

# *THE INDIRECT INFLUENCE OF MOUTH-TO-MOUTH MARKETING ON THE CHOICE CRITERION OF PUBLIC EDUCATION INSTITUTIONS*

## *A INFLUÊNCIA INDIRETA DO MARKETING BOCA A BOCA NO CRITÉRIO DE ESCOLHA DE UMA INSTITUIÇÃO DE ENSINO PÚBLICA*

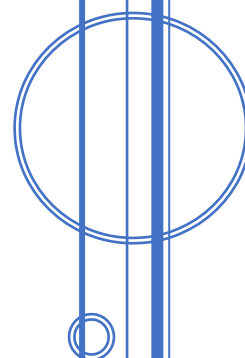
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## Abstract

Several studies show a positive influence from word of mouth [WOM] marketing on the choice criterion of an Education Institution [EI]. However, these researches did not investigate the indirect effect from WOM marketing on such choices. Moreover, the setting commonly used is also influenced by self-selection problems, which could result in biased estimators for the effect of WOM marketing on choice criterion for an EI. This study aims to verify if prior suggestion by students' Education Institution through WOM marketing influences indirectly the choice criterion of new students for such institution. A model that compare the choice criterion of students that were exposed to WOM marketing with students that were not was built to mitigate endogenous features related to these criteria and also minimize self-selection problems. We performed a questionnaire with students from an EI that were and were not exposed to WOM marketing based on the seven most widely factors that influence the choice criteria. At the end, we obtained 1220 valid answers. Multiple linear regression tests were carried out to verify the degree of association between the EI criteria and each one of the seven factors among both groups of students. The results show there is no evidence that WOM marketing systematically has straight effect on students' choice criterion by an IE. However, other results review that WOM marketing can enhance influence on some variables that interfere on students' choice criterion by an IE.

**Keywords:** Word of mouth marketing. Choice criterion. Educational institution. Teaching modality. Indirect effect.

## Resumo

Vários estudos mostram uma influência positiva do marketing boca a boca [BAB] sobre o critério de escolha de uma Instituição de Ensino [EI]. No entanto, essas pesquisas não investigaram o efeito indireto do marketing da BAB nessas escolhas. Além disso, o cenário utilizado também é influenciado por problemas de auto-seleção, o que poderia resultar em estimadores tendenciosos para o efeito do marketing de BAB no critério de escolha para um EI. Este estudo tem como objetivo verificar se a sugestão prévia da Instituição de Ensino dos alunos através do marketing da BAB influencia indiretamente o critério de escolha de novos alunos para essa instituição. Um modelo que compara a escolha de alunos que foram expostos ao marketing BAB com alunos que não foram expostos foi criado para mitigar problemas endógenos relacionados a esses critérios e também minimizar problemas de auto-seleção. Foi realizado um questionário com estudantes de uma IE que foram e não foram expostos ao marketing BAB com base nos sete fatores mais utilizados e que influenciam os critérios de escolha. No final, foram obtidas 1220 respostas válidas. Testes de regressão linear múltipla foram realizados para verificar o grau de associação entre os critérios de IE e cada um dos sete fatores entre os dois grupos de estudantes. Os resultados mostram que não há evidências de que o marketing BAB sistematicamente tenha um efeito direto sobre o critério de escolha dos estudantes por um IE. No entanto, outros resultados sugerem que o marketing BAB pode aumentar a influência que algumas variáveis possuem sobre o critério de escolha dos alunos por um IE.

**Palavras-chave:** Marketing boca a boca. Critério de escolha. Instituição de ensino pública. Modalidade de ensino. Efeito indireto.

## 1 Introduction

Companies that produce consumer goods have intensified their efforts mainly on service development and delivery purposing to maintain a competitive advantage (Jacob & Ulaga, 2008; Eggert, Hogreve, Ulaga, & Muenkhoff, 2014; Benedettini, Neely, & Swink, 2015). On the same way, educational institutions [EI] aim to progress and remain in the market through the efficiency of their processes, seriousness and high performance (Juliatto, 2013).

In educational market, enrollments are decreasing, fact that can be caused, in parts, by both increased competition and changes on age pyramid (Taneguti, 2013). This way, educational managers need to seek strategies to recruit students as a survival way, becoming the differential of success of an EI in a demanding and competitive scenario (Paiva, Costa, Barbosa, & Neto, 2014). In this context, WOM marketing appears as a differential for IE, becoming a force in which the personal influence from opinion leaders can demand for their products (Arndt, 1967; Santiago, Arruda, Dantas, & Oliveira, 2014).

