IMPACT OF INTERNATIONAL BRANCH CAMPUS KPIS ON THE UNIVERSITY COMPETITIVENESS: FARE METHOD[*]

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Abstract. International branch campus is a rather new phenomenon in higher education and it is often questioned if it is an effective tool for HEI competitiveness because of its high risks and extremely high costs. In order for higher education institution managers to be able to use an international branch campus (IBC) as a tool for competitiveness, indicators of IBC having the strongest influence on the competitiveness of HEI must be indicated. In order to determine the main key performance indicators semi structured interviews were executed with the top managers of international branch campuses globally and the gathered data was analysed and coded using the computer assisted qualitative data analysis (CAQDAS) with Nvivo software. Six most important key performance indicators of IBCs have been identified and the FARE (Factor Relationship) method was used in order to determine the weights of the latter criteria. A system of indicators has been developed to assess the impact of HEI international development on the university's competitiveness and a relationship between the key performance indicators of the IBCs and the university's competitiveness has been revealed.

1. Introduction

Internationalisation is an ultimate condition and the way for HEIs to operate. Due to its complexity internationalisation is an institutional change factor, is making strong influence on goals, culture, resources and behaviour of the HEIs, having crucial role for their competitiveness (Altbach & Knight, 2007; Radzevičienė & Girdzijauskaite, 2012; Senan, 2018; Lysytsia et al., 2019). In response to external as well as internal pressure HEIs strive to increase the volume and enhance the quality of internationalisation activities. There is a high demand for the investigation of the critical factors and tools to enhance internationalisation in practice.

The competition in higher education area is growing and universities are becoming more and more entrepreneurial. It is argued in literature that universities will be run like multinational corporations and will have to incorporate business models in order to operate successfully (Czinkota et al., 2009; Ennew, 2012; Gallagher & Garrett, 2012; Kim & Zhu, 2010; Naidoo, 2008, 2009; Naushad, 2018). It is also argued that entering international markets is a source of competitiveness. The most radical foreign market mode in higher education is an international branch campus.

According to the British Council, an international branch campus (IBC) is a stand-alone satellite operation in the host country established by the sending HEI. An IBC is responsible for all aspects of recruiting, admission, programme delivery and awarding of the qualification. In addition to faculty employed from the parent institution, the IBