 2010/2011 and 2017/2018 were analysed, as well as potential and real occupation of vacancies, admissions (particularly the 1st phase and 1st option), actual registrations, and entry grades. In the CET / CTeSP and Master's degrees, only enrolments were taken into consideration.

In order to study student loyalty (indicators of belonging and engagement) data on dropout rates between 2013/2014 and 2017/2018 were analysed, as well as the rate of the pursuance of studies at the IPVC. Dropouts (withdrawals or non-renewal of enrolments) and the results of surveyed, dropout students were studied to assess the causes and verify the possibility of reversing this decision.

In relation to the pursuance of studies, CTeSP graduates who go on to do Bachelor's degrees in the IPVC were analysed as well as those Bachelor's degrees that go on to do Master's Courses at the IPVC.

An analysis was also made of the survey results: student satisfaction with quality of teaching and support services; Bachelor's degree satisfaction with courses and contribution to employment.

2. IPVC Attractiveness and Student Loyalty

2.1 IPVC Attractiveness: Candidates and enrolees

The period with the lowest number of National Call (CNA) candidates and enrolees, as well as Masters and CET / CTeSP enrolees occurred between 13/14 and 15/16, coinciding with the economic crisis (Table I). Similar to the GDP's recovery, there was also an increase in the demand for courses, with 82% of vacant CNAs being occupied in 2017/18. In 2013/14, the % of students enrolled (CNA) reached its lowest value (61% occupancy). The percentage of candidates for 1st option/1st phase increased, with emphasis on Tourism, Management and Nursing with higher rates of attractiveness. The % of candidates from the District of Viana do Castelo to Higher Education, which apply to the IPVC is circa 23% and is seen as an opportunity to attract more students from the district.

Table I. IPVC admissions, placements and enrolment in degrees between 2010/11 and 2017/18.

Total IPVC	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18
Bachelor Enrolees								
No. Vacancies	936	941	991	956	932	956	956	973
No. Candidates 1st phase/1st option (CNA)	622	505	428	354	310	292	332	407
No. Candidates 1st phase (CNA)	3244	2725	2239	1768	1701	1949	1837	2404
No. Candidates (Total CNA)	4741	4409	3383	2687	2651	2835	2823	3717
No. Enrolees CNA	409	385	315	288	262	277	281	298
No. Enrolees in Special Contests	722	653	556	502	516	548	598	656
No. Enrolees CNA + Special Contests	985	921	874	739	776	796	882	973
Placements 1st phase CNA/CNA vacancies	77%	69%	56%	53%	55%	57%	63%	67%
Placements 1st op/1 st phase CNA/CNA vacancies	44%	41%	32%	30%	28%	29%	29%	31%
Enrolees CNA/CNA Vacancies	83%	80%	64%	61%	63%	64%	70%	82%
Enrolees Spec. Contest/CNA vacancies	24%	21%	20%	45%	24%	40%	20%	23%
Candidates 1st phase 1st op/CNA vacancies	66%	54%	43%	37%	33%	31%	35%	42%
Candidates 1st phase/CNA vacancies	347%	290%	226%	185%	183%	204%	192%	247%
Average entry grade 1st phase CNA	121.8	118.4	126.1	117.6	119.7	118.5	118.2	118.5
CET/ CTeSP Enrolees	-	-	413	330	305	300	403	389
Master's Enrolees	-	-	438	375	314	275	336	292

2.2 Student loyalty: Dropout rate

In the analysis carried out in relation to course dropout vs IPVC dropout rate, there is a significant reduction in the last 5 years (Chart 1). Only 1 to 2% of students who leave an IPVC course go to another IPVC course, meaning that students who leave the course leave the IPVC.

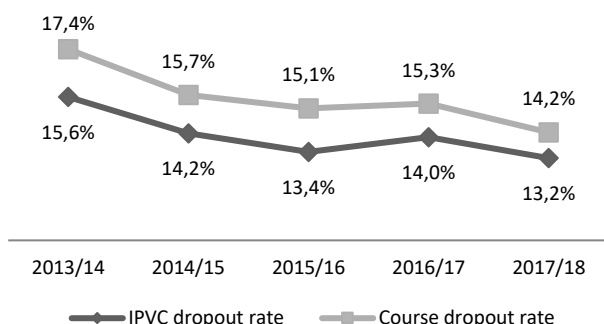


Chart 1. Evolution of dropout rate in the IPVC from 2013/14 to 2017/18.

Taking into consideration gender, the dropout % is higher among males (Chart 2), in accordance with Bourdages [26]. In the CET/ CTeSP and Bachelor's degrees male dropout rates are higher whereas in the Masters it is the female gender.

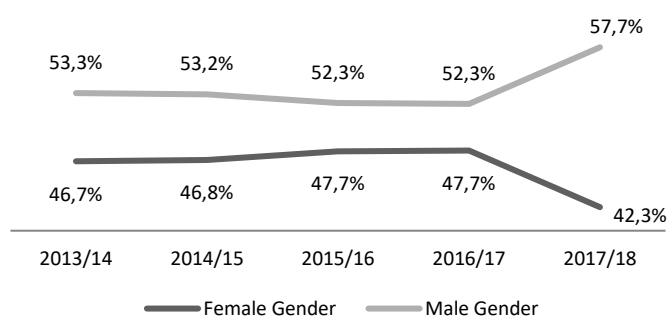


Chart 2. Evolution of IPVC dropout rate by gender.

Dropouts occurred more in CET courses, followed by Masters and CTeSP (Chart 3). The CTeSP that replaced CET courses tend to have a lower dropout rate than the latter.

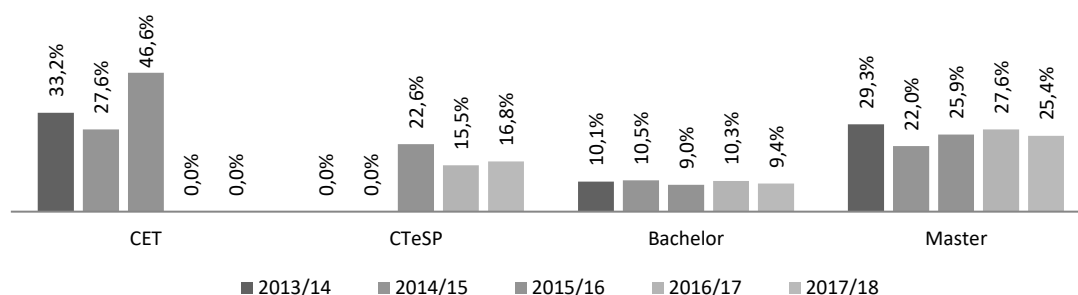


Chart 3. Evolution of IPVC dropouts by types of training (CET, CTeSP, Bachelor's Degree and Master).

The average dropout rate in IPVC Bachelor's degrees (9.9%) is lower than the national average (29%) [27]. It is worth highlighting low dropout rates in ESE's Master's degrees and ESS Bachelor's degree. [26] also refers to reduced dropout rates in health courses. Dropout occurs mainly in the 1st curricular year in CET and Bachelor's Degree Courses (Table II), which coincides with studies by UTAD [28] and Rego *et al.* [29]. The highest dropout in the first year may be due to difficulties or problems in the transition and adaptation to HE or rejection of scholarships [30-33]. In the Master's degree, there is a trend towards greater dropout in the 2nd year. Bourdages [26] states that in doctorates (the same can be applied to Master's degree thesis), the difficulties that arise around the drafting of the thesis are related not only to students' choices, but also to their supervisors' commitment and the HEI's strategy in guidance management of theses and connection to lines of research. Sternberg [35] explains that dropout during the thesis - Mah's Attrition Process Model occurs in students who are more distant from the course and whose obtaining a diploma no longer constitutes a priority in their life project.

Table II. Evolution of the dropout rate per curricular year (distribution %).

Typology	2013/14			2014/15			2015/16			2016/17				2017/18				
	1	2	3	1	2	3	1	2	3	1	2	3	4	1	2	3	4	
CET	100,0%	-	-	100,0%	-	-	100,0%	-	-	-	-	-	-	-	-	-	-	-
CTeSP	-	-	-	-	-	-	100,0%	-	-	78,3%	21,7%	-	-	-	-	-	-	-
BACHELOR'S DEGREE	61,2%	15,2%	23,5%	65,4%	15,8%	18,8%	56,2%	22,2%	21,6%	51,0%	20,9%	27,6%	0,6%	68,4%	15,0%	16,3%	0,3%	
MASTER	50,2%	49,8%	-	47,8%	52,2%	-	43,1%	56,9%	-	43,7%	56,3%	-	-	38,4%	62,3%	-	-	-
	65,7%	23,4%	10,9%	67,4%	22,2%	10,3%	60,4%	28,8%	10,8%	53,1%	32,6%	14,1%	0,3%	60,4%	31,5%	8,1%	0,2%	

The number of scholarship holders (DGES-MCTES scholarships) increased (Table III), representing 41% in 17/18 of IPVC students, which shows a student profile with needs in terms of financial support applying for the institution. Out of the total number of scholarship holders, between 4.5% and 5.5% drop out.

Table III. Evolution of dropout rate in IPVC scholarship students.

Course Dropout with Scholarship	2013/14	2014/15	2015/16	2016/17	2017/18
% of scholarship holders at IPVC	34,8%	35,1%	37,7%	39,2%	41,0%
% DGES scholarship dropouts	5,3%	4,5%	5,5%	5,3%	5,0%

Students housed in IPVC residences are around 12%, with a low dropout rate and a tendency to decrease (from 6.5% to 2.7%) (Table IV).

Table IV. Evolution of dropout rate in students housed in IPVC residences.

Student dropouts with Student Housing (%)	13/14	14/15	15/16	16/17	17/18
IPVC Students with housing	12,9%	6,8%	12%	12,5%	12,1%
Dropout with housing/ with housing	6,5%	3,1%	2,9%	4,1%	2,7%
Dropout without housing/ without housing	16,8%	14,9%	14,7%	15,3%	14,5%
Dropout with housing/ IPVC dropouts	4,7%	1,4%	2,3%	3,3%	2,2%
Dropout without housing/ IPVC dropouts	95,3%	98,6%	97,7%	96,7%	97,8%

The lowest dropout rate in scholarship holders and IPVC lodgers concurs with [36], who report that students who are financially supported by scholarships have a lower risk of dropout, and with [37,38] who conclude that financial support for students is decisive for course completion and the time it takes to

complete said course. There are less dropouts in students whose parents have a HE, in particular the mother (Table V), in agreement with Lassibille and Gómez's results [36].

Table V. Evolution of dropout rate according to parents' schooling.

Parents' Schooling	13/14		14/15		15/16		16/17		17/18	
	F	M	F	M	F	M	F	M	F	M
With Higher Education	7,2%	11,2%	7,0%	9,7%	7,5%	11,5%	7,4%	11,9%	9,1%	12,6%
Without Higher Education	92,8%	88,8%	93,0%	90,3%	92,5%	88,5%	92,6%	88,1%	90,9%	87,4%

The number of students enrolled with student worker status (SW) is around 11% and the number of SW who leave the IPVC has also been decreasing (Table VI), being 17/18 at 15.1%.

Table VI. Evolution of dropout rate in student workers.

Dropout rate in student workers (%)	13/14	14/15	15/16	16/17	17/18
SW at the IPVC	11,4%	10,6%	11,2%	8,5%	11,2%
SW dropouts / dropouts total	12,6%	13,4%	14,9%	10,5%	12,0%
SW dropouts / total enrolled	2,2%	2,1%	2,3%	1,6%	1,7%
SW dropouts / SW enrolled	19,2%	19,8%	20,3%	19,0%	15,1%

In the Bachelor's degree courses, it was established that the dropout rate is significantly lower when the student enters the course as a first option in the CNA and increases (Chart 4).

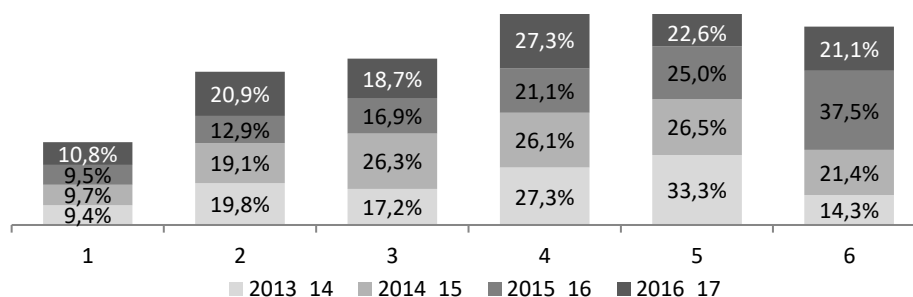


Chart 4. Evolution of dropout rate due to application options 2013/14 and 2016/17.

Dropouts are also related to the admission phase and are lower in students of the first phase of the CNA. Those who enter by >23 years present a higher dropout rate (Table VII). Lassibille and Gómez [36] verified that HE students coming from vocational schools leave more than those from regular schools. They also concluded, as in the IPVC study, those students who enter their 1st option and with parents with HE were also less likely to drop out.

Table VII. Students enrolled in the IPVC who left the courses in the year of admission.