Among the works that deal with the influence of WOM marketing on selection criteria are Arndt (1967), Bickart and Schindler (2002), Silva, Wassally, Silva and Santos (2008), Libai et al., (2010), Berger (2014), Santiago et al. (2014) among others. Overall, most of the results points to a positive influence of WOM marketing on choice criterion. However, from the theoretical point of view, such researches do not investigate the indirect effect of WOM marketing. These results provide insights to verify the ability of WOM marketing to intensify the effect of other variables on choice criterion. Furthermore, about econometric point of view, the used designers do not allow control by certain aspects, including unobservable characteristics related to WOM marketing which influence the choice criterion. Such designers, therefore, are influenced by a self-selection problem, implying in biased estimators for WOM marketing effect on choice criterion by an EI.

This work ambition is to verify if the indication of an EI by its students through WOM marketing indirectly influences their selection criteria. That is, if WOM marketing influences other variables, interfering in their choice criterion. For this, a model with different research design from the usual one in literature was proposed, counting with a control group (new students that were not exposed to that had no indication), and consequently mitigating endogenous aspects about EI choice criteria, minimizing self-selection problems.

This study provides knowledge sprawling about WOM marketing, systematizing the identified variables in literature that motivate the choice for an EI in order to eliminate the

endogeneity and possibly the bias from estimators, what had not been proposed in previous studies yet. Another contribution from this study was to verify how WOM marketing intensifies some variables influence on student's selection criteria by an EI, allowing an understanding on the effect of WOM marketing on EI's selection criteria.

In practical terms, it is aimed that this research provides support for the EI managers be able to rely on the results for future decision-taking, with respect to projects and public policies related to the students' enrollment. In addition, the competition growth for vacancies and the quality improvement of selected students show potential ways to reduce school dropout (Sousa, 2014).

## 2 Theoretical references

### 2.1 Influencing factors in the selection criteria for an EI

To understand what lead the student to choose an EI, it was taken as a basis the literature which explains the students' attraction, once on factors that have influence on their choice criteria. These factors are presented in Table 1:

**Table 1. Factors used on the student's choice for an IE**

FACTORS	DESCRIPTION	AUTHORS
Quality of the institution / course	Set of properties, attributes and conditions of an EI, able to distinguish it from the others. It is related to needs and expectations.	Parasuraman, Zeithaml and Berry (1985), Franco (2000), Coda and Silva (2004), Perfeito, Becker, Silveira and Fornoni (2004), Costa (2007), Mainardes (2007), Cavalcante (2014), Dlačić, Arslanagić, Kadić-Magljajić, Marković and Raspor (2014), Lazibat, Baković and Dužević, (2014), Duarte, Oliveira, Pires, Andrade and Paula (2015), Jalilvand, Salimipour, Elyasi and Mohammadi (2017)
Infrastructure	A set of facilities, equipment and services that guarantee the operation of an EI.	Franco (2000), Veloutsou, Lewis and Paton (2004), Holanda, Farias and Gomes (2006), Mainardes (2007), Cavalcante (2014), Hemsley-Brown and Oplatka (2015).
Trademark / image	The way in which EI is perceived; impressions and symbolic value that people have from the EI in general.	Palacio, Meneses and Pérez (2002), Valerio and Pizzinatto (2003), Silva et al. (2008), Safón (2009), Alves and Raposo (2010), Stephenson and Yerger (2014), Wilkins and Huisman (2015), Stephenson, Heckert and Yerger (2016), Walsh, Flannery and Cullinan (2018).
Price	Monetary value paid by the student to receive in return educational service of an EI (in the case of a Public EI means nonpayment of monthly fee).	Palacio et al. (2002), Perfeito et al. (2004), Miranda and Domingues (2006), Holanda et al. (2006), Mainardes (2007), Bergamo, Ponchio, Zambaldi, Giuliani and Spers (2010), Walsh, Moorhouse, Dunnett and Barry (2015).
Labor market	Professional opportunity that an individual has to improve	Franco (2000), Valerio and Pizzinatto (2003), Holanda et al. (2006), Mainardes (2007),

	his / her job situation (hiring, promotion or a new venture proposal).	Petruzzellis and Romanazzi (2010), Walsh et al. (2018).
Consumertoconsumer	Perception of EI characteristics observing the students' behavior, students and staff, and by the way the students study there.	Harris, Baron and Parker (2000), Moore, Moore and Capella (2005), Lehn (2006), Finsterwalder and Kuppelwieser (2011).
Personal reasons	Reason or apology that leads the individual to choose an EI, disregarding information provided by others and inherent characteristics of the EI itself.	Perfeito et al. (2004), Yamamoto (2006), Mainardes (2007), Meneghelli (2011), Reis and Freitas (2014).
WOM marketing	The kind of marketing in which students on their own speak to others encouraging or not their purchase or use of products and services from an EI.	Brooks (1957), Arndt (1967), Bickart and Schindler (2002), Silva et al. (2008), Libai et al. (2010), Berger (2014), Santiago et al. (2014), Pereira, Garrido and Matos (2015), Voyer and Ranaweera (2015), Dalmonech, Goularte, Ramos and Monte-Mor (2016), Wien and Olsen (2017), Herold, Tarkiainen and Sundqvist (2016), Le (2018).

