STATISTICS ANALYSIS OF GRADUATION COURSES OF THE CAMPUS OF CASTANHAL – UFPA

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The objective of this work is to present to managers and professors of Federal University from Pará - UFPA, Castanhal Campus, the Statistics as evaluation tool of the graduation courses of this Campus. This evaluation procedure was carried through in 2004 by managers and professors from Castanhal Campus. It has as objective to know the students satisfaction in relation to infrastructure, coordination, administrative technician and courses. The results show that 65,33% of the students evaluate the laboratories of their courses as inadequate to the objectives of their subjects. 36,43% of the students evaluate that the courses coordinators of Castanhal Campus do not stimulate events organizations and 33,16% of the administrative technicians be not able to solve the academic problems. Students of Mathematics Course are unsatisfied with their course. There is no student very satisfied with UFPA, however the students of Pedagogy Course show a little satisfaction to the institution, but this relation is much bigger in Veterinarian Medicine.

INTRODUCTION

The Institutional Evaluation is normally applied in universities. It involves external and internal partners and is centered in processes and results of the institution actions in regarding to the sociohistoric context and the public politics, in special the educational politics. The Institutional Evaluation of Castanhal Campus aims to promoting the graduation courses evaluation of the Campus to identify problems and to propose solutions attempting to the institution peculiarities, in particular of the Castanhal Campus, supplying subsidies to managers in decision moments. In this context, it was used the Correspondence Analysis statistics technique aiming to showing which the existent relations (associations) between the courses and their conditions evaluated by students of Castanhal Campus, *UFPA*.

METHOD

The multivariate statistics technique of Correspondence Analysis (*CA)* was firstly used by Fisher (1940) and after it was spread out in France by Benzécri (1969). The Correspondence Analysis is a technique that aim at the reduction of data amount to be analysed by researcher with minimum of information loss possible, where there is not model to be presumed and no probability distribuition to be assumed. To be possible the *CA* application to the data in any study it is necessary to calculate the β value using the Chi-square Test (χ^2) and β Criterion from

$$\beta = \frac{\chi^2 - [(l-1)(c-1)]}{\sqrt{(l-1)(c-1)}}, \tag{1}$$

where χ^2: Chi-square value; l: number of lines and c: number of columns.

Before the Correspondence Analysis application to the data it is necessary to calculate β Criterion value, obtained from Equation 1. *CA* needs to satisfy to the null hypothesis (H_0), where H_0: $\beta > 3$ (the variables are said dependent), to a determined significance level. In addition, the amount of restituted information by the *CA* chart must be bigger or equal to 70%. Finally, it is recommended that the singular value of eigenvalues are bigger than 0.20.

RESULTS

The data of course evaluation in study used in this work were discharged by the Department of Didactic and Scientific Support of the *Pró-Reitoria* of Graduation Education and Academic Administration (*DAC/PROEG*) of *UFPA*. The studied variables were: Course, Adequate Laboratories, Events Organization, Secretaries Support, Student Satisfaction Degree with the course (*SD.COURSE*) and Student Satisfaction Degree with UFPA (*SD.UFPA*).

In the comparison of the variables for the Figures 1, 2 and 3 the satisfaction scale was used: Fully satisfied (*SIM*); In the most of times (*MADV*); Sometimes (*AV*); In least of times (*MIDV*) and Totally unsatisfied (*NÃO*). And the scale used for the Figures 4 and 5 was: Not satisfied (*INS*); Little satisfied (*PS*); Satisfied (*SAT*); Very satisfied (*MS*).

Table 1*:* Statistics of the CA to variables Course versus Laboratories

| Axes	Eigenvalues	Inertia	% Inertia	Chi-Squares	df	*p*-value	β
1	0.4966	0.2467	79.78	93.73	16	0.0000	25.37
2	0.2290	0.0524	16.96	19.93			
3	0.0992	0.0098	3.18	3.74			
4	0.0152	0.0002	0.07	0.09			
Total	0.8401	0.3092	100.00	117.48			
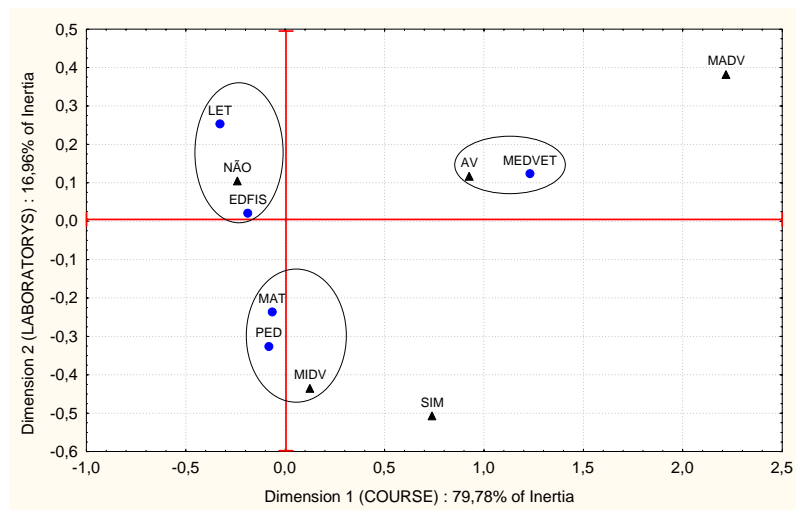
Legend: Letters - *LET*; Mathematics - *MAT*; Pedagogy - *PED*; Veterinarian Medicine - *MEDVET*; Phisical Education - *EDFIS*; Fully satisfied - *SIM*; In the most of times - *MADV*; Sometimes - *AV*; In least of times - *MIDV*; Totally unsatisfied - *NÃO*.