Admission Bachelor's Degree regime vs. dropouts 1st curricular yr	13/14	14/15	15/16	16/17	Average
% 1st phase CNA Enrolees who dropped out in 1st year	10,9%	11,9%	10,5%	14,0%	11,8%
% 2nd phase CNA Enrolees who dropped out in 1st year	17,7%	23,5%	19,4%	22,1%	20,7%
% 3rd phase CNA Enrolees who dropped out in 1st year	37,9%	28,6%	23,8%	20,0%	27,6%
% CNA Enrolees who dropped out in 1st year	14,1%	16,1%	13,2%	16,2%	14,9%
% CET Enrolees who dropped out in 1st year	18,5%	17,6%	8,9%	7,1%	13,0%
% >23 Enrolees who dropped out in 1st year	26,4%	32,1%	31,2%	20,8%	27,6%

Relating dropouts to the admission grade, we can ascertain that students who enter the Bachelor's Degree course with lower grades are more likely to drop out (Table VIII).

Table VIII. Evolution of dropout rate in Bachelor's degrees by admission grade.

Admission grade	13/14	14/15	15/16	16/17
≥ 90,0 < 110,0	17,6%	25,0%	32,0%	17,2%
≥ 110,0 < 130,0	15,2%	18,4%	15,5%	15,8%
≥ 130,0 < 150,0	13,5%	13,6%	9,0%	17,4%

≥ 150,0 < 170,0	9,7%	7,4%	2,9%	11,4%
≥ 170,0 < 190,0	0,0%	0,0%	66,7%	0,0%

2.3 Student loyalty: Pursuance of studies at the IPVC

The pursuance of studies is used by the IPVC as an indicator of student loyalty, in addition to "non-abandonment". There is a trend of increasing enrolment in Bachelor's degrees by CTeSP graduates.

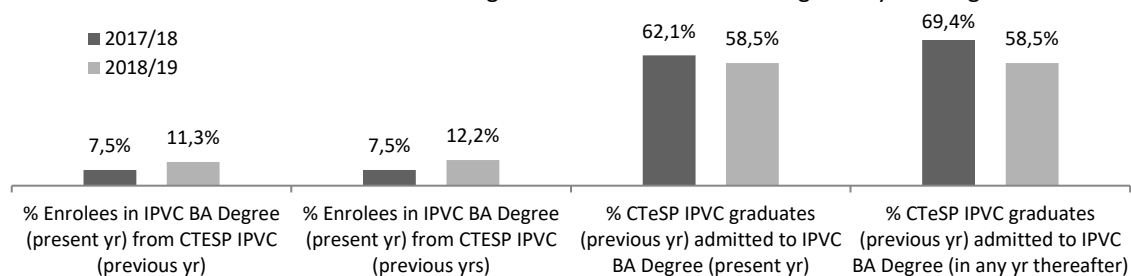


Chart 5. Evolution of the pursuance of Bachelor's Degree studies to IPVC Masters.

On average, in the 5 years under analysis, 25% of IPVC graduates enrolled in IPVC Masters, 20% of those enrolled in IPVC Masters are IPVC graduates, the remaining 80% in other HEIs, and 17% in each year in IPVC Masters are IPVC graduates from the previous year. The year with the lowest level of pursuance of studies was 15/16.

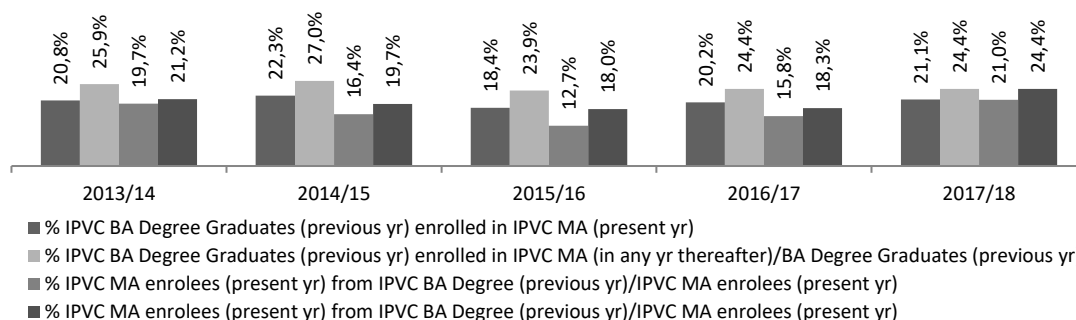


Chart 6. Evolution of the pursuance of Bachelor's Degree studies to IPVC Master Courses.

Most graduate students continue their MA studies in the same school, such as ESE, ESDL and ESTG (Table IX).

Table IX. Transition between schools in pursuance of Master's Degree.