Source: Prepared by the author

The studies on WOM marketing have been already widespread; however, some answers have not been clarified yet. The results so far point out that WOM marketing is frequent and important for consumer's behavior, what may influence other consumers to choose the product or service (Berger, 2014; Pereira et al., 2015; Voyer, & Ranaweera, 2015; Dalmonech et al., 2016; Herold et al., 2016; Wien, & Olsen, 2017; Le, 2018).

In Brazil, for example, it can be verified that the behavior of WOM marketing action from students influences on the decision by an EI (Santiago et al., 2014), it also indicates services provided by a Public EI and the behavior of the WOM marketing is directly linked to students' satisfaction (Dalmonech et al., 2016). And there is a larger influence for a Particular EI due to publicity made by its students and ex-students than investments made with external marketing (Silva et al., 2008).

These results suggest that there is a relationship between WOM marketing and EI's selection criteria, but it is also known that WOM marketing, besides all disclosure and indication, can also inform and resolve doubts about some variables that influence the student's choice of an EI. Forward this scenario, the following hypotheses were formulated:

H1a: The WOM marketing has a positive influence on students' choice for an EI.

The EIs need to look for ways to increase students' perceptions of quality to, this way, recommend the EI and continue their studies in the future, and even get on other levels of the EI; guaranteeing to the new students that they will also receive a quality service (Petruzzellis, & Romanazzi, 2010; Dlačić et al., 2014; Jalilvand et al., 2017). This can also

lead to a higher number of recruited students, since quality is also an attribute of attracting students to an EI (Mainardes, 2007; Meneghelli, 2011).

The quality of an EI can be considered as a reflection of its infrastructure quality and employees' quality as well, and considering the first one with a more significant impact on student learning, becoming important for its development in such a way that it has been the main target of public policies that is increasingly committed to make them get to a better quality (Cavalcante, 2014; Hemsley-Brown, & Oplatka, 2015).

With this develop a positive image of EI, should, at every moment, look for the necessary information to understand how the trademark image is constructed, formed and modified, in order to find the desired image and bring more return. The EI can establish a competitive advantage over their competitors just by understanding the importance of the trademark image in the students' retention and attraction. (Alves, & Raposo, 2010; Stephenson, & Yerger, 2014; Wilkins, & Huisman, 2015; Stephenson, Heckert, & Yerger, 2016; Walsh et al., 2018).

Among the general factors influencing the criteria of choosing an EI, those related to personal reasons are listed as influential elements, and the choice is made through their own preferences (Yamamoto, 2006). One of the expectations of students before choosing an EI to study is its location, in order to choose a closer one to their home (Meneghelli, 2011). On the other hand, the research by Reis and Freitas (2014) shows that the factors related to personal reasons that attract students to EI such as proximity to home, influence of friends and family and safety on campus were not relevant in the student's decision-taking process.

People are increasingly looking for a quality EI and with a good reputation in the market, as a proof of this, there is the research of Perfeito et al. (2004) who discovered that the price of tuition presents little influence on the students' opinion, In the process of choosing an EI. However, students are increasingly charging from the EI for their return on investment (Petruzzellis, & Romanazzi, 2010; Walsh et al., 2015).

The student search for an EI that can insert him or her into the job market, by those EIs should not simply be knowledge providers; it is necessary to understand that the nowadays student due to the economic conditioning, is visibly worried about its insertion in the job market. (Valerio, & Pizzinatto, 2003; Mainardes, 2007; Petruzzellis, & Romanazzi, 2010; Walsh et al., 2018).

EIs should build partnerships with companies that are directly involved in the business field in which their courses are offered, ensuring that their students have greater employment opportunities. In other words, EIs should encourage career preparation programs



(Petruzzellis, & Romanazzi, 2010; Walsh et al., 2018).

Generally, the future consumers search, by the simple observation of other consumers, identifying how that service is provided, thus defining it, in order to choose it or not (Moore et al., 2005). In this way they choose services by watching what happens in the environment. When observing the involvement of other people can then be influenced by the quality of the activities and align with their behavior, opting or not for the service. (Lehn, 2006).