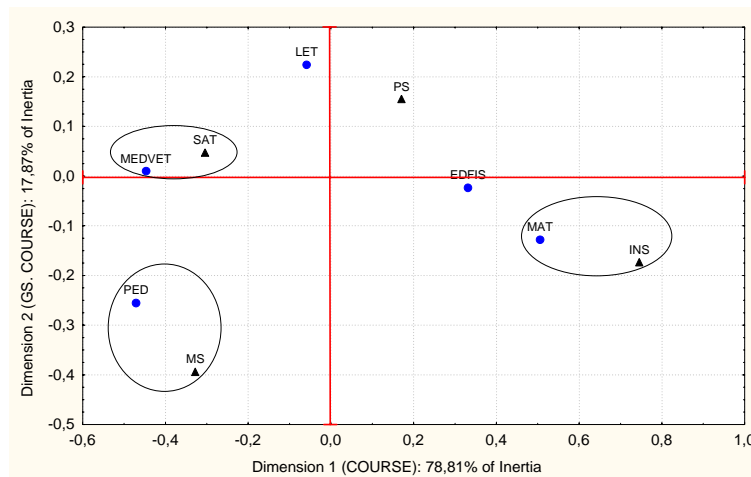Figure 1: Correspondence Analysis of the variables Course *versus* Adequate Laboratories
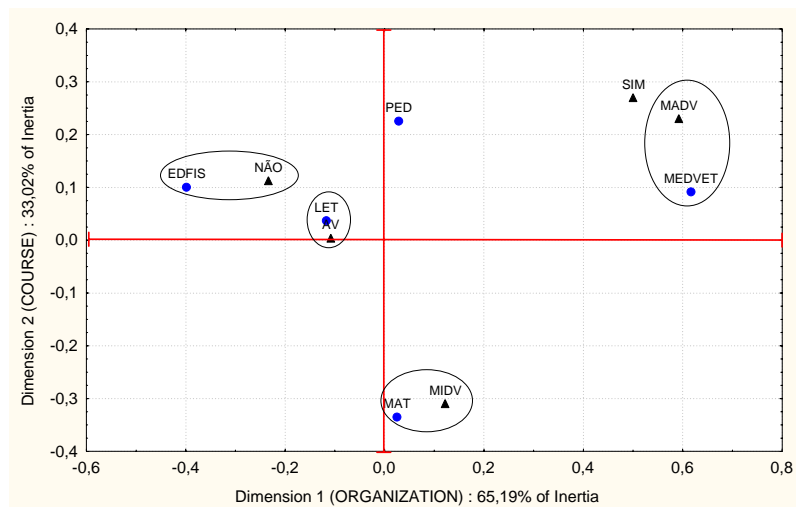
Legend: Letters - *LET*; Mathematics - *MAT*; Pedagogy - *PED*; Veterinarian Medicine - *MEDVET*; Phisical Education - *EDFIS*; Fully satisfied - *SIM*; In the most of times - *MADV*; Sometimes - *AV*; In least of times - *MIDV*; Totally unsatisfied - *NÃO*.

