Private Higher Education Institutions Intangible Assets: A Comparative Analysis of The Human, Intellectual and Integrative Capital of Teachers before and after Titration

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Abstract

This article aims to compare the Human Capital, Intellectual Capital and Integrative Capital production of teachers before and after their academic degree. With this goal, the following problem will be answered: the incentive to the teachers to their professional qualification, the academic degree search, of HEI (Higher Education Institution) interest under the aspect of Human Capital, Intellectual Capital and Integrative Capital production rise, has generated expected results in each capital after reaching the titration? The present hypothesis are two: there are no differences in production of Intangible Assets in Human Resources before and after academic degree and there are differences in production of Intangible Assets in Human Resources before and after academic degree. Regarding the methodology, it was used a qualitative approach with deductions and inductions to the production of theoretical construction from the data analysis, proposed by Silva et al, (2010)

Keywords: Intangible Assets; Human Capital; Intellectual Capital; Integrative Capital.

1. Introduction

There are several conceptions to the word “service”. One of them refers to an immaterial economic well because it is not presented in a material format. They are, actually, products of human work without necessarily acquiring a visible form. The education is an example of service in the category of intangible good which classification in intellectual property is the power of control. (Barbosa, 2010)

Therefore, the universities produces intangibles goods and services with difficulties of mensuration and quantification in terms of economic and social impacts surrounding it. Among them, we can quote: the human capital (teaching, events, extension, forums), the intellectual capital (the scientific productions), the integrative capital (participation in academic and scientific activities as an evaluator, participant and

others). Besides that, how to make it tangible, in terms of economic values; such as making public the results of this intangible production of goods.

In order to that, the teaching profession requires of Human Resources a constant production of intangible assets to keep themselves fit for the function. Among the needed intangible assets used to base evaluations of HEI are the already quoted Human Capital, Intellectual Capital and Integrative Capital.

Soon, it is questioned the incentive to teachers to their professional qualification, search for academic degree, interest of HEI under the aspects of rising production of Human Capital, Intellectual Capital and Integrative Capital, has it generated the expected results in each capital after reaching ten titration?

Based on that questioning, this article aims to compare production of Human Capital, Intellectual Capital and Integrative Capital of teachers before and after their academical degree and as hypothesis:

H_0: There are no differences in production of Intangible Assets in Human Resources before and after academic degree.

H_1: There are differences in production of Intangible Assets in Human Resources before and after academic degree.

2. Methodology

It is about a qualitative approach that constructs theories from deduction, induction with the researchers' interpretation which inferences to hypothesis formulation and concepts construction are the analysis of data (SILVA *et al*, 2010)

Once chosen the HEI searched information in its academic portal available online and checked all the needed information to realization of data collect identifying described teachers in the institutional portal with the selection of teachers that changed titration from specialist to master and from master to doctor, maintaining the link to HEI. Then, it was researched lattes curriculum to the productions categorization in human, intellectual and integrative capital.

3. Results

The results are presented in three tables with the corresponding to each kind of capital and application of t-student test that showed that there are no differences between straight inclinations before and after titration. In all of them, there are analysis of 16 teachers: 11 that went from specialist to master and 5 from master to doctor.

Table 1. Human Capital

Titration	**Index before titration**	**index after titration**	**Variation**
Master	0,02	0,00	-0,02
Doctor	-0,01	0,00	0,01
Master	0,30	-0,60	-0,90
Doctor	-0,05	0,00	0,05

Master	-0,20	-1,00	-0,80
Master	-0,30	-0,20	0,10
Master	-0,50	0,00	0,50
Doctor	0,75	-2,00	-2,75
Doctor	0,80	0,00	-0,80
Master	1,00	-6,00	-7,00
Master	-0,50	0,00	0,50
Master	0,30	0,00	-0,30
Doctor	-2,50	0,00	2,50
Master	-0,05	0,75	0,70
Master	-1,50	0,60	0,90
Master	-0,02	0,00	0,02

The table analysis referring to human capital shows that 7 from sixteen teachers presented a negative variation after titration, that is, 43% had reduction in production. Regarding the doctors, from 5, 2 had negative variation that corresponded to 40%. Already the masters, from 11, 5 presented a negative variation, that is, 45,5%. This shows us that both in the grand total of masters and doctors and in the individual of each degree there always was a percentage starting at 40%.

Another highlighted point in the table is that 9, that is, 56,25% of variations stood on stagnation zero point, that is, low index when compared with the titration evolution, which shows little progress with titration.

Although 57% had positive variation in the index, the value of positive variation is too small related to the negative because, from 9, 4 had variation equal or below to 0,1, that is, 44,44%. The other 4 between 0,5 to 0,9, corresponding also to 44,44% and only 1 above 1, with 2,5, which means only 11,11%.

Regarding to the 43% of negative variation only 1, from seven, had a variation below 0,1, which corresponds to 14,28%. Below of 0,5 only 1, also with 14,28%. And with values from 0,8 and below 1 was 3, corresponding to 42,85%. Completing, there was two variations a lot bigger than 1 to less: 2,5 and 7 corresponding to 28,57%.