In summary, the literature provide evidence on several factors that influence students' choice criterion by an EI. These factors, however, can be influenced by the perception that students build when subject to WOM. This expectation leads to the next hypothesis:

H1b: The WOM marketing intensifies the influence of factors that have effect on students' choice criterion by an EI.

### **3 Methodologies**

To verify the influence of indication of an EI by its students through WOM marketing on choice criterion by an EI, a descriptive and cross-sectional quantitative methodology was adopted (Marconi, & Lakatos, 2010). To provide this, it was chosen a primary data collection, through the application of a structured and self-fillable questionnaire, available printed and filled in person in the classroom on September and October of 2015, by incoming students in 2015.

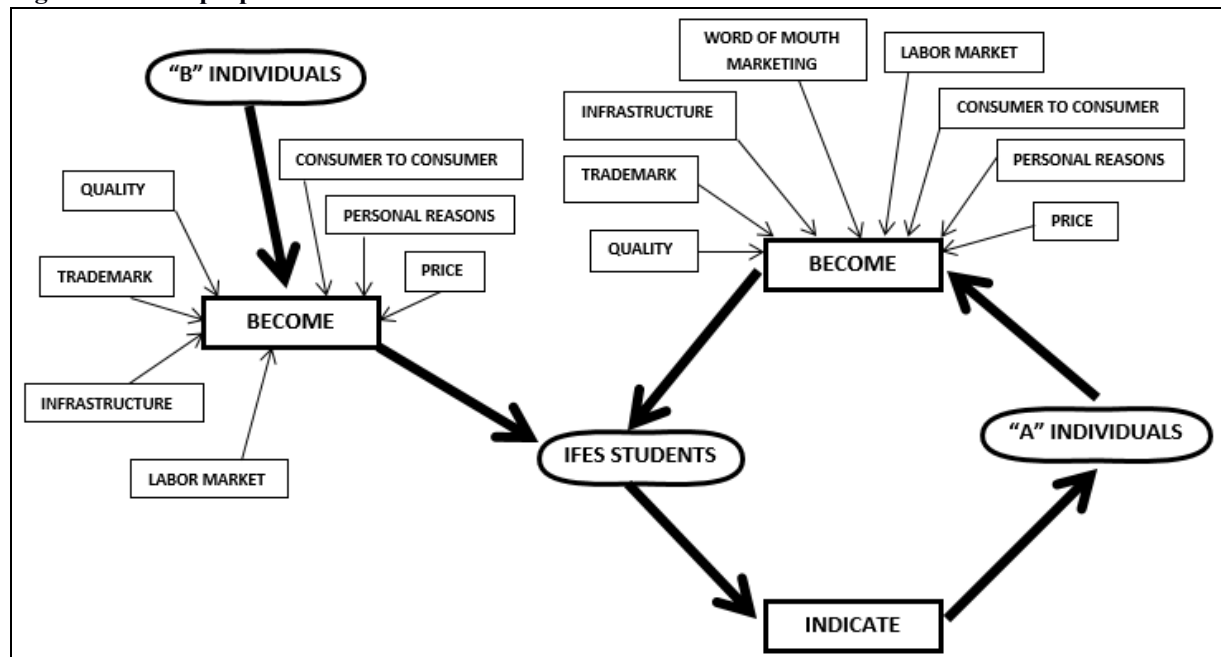
Representing the choice criterion for an EI, it was defined as a study field students who joined in 2015 at Education, Science and Technology Federal Institute in Espírito Santo (IFES) that has 21 campuses and 01 rectory and "is a government agency from Federal Department linked to the Ministry of Education, which promotes education in different teaching modalities" (Lei nº 11.892, 2008). Its goal was to include as students from different contexts as possible to reach several teaching modalities in the same EI. In addition, it was considered the environment in which the EI was not directly geared towards the market with many dissemination formats and in various kinds of media to win the competition.

The research instrument was adapted from Mainardes' study (2007), with some adjustments to fit to the study target. Some of the statements from Mainardes' study (2007) were grouped and ordered with different nomenclatures. Another adaptation was to make it possible for the student to express what really led him / her to choose that EI. Finally, it was

adapted to capture if the student belonged to the treatment group (with WOM marketing) or to the control one (without WOM marketing), including some statements to capture data about the student's choice criteria (variable dependent on study).

To mitigate the endogenous aspects of selection criterion, it was developed a model presented in Figure 1. This model had been be used to test the Hypotheses H1a and H1b. In this case, the questionnaire was applied to a group of students that were exposed to WOM and to another group that were not.