Figure 2: Correspondence Analysis of the variables Course versus Events Organization.
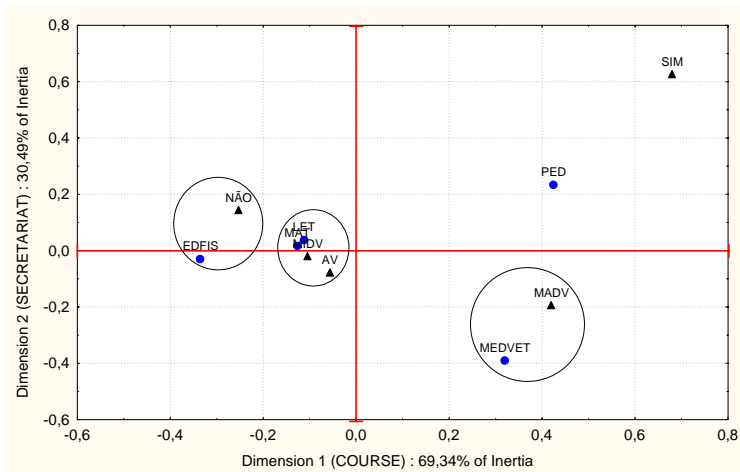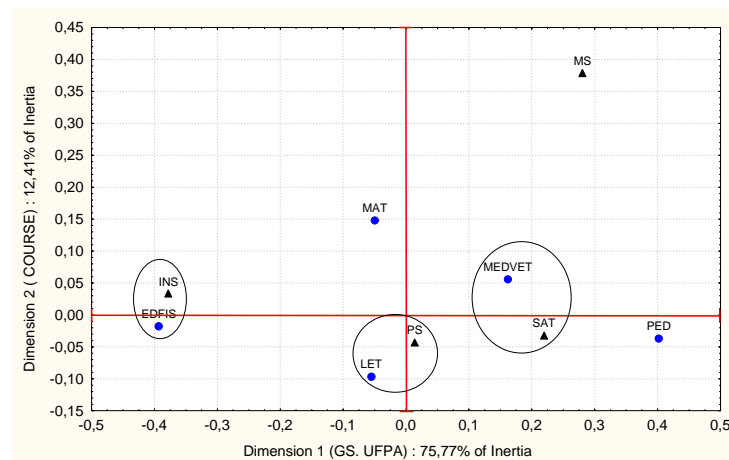
Legend: Letters - *LET*; Mathematics - *MAT*; Pedagogy - *PED*; Veterinarian Medicine - *MED VET*; Phisical Education - *EDFIS*; Fully satisfied - *SIM*; In the most of times - *MADV*; Sometimes - *AV*; In least of times - *MIDV*; Totally unsatisfied - *NÃO*.

Figure 3: Correspondence Analysis of the variables Course versus Secretaries Support.

Legend: Letters - *LET*; Mathematics - *MAT*; Pedagogy - *PED*; Veterinarian Medicine - *MED VET*; Phisical Education - *EDFIS*; Not satisfied - *INS*; Little satisfied - *PS*; Satisfied - *SAT*; Very satisfied - *MS*.

Figure 4: Correspondence Analysis of the variables Course versus Satisfaction Degree with the course.

Legend: Letters - *LET*; Mathematics - *MAT*; Pedagogy - *PED*; Veterinarian Medicine - *MED VET*; Phisical Education - *EDFIS*; Not satisfied - *INS*; Little satisfied - *PS*; Satisfied - *SAT*; Very satisfied - *MS*.

Figure 5: Correspondence Analysis of the variables Course versus Satisfaction Degree with *UFPA*.

CONCLUSION

The objective of this work is to present to managers and professors of Federal University from Pará - *UFPA*, Castanhal Campus, the Statistics as evaluation tool of the graduation courses in this Campus. The results show that there is some student dis-satisfaction of the Letters and Phisical Education Course with their laboratories (Figure 1), therefore the students evaluated that their laboratories are not adequate with the objective of the subject. In relation to the course coordinator stimulate events organization, it is observed that the Veterinarian Medicine Course students are satisfied with the coordination (Figure 2), therefore their coordinator promoves events in the most of times, however the students of Phisical Education said that there was not this stimulus, so they felt unsatisfied with the coordination. In relation to the Secretaries Support to solve academic problems, it was noticed that the Phisical Education students are unsatisfied with the administrative technicians (Figure 3). The opinion of the Letters and Mathematics students is that the support happened in the least of times. However, the Veterinarian Medicine Course students are satisfied with the Secretaries Support to solve the academic problems. In relation to the students Satisfaction Degree with the course, it was noticed that Mathematicas course students are unsatisfied with the course (Figure 4). Veterinarin Medicine students are satisfied with the course and Pedagogy ones are very satisfied with the course. And finally, it is verified the association between the course and the student satisfaction degree with *UFPA*, where it can be notice that no student is very satisfied. But, Physical Education students are unsatisfied with *UFPA* and the Letters ones just a little satisfied. Veterinarian Medicine Course presented satisfied students with *UFPA*. After statistical results presentation, the Castanhal Campus managers verified that the student satisfaction of Veterinarian Medicine Course is because of the professors qualifications, therefore it get the best Campus staff. And they concluded that the laboratories conditions, the events organization and secretaries support are some of the factors that are influencing negatively in the student satisfaction degree and, consequently, by Federal University of Pará.

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