While observing the two paragraphs above, we see that the positive variation in terms of variation is very little expressive when compared to the negative variation. Besides that, it is just see that only one value from positive variation in fact it has bigger expression 2,5 while only one from negative has little expression with most above 0,5 passing by 2,5 and reaching 7.

Table 2. Intellectual Capital

Titration	**Index before titration**	**index after titration**	**Variation**
Master	0	0	0
Doctor	-0,07	0	0,07
Master	0,17	-0,17	-0,34
Doctor	0,5	-3	-3,50

Master	0,05	0	-0,05
Master	-0,4	-0,05	0,035
Master	-0,1	0	0,1
Doctor	0,75	-3	-3,75
Doctor	0,3	0	-0,3
Master	0,5	-1,5	-2
Master	-0,2	0	0,2
Master	1	-2	-3
Doctor	-0,05	-0,3	-0,35
Master	1,5	-0,25	-1,75
Master	-0,45	-0,5	-0,95
Master	0	0	0

While reading the table referring to intellectual capital we realize that 10 from sixteen teachers presented a negative variation after titration, that is, 62,5% had reduction in production. Regarding the doctors, from 5, 4 had a negative variation which corresponds to 80%. This show us that from the doctors only 1 presented positive result after titration, in terms of intellectual production and almost 50% from masters too.

Another highlighted point in the table is that 7, that is, 43,75% of variations stood on stagnation zero point, that is, low index when compared with the titration evolution, which shows little progress with titration. Here, in intellectual production, the results of positive variation are quite smaller than the negative the 37,5% (with a lower expression) and, even so, the value of positive variation is really small regarding the negative because from 6, 2 did not have variation staying at 0, that is, 33,33%. From other 4, 2 below 0,1 corresponding, also, to 33,33% and only 1 with 0,1 and 1 with 0,2, being very little expressive representing very little in terms of evolution in intellectual production.

Regarding to the 62,5% of negative variation only 1 from 10 had a variation below 0,1, which corresponds to 10%. Below of 0,5 only 3, with 30%. Above of variation 1, there was 5 corresponding to 50% and only 1 with 0,95, corresponding to 10%.

While observing the two paragraphs above, we see that the positive variation is very little expressive when compared to the negative variation. Besides that, it is just see that not even one value from positive variation in fact it has bigger expression, while in negative, almost all of them has expression reaching 3,75.

Table 3. Integrative Capital

Titration	**Index before titration**	**index after titration**	**Variation**
Master	2	-8	-10
Doctor	0,17	0	-0,17
Master	-0,4	0,8	12
Doctor	-0,8	0,5	13
Master	0,5	-2,5	-3

Master	1,25	-1,25	-2,5
Master	-0,18	0	0,18
Doctor	1,2	1	-0,2
Doctor	2	-12	-14
Master	1,6	0	-1,60
Master	0,7	-0,4	-11
Master	1,3	0	-1,30
Doctor	-0,7	-0,2	0,5
Master	-2	-3	-1
Master	-1,5	-4	-2,5
Master	-0,5	0	0,5

While analyzing the table referring to integrative capital it is realized that 11 from sixteen teachers presented a negative variation after titration, that is, 68,75% had reduction in production. Regarding the doctors, from 5, 3 had a negative variation which corresponds to 60%. Already the masters, from 11, 8 presented a negative variation, that is, 72,72%. This shows us that both in the grand total of masters and doctors and in the individual of each titration, which refers to integrative capital, there always was a percentage from 60%.

Another highlighted point in the table is that 5, that is, 31,25% of variations stood on stagnation zero point, that is, low index when compared with the titration evolution, which shows little progress with titration.

Here, equally to intellectual capital, the results of positive variation are quite smaller than the negative the 31,25% (with a lower expression) and, even so, the value of positive variation is really small regarding the negative because from 5, 2 had variation 0,5, that is, 40%. 20% has a variation smaller than 0,1 and only 40% had a positive expressive variation.

Regarding to the 68,75% of negative variation only 1 from eleven had a variation below 0,1, which corresponds to 9,09%. Below of 0,5 only 1, also with 9,09%. Already with values from 1, there was nine left corresponding to 81,81%. Here, three values from 10 call the attention. Here appears the biggest variations.

While observing the two paragraphs above, we see that the positive variation is very little expressive when compared to the negative variation. Besides that, it is just see that only two values from positive variation in fact it has bigger expression 2,5, while only one from negative has little expression with most above 1 and reaching 14

4. Discussion

The results presented in the previous item shows that regarding the three capitals, the only one that presented a positive result, but not expressive, in the general aspect was the human with 57%, maybe because it is the capital with a bigger straight relation with the HEI, once that is related with the proposed events by it or in participation to the personal construction in other environments.

Already in the intellectual production, that would score a lot to HEI, for example, in a evaluation of ministry of education there was a fall of 62,5%, what shows that produced to step into the master's and doctorate programs and this decrease increased in the integrative capital with 68,75%, that is, they are only fulfilling the process of class and the aggregation of values from the integrative capital, they are not giving feedback to HEI.