**Figure 1. Model proposed**



Source: Own elaboration.

At the first part of the questionnaire, there was a question: "Did I have any contact with another IFES student before deciding to study at IFES?" It differentiated two groups, treatment and control. The students coming from the treatment group are those who had contact with EI students before the choice, that is, they had an indication of EI students and this way it could be used to measure the effect of word of mouth marketing on the criterion of choice. And students from the control group are those who did not have contact with EI students before the choice, that is, they had no indication of EI students.

In the second part of the questionnaire, three affirmations were created for the variable criteria of choice, followed by a seven-level Likert scale (ranging from [1] strongly disagree and [7] strongly agree), thus, the variable final note was formed by the average per respondent.



At the third part, 30 questions from Mainardes' study (2007) were adapted to the variables, followed by a seven-level Likert scale (ranging from [1] did not influence my choice decision and [7] influenced my choosing decision very much). Thus, the final score of each variable was formed by the average per respondent from the variables of each of the attributes.

At the fourth part, five closed questions were elaborated to identify the students' profile (gender, course modality, family income, and father and mother's activity) and two opened questions (age and enrolled IFES campus).

The questionnaire was elaborated in Portuguese, undergoing a validation process with pre-tests with 15 students entering the Technical Course Integrated to High School Education (Agricultural Technician) and 15 students entering the Higher Course (Agronomy) in campus of Santa Teresa. The questionnaires were applied by the author's study himself and the students took about 15 minutes filling it. After the application of the 30 questionnaires, there was a talk time, with approximately 10 minutes, in which the respondents took their doubts away, informing the questionnaire was clear and that they had no doubt about it. Even though, a detailed analysis on the answered questionnaires has been done and there was no problem on filling out the data collection instrument.

After this step, the information was validated to control variables with a total of 1220 responses. 327 of the control group and 893 of the treatment group. Of the total answers, 879 were from the technical course integrated to high school, 164 from technical course and 177 from higher education.

Analyzes were performed on descriptive statistics (mean and standard deviation) and multivariate statistics using multiple linear regressions. Interaction tests were performed in each group, conditioned by characteristics, in order to verify if the variables behaved differently in each group profile.

By the results, it is allowed to analyze the model and to draw conclusions about the proposed objective. Model I was created to test the hypothesis H1a and model II to test the hypothesis H1b.

$$Y = \beta_0 + \sum_{i=1}^8 \beta_i . X_i + Controls + \varepsilon \quad (I)$$

$$Y = \beta_0 + \beta_1 . Treat + \sum_{i=2}^8 \beta_i . X_i + \sum_{i=2}^8 \beta_{i+7} . Treat . X_i + Controls + \varepsilon \quad (II)$$

#### 4 Analyses of the data

Multiple linear regression tests were carried out to verify the degree of association between the EI criteria and the variables. Observing the results from Table 2, it is clear with 95% confidence that the hypothesis H1a was not rejected only in the modality of Technical Course, but also on Technical Integrated to Secondary and Higher Education Courses. Therefore, the results indicate that WOM marketing influences student's selection criteria in, at least, one of teaching modalities, confirming Bickart and Schindler (2002), Berger (2014) and Santiago's et al. (2014) assumptions, among others, what demonstrates the WOM marketing practiced by EI students influence the new students' decision.

**Table 2. Results of regression taking into consideration only the individuals of the sample who had indication of EI students, with and with out control, and with distinction between course modalities**

<b>PANEL A: COURSE MODE: TECHNICAL INTEGRATED TO HIGH SCHOOL</b>				
<b>Variables</b>	<b>Without control</b>		<b>With control</b>	
	<b>Coefficient</b>	<b>P&gt; t </b>	<b>Coefficient</b>	<b>P&gt; t </b>
WOM marketing	-0.012	0.803	-0.012	0.803
EI's quality	-0.025	0.676	0.002	0.969
Consumer to Consumer	-0.055	0.136	-0.017	0.585
Job market	0.204***	0.000	0.211***	0.000
Trademark / Image	0.079	0.180	0.081	0.177
Personal reasons	-0.019	0.650	-0.031	0.451
Infrastructure	0.185***	0.000	0.175***	0.000
Price	0.001	0.991	0.018	0.473
Number of observations				643
<b>PANEL B: COURSE MODE: TECHNICAL</b>				
<b>Variables</b>	<b>Without control</b>		<b>With control</b>	
	<b>Coefficient</b>	<b>P&gt; t </b>	<b>Coefficient</b>	<b>P&gt; t </b>
WOM marketing	0.222**	0.041	0.222**	0.041
EI's quality	-0.276	0.122	-0.182	0.344
Consumer to Consumer	0.009	0.942	0.001	0.993
Job market	0.216	0.276	0.244	0.228
Trademark / Image	-0.036	0.883	-0.090	0.720
Personal reasons	-0.216*	0.070	-0.169	0.161
Infrastructure	0.151	0.345	0.078	0.645
Price	-0.100	0.205	-0.059	0.440
Number of observations				120
<b>PANEL C: COURSE MODE: HIGHER SCHOOL</b>				
<b>Variables</b>	<b>Without control</b>		<b>With control</b>	
	<b>Coefficient</b>	<b>P&gt; t </b>	<b>Coefficient</b>	<b>P&gt; t </b>
WOM marketing	-0.068	0.589	-0.068	0.589
EI's quality	-0.050	0.752	-0.001	0.990
Consumer to Consumer	0.381**	0.021	0.310**	0.025
Job market	0.050	0.758	0.089	0.567
Trademark / Image	-0.197	0.286	-0.234	0.119
Personal reasons	-0.103	0.379	-0.131	0.196
Infrastructure	0.344***	0.009	0.332**	0.020
Price	0.065	0.422	0.003	0.960
Number of observations				127