		MASTERS					
		ESA	ESE	ESS	ESCE	ESDL	ESTG
DEGREES	ESA	91%	0	0	0	0	1%
	ESE	0	99%	17%	11%	2%	5%
	ESS	0	0%	83%	0	2%	0
	ESCE	0	0%	0	64%	0	4%
	ESDL	0	0	0	0	91%	0
	ESTG	9%	1%	0	25%	5%	90%

In the survey carried out among graduates, the main reasons for the pursuance of studies in the IPVC were: proximity to home, satisfaction with training (quality of teaching staff, school organization, teacher-student relationship), complementary training offer. More than 83% of the 1st cycle graduates responded that they would recommend the course they undertook in the IPVC.

2.4 Student satisfaction

The average degree of course satisfaction of IPVC students is 3.02 (on a scale of 1 to 4), an average of the four academic years from 13/14 to 16/17, with the lowest average in Bachelor's degrees (2.89) and the highest in the CTeSP (3.11) (Table X). Satisfaction with teaching staff has the highest rates.

Table X. Student satisfaction with quality of education, obtained through survey (IASQE-IPVC).

Evaluation criteria for Teaching satisfaction	13/14	14/15	15/16	16/17	IPVC Avg. Overall	Average		
						CTeSP	BA degrees	Masters
School	2,9	2,7	2,8	2,9	2,8	2,9	2,6	2,9
Integration, services, communication	2,9	2,7	2,9	3,0	2,9	3,0	2,8	2,9
Course	3,0	3,1	3,0	3,0	3,0	3,1	2,9	2,9
UC's 1st semester	3,1	3,0	3,0	3,1	3,0	3,1	2,9	3,1
UC's 2nd semester	3,0	3,1	3,1	3,2	3,1	3,2	3,0	3,1
Teacher 1st semester	3,2	3,1	3,2	3,3	3,2	3,2	3,0	3,3
Teacher 2nd semester	3,1	3,0	3,2	3,3	3,1	3,3	3,0	3,2
Average	3,0	3,0	3,0	3,1	3,0	3,1	2,9	3,1

Satisfaction with services is, in general, very positive, especially the Health and Cultural Offices (Table XI). There has been a slight decrease in the last year, in relation to food and scholarships, and in this last item the main reason being the delay in allocation, which is unrelated to the IPVC.

Table XI. Satisfaction with Support Services, obtained through Surveys.

Survey of Services (scale 1-5)	13/14	14/15	15/16	16/17	17/18	TOTAL
Housing	3,3	3,2	4,0	3,7	4,0	3,6
Food in Canteens	3,8	3,7	3,4	3,5	2,7	3,4
Food in Snack bars	–	3,6	3,6	3,1	2,9	3,3
Social support scholarship	–	4,2	3,7	3,8	3,4	3,8
Scholarship	3,9	3,6	3,7	3,8	3,1	3,6
Academic BUS	–	–	4,0	3,6	3,9	3,9
Sports' Centre	–	–	4,2	3,5	3,8	3,8
Health Office	–	–	–	3,9	4,2	4,0
Cultural Office	–	–	3,9	4,4	3,7	4,0
Employment support	–	–	3,3	3,4	3,5	3,4
Libraries	3,9	3,7	3,9	3,9	3,9	3,9
TOTAL	3,7	3,7	3,8	3,7	3,5	3,7

The satisfaction with teaching quality and support services has not charted the trends of demand and dropout rates, remaining stable and with a very positive average. In the CTeSP, although the dropout rate is higher than in the Bachelor degrees, the levels of satisfaction with the course are even higher. On the other hand, in 2017/18, service satisfaction fell slightly but dropout rates also continued to decline.

3. Conclusions

During the period from 2013/2014 to 2015/2016, coinciding with the country's greatest economic impact, there was a sharp fall in the main indices that measure the attractiveness of IPVC courses and pursuance of studies; a situation which led to a sharp fall for demand in 2013, below the 49000 candidates, when in 2008 there were more than 61,000 candidates for HE [39]. The crisis began to take effect in 2009 but hit its lowest GDP in 2013, of capital stock, consumption and investment per capita, and the highest unemployment rate (16.6%) [40] was reached. In that year, the IPVC dropout rate was 17.4% (19% in the SW) and has since dropped to 14.2% (15% in the SW) in 17/18. The main causes mentioned in the survey for dropout were financial problems /personal conditions, followed by proximity from home and academic failure. Studies that identify factors from the students' perception enable HEI to attract more students and make them highly satisfied as well as loyal [25]. This integrated information allows the IPVC to identify unfavourable contexts, unmet needs and expectations of students, signal situations of risk, as well as opportunities that trigger corrective actions or improvement in institutional marketing processes,

communication plans, and review of training offers and integration of students, particularly those who are at higher risk of abandonment.

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