One of the ways to improve the previous question would be a better measurement of Intellectual Capital. For that it is necessary to determine specific indicators according to the characteristics of each organization. This happens because it is an intangible asset and therefore loaded with subjectivity and therefore could not be compared to activities inside the same sector and not even between countries because there is no metrical generalization. (MACHADO, 2008).

There is no way for companies to maintain the highest quality content in their productivity with differential expression in relation to the competition without following changes resulting from new technological adventures and the reduction of borders in the globe. To accomplish being in this adaptation, they must be investing in their human capital all the time for the development of professional and personal competencies with training congruent to the company's objectives in order to produce efficiently and quickly what they need. However, many organizations did not realize yet the importance of this intangible that is fundamental to organizations to achieve competitive advantage and survive in the market. (SPINELLI,2015).

On the three capitals, besides the negative values, stagnation stood out, being that human was the biggest. Besides only having a positive value in human, in three capitals the positive variation practically did not have expression. These data present themselves equal in titration changes, regarding the doctors, the same general logic was followed regarding negative values: in integrative capital only 2 evolved; on intellectual only 1; in human 4. The same principles applied to masters.

Therefore, the three capitals must be in complete harmony and must be worked together for the accomplishment of the company. When this happens, there is an increase in each of these company's dimension adding to each other. If the contrary happens, may occur the opposite, also a subtraction instead of adding. Investing in one without a dialogue with another does not generate results, for example, investing in human, but not working the integrative, the question remains for those who sells, even with all the quality of human capital. (VAZ, VIEGAS & MALDONADO, 2017)

When comparing the data before and after titration there are no improvements in terms of capital results to HEI. The Human Resources are the same before and after titration confirming the null hypothesis that there are no differences between Intangible Assets produced by Human Resources before and after academic degree and the capital with less evolution after titration is the integrative. Actually, the data showed that the proportion that the capital asks for more participation of the subject for values to HEI, less evolution has after titration according to relation: HC bigger than IC bigger than INC.

The results of a knowledge management monitored on the basis of indicators are improvements in the products and services of organizations, a collaborative and learning environment with income from people's work, therefore, gains that must be sought. All of this occurs with actions and policies to encourage the correct use of tools to monitor management and the organization of knowledge. However, in fact for this to occur, it is necessary to systematize techniques that organize the production of knowledge and

incorporated into the processes that builds the organization, specially, in three perspectives: transformation, treatment and knowledge availability. Thus, depending on how important is to KM manage best practices in order to create collaborative environments and to encourage the use of IA. For this, it is necessary for KM to present a process with assistive steps and help to build an environment capable of, besides measuring, transforming and making available the knowledge produced, be able to build an organizational memory. (SILVA; DAMIAN; SEGUNDO, 2016).

Although being confirmed lately the importance and value of intangible assets like being the main survival tool of the companies in competitive environment, there still is a lot of difficulty to actually analyze them. There are several theories to evaluate, spite their potentialities, a lot of limitations are noticeable. In fact, it is a complex assessment that has involved major debates in the various areas of accounting in dialogue with finance. In essence, there needs to be a meeting point between the various theories to allow a global analysis of the data and information from these assets, however, in the financial statements there is not much evidence of the completeness of the IA that should be complemented with the financial methodologies. Thereby, the dialogue between these two perspectives would help to improve the power of decision because the accounting shows how there is an intangible assets cycle bringing information that changes the company situation in the patrimonial and economic order whose analysis must now be carried out by the financial sector in relation to external data. (CAVALCANTI et al., 2017)

In the case of HEI, the articulation of administrative processes with academics is part of a good management process so that they are the intangible assets that add value when well managed. That includes the management participating in academic meetings, dialogue with course coordinators, metrics and goals construction for the faculty and decision making from this debate (SILVA DOS SANTOS, 2016).

HEI's egress are the final result that will indicate HEI's value. They take the intangible of intellectual, human and integrative capital of HEI. The academic management process need to keep up, while the students course, the faculty work, the pedagogical project, the student/teachers relationship, extension activities and related researchers to the teaching so that the final result revert in values to HEI. That requires the intangible assets management for decision making (TACHIZAWA & ANDRADE, 2006).

Actually, if HEI does not invest in others institutional interests, the degree will only serve to achieve documentary standards of quality and increase in salary value (increase in expenses). The difference between inclination values, almost all negatives point to the raise Intangible Assets production, specially the intellectual and the integrative.

5. Final Thoughts

After analysis and discussion of results can be inferred the following considerations: from the three capitals, the only one that presented a small positive variation, after titration, although little expressive, was the human; there was a drop in the intellectual and integrative capital; there was a highlight also in terms of stagnation for the three capitals; regardless of specialists to masters or masters to doctors, the results kept the same logic; the capitals evolution after titration followed the following logic of increasing results, INC was the one with the lowest evolution, followed by intellectual and, lastly, the human; there was no improvement to the HEI in terms of intangible assets in Human Resources after teacher's titration; finally,

is fundamental to watch closely the human, intellectual and integrative capitals of HEI' faculty for coherent and assertive economic decision-making, which shows the IA's importance.

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