Source: Applied research data. \*\*\*, \*\* and \* represent significant coefficients at 1%, 5% and 10% respectively.

However, these presented results have an endogenous relationship between the choice criterion and WOM marketing, and they may also imply in biased estimators to approximate their effect. Table 2 shows results of each variable, eliminating this endogenous relation. To make it possible, it was used the model II, in which the hypothesis H1b is also tested.

At Table 2, it is evident that in the modality of Technical Education Integrated with High School in relation to the control group (students who had no indication from other students, that is, WOM marketing), it is understood that the variables from the model were not related to the student's choice criterion by the EI. However, in relation to the treatment group, students with indication from others, that is, WOM marketing, it is checked, at 90% confidence that the variables "Labor market" (0.200) and "Infrastructure" (0.157) – this last one only under uncontrolled analyzes - began to influence the choice criterion for an EI. In this case, it was found out that the students who received the WOM marketing indication adopted these two variables as a principle when choosing an EI, what had not been done at group with no indication. That is, the hypothesis H1b was not rejected.

Table 2

**Results from regression with distinction between course modalities with interaction****PANEL A: COURSE MODE: TECHNICAL INTEGRATED TO HIGH SCHOOL**

Variables	Without control		With control	
	Coefficient	P> t	Coefficient	P> t
EI quality	0.087	0.380	0.102	0.307
<i>ConsumertoConsumer</i>	0.013	0.871	0.003	0.968
Jobmarket	0.015	0.869	0.003	0.973
Trademark / Image	0.120	0.211	0.129	0.171
Personalreasons	0.075	0.312	0.079	0.298
Infrastructure	0.028	0.733	0.027	0.744
Price	-0.034	0.438	-0.041	0.350
EI quality (Acquainted toTreat)	-0.115	0.315	-0.128	0.263
<i>Consumer to Consumer</i> (Acquainted toTreat)	-0.071	0.424	-0.060	0.498
Job market (Acquainted toTreat )	0.188*	0.078	0.200*	0.058
Trademark / Image (Acquainted toTreat )	-0.040	0.716	-0.054	0.624
Personal reasons (Acquainted toTreat )	-0.095	0.268	-0.100	0.249
Infrastructure(Acquainted toTreat)	0.157*	0.099	0.155	0.106
Price(Acquainted toTreat )	0.034	0.503	0.051	0.320
Numberofobservations				879

**PANEL B: COURSE MODE: TECHNICAL**

Variables	Without control		With control	
	Coefficient	P> t	Coefficient	P> t
EI quality	-0.580**	0.028	-0.512**	0.040
<i>ConsumertoConsumer</i>	0.129	0.685	-0.070	0.833
Jobmarket	0.329	0.343	0.341	0.331
Trademark / Image	-0.225	0.493	-0.223	0.545
Personalreasons	0.110	0.543	0.116	0.536
Infrastructure	0.608***	0.010	0.579***	0.007
Price	0.124	0.522	0.213	0.333
EI quality (Acquainted toTreat )	0.331	0.303	0.312	0.312
<i>Consumer to Consumer</i> (Acquainted toTreat)	-0.071	0.838	0.106	0.778
Job market (Acquainted toTreat )	-0.168	0.675	-0.125	0.757
Trademark / Image (Acquainted toTreat )	0.230	0.576	0.141	0.747
Personal reasons (Acquainted toTreat )	-0.313	0.159	-0.300	0.183
Infrastructure(Acquainted toTreat )	-0.459	0.113	-0.483*	0.078
Price(Acquainted toTreat )	-0.202	0.334	-0.285	0.227
Numberofobservations				164

**PANEL C: COURSE MODE : HIGHER SCHOOL**

Variables	Without control		With control	
	Coefficient	P> t	Coefficient	P> t
EI quality	0.542**	0.013	0.429*	0.081
<i>ConsumertoConsumer</i>	-0.207	0.322	-0.456**	0.033
Jobmarket	-0.362	0.226	-0.235	0.464
Trademark / Image	0.350	0.103	0.417*	0.096
Personalreasons	0.053	0.747	0.107	0.596
Infrastructure	-0.040	0.829	0.024	0.901
Price	0.225*	0.064	0.293**	0.018
EI quality (Acquainted toTreat )	-0.611**	0.022	-0.501*	0.088
<i>Consumer to Consumer</i> (Acquainted toTreat )	0.553**	0.033	0.816***	0.002
Job market ( Acquainted toTreat )	0.424	0.215	0.288	0.404
Trademark / Image ( Acquainted toTreat)	-0.573**	0.040	-0.610**	0.042
Personal reasons ( Acquainted toTreat )	-0.158	0.436	-0.235	0.294
Infrastructure( Acquainted toTreat )	0.392*	0.086	0.373	0.110
Price( Acquainted toTreat )	-0.166	0.251	-0.244	0.101
Numberofobservations				177

Source: Applied research data. \*\*\*, \*\* and \* represent significant coefficients at 1%, 5% and 10% respectively.

Treat: Dummy Variable = 1 the group that received indication from another student; 0 the group that received no indication from another student;

At technical education modality, with 95% confidence, it can be inferred that in the control group there is a relation between the variables "EI Quality" (-0.512) and "Infrastructure" (0.579) with the student's choice criteria for the EI, and they were used when the EI was chosen to study. This quality variable negative coefficient suggests the student becomes less judgmental when perceives the EI as high quality place. In this case, it is possible that EI meets the student's expectations, distinguishing it from the market by its set of properties, attributes and teaching conditions. In the same way, in the treatment group regarding to the quality of the EI, the result remained, rejecting the hypothesis H1b.

About the infrastructure, it can be noticed that the student thought to decide and became more judgmental about choices, showing that this variable influenced the choice criterion for an EI, what can be explained by the fact that students who look for this teaching modality already have a higher maturity degree, in which case turns infrastructure to an important goal to their professional qualification, affecting their choice criteria. In the treatment group regarding the infrastructure, it continues influencing the choice criteria, but with less intensity, what can be explained by the student whose WOM marketing influence encouraged studying in a EI because of its infrastructure, so that the student heals doubts about the EI and also about this variable, showing that the effect of WOM marketing intensify the influence of the infrastructure on EI's selection criteria, not rejecting the hypothesis H1b.

In the higher education modality, in relation to the control group, it can be inferred, at 95% confidence that there is a relation between the variables "Consumer to consumer" (-0,456) and "Price" (0.293), and with 90% of confidence between "EI Quality" (0,429) and "Brand / Image" (0.417) with EI student selection criteria.

According to "Consumer to consumer" variable in the control group, the individual shows less judgmental. It is probably due to the behavior between people and environment of an EI, characteristics that makes student safe to choice. These results confirm the Lehn (2006), Finsterwalder and Kuppelwieser's (2011) findings that people organize themselves socially through their actions and interactions, and thus choose services by observing what happens in the environment.

However, at the treatment group in relation to the variable consumer to consumer, the individual becomes more judicious in the choice process for an EI, beginning to reflect more on the subject due to the information contained in this dialogue with the students do not match their perception of the characteristics of the EI that were obtained by their observation. In this case not rejecting the hypothesis H1b, intensifying the effect of this variable.

As for the variable "Price", this affects positively the choice criterion for an EI, what can be explained by being a public EI without payment of tuition, making the student think, reflect and be more judicious regarding this variable. One of the possible justifications is that, with the unstable Brazilian economy, the student try to economize or simply the family income becomes insufficient to enter the private network. These results confirm the findings of Bergamo et al. (2010) that the perception of the price at the time of choosing the course is associated with the family socioeconomic condition, the choice cannot always be made, and the student then evaluates the scholarship options. In the group that had word of mouth marketing, the result remains the rejection of hypothesis H1b.

It can be noted that the variable "Quality" in the control group (without word-of-mouth marketing) was significant with a confidence level of 90% and 95%, respectively, in the groups with and without control of campus, gender, income, and father and mother activity. By demonstrating that students' reflect on this variable before the decision, that is, this variable influences the choice criteria for an EI. When the data with the interaction of the dummy Treat were analyzed, it was observed that the variable "Quality" continues to be significant with the same level of 90 and 95% confidence respectively in the groups with and without control, but the word-of-mouth marketing practiced by the students do not need to think about the EI quality anymore, as there is now no doubt about the EI quality, demonstrating that WOM marketing enhances the effect of this variable on EI's rejecting the hypothesis H1b, confirming that WOM marketing practiced by EI students influences the decision of new students. (Berger, 2014; Santiago et al., 2014; Dalmonech et al., 2016).

The "Trademark / Image" variable in the control group (without WOM marketing) was significant only at a 90% confidence level. When analyzing the data with the interaction of the dummy Treat, the variable " Trademark / Image" remains significant, but now with 95% confidence, and demonstrates that the WOM marketing practiced by EI students helps future ones to decide by an EI when observing this variable; they do not need to think about other options or be very judicious in their choice process, because the EI has a favorable reputation in the market. Not rejecting the hypothesis H1b, confirming that the WOM marketing practiced by students of IE enhances the influence of the Trademark / Image in the choice criteria for an EI.

It is also noticed that the results were different among the teaching modalities; this can be justified by the profile of the students of each modality, due to their peculiarities. For example, in the integrated technician to high school the students are young people of low family income looking for knowledge and a profession, already in the higher course the others



are yearnings, in which they involve quality, image, educational environment and mainly price (without payment of monthly fees). The latter certainly related to income.

In general, WOM marketing intensifies the influence of factors that have an effect on EI's student choice criteria. Table 2 presents the results regarding the variables that were intensified by the effect of word of mouth marketing, as discussed in hypothesis H1b.

Teaching Modality	Variable	Classification
Technician Integrated to High School	Labor Market	More Criterious
	Infrastructure	More Criterious
Technician	Infrastructure	Less Criterious
Higherschool	EI Quality	Less Criterious
	<i>Consumertoconsumer</i>	More Criterious
	Trademark / Image	Less Criterious

**Table 2: Results of the hypothesis H1b.**

Source: Applied research data. Prepared by the author.

## 5 CONCLUSIONS

This study aimed to verify if the indication by some EI students through WOM marketing influence indirectly the student's choice criteria, analyzing, specifically, a theoretical model with different research design from the usual literature, which has a control group, and thus to mitigate endogenous features to the EI choice criteria and to minimize self-selection problems.

After data analyze, it was seen that when the treatment group is analyzed only, WOM marketing positively influences on EI's choice criteria on Technical Teaching modality, not in other teaching modalities. However, when eliminating endogeneity and analyzing treatment and control groups, it was noticed there is no evidence that WOM marketing systematically has a direct effect on EI's student choice criteria, what contraries literature, once Silva et al. (2008) and Santiago's et al. (2014) findings, among others, show that WOM marketing practiced by enrolled students influences new students decision. Such result justifies the use of approaches that minimize self-selection problems in analyzes that involve WOM marketing.

In addition, it was noticed that the WOM marketing can intensify the influence of some variables which interfere on the student's choice criteria by an EI: labor market and infrastructure –at Technical Education Integrated to High School -, infrastructure – at Technical Education and EI quality -, consumer to consumer and trademark / image - at higher education. Therefore, it is concluded that even WOM marketing not directly influencing EI's selection criteria is an important disseminating mean for an EI, what

transforms the future student's vision, and also some variables that influence on choice criteria.

Thus, it was verified that this study was relevant for the literature, once it contributed on understanding of WOM marketing for an EI choice criteria, besides revealing the students' behavior faced its indication or not; fact not researched yet, demonstrating that WOM marketing does not directly influence the criterion of choice, but it potentiates other variables that influence the criterion of choice. This way, EIs managers could find themselves on this study to improve their efforts in future decision-making regarding projects and public policies related to the students' enrollment.

However, it is noticed some limitations that conditioned this research conclusions. First, it did not pretend to search data in all IFES campuses. In the same way, the model did not concern about getting different levels of student's identification with the possible career from the chosen course.

Therefore, it is suggested that future researches try to identify why a student who enters the Technical Course Integrated to the High School at IFES with no indication is not influenced by any of the presented variables. Discover what takes these individuals to enter the IFES course and what weighs in their choice criteria by IFES is important. It is also recommended that future researches could test the model created in a larger sample with features representing the diversity of the researched students, ensuring larger perception about their selection criterion by an EI, including investigating the student's identification levels with a possible career set up by the chosen course. It is also suggested applying the same research in a private EI, once this kind of student may have a different choice criterion than the one who looks for a public EI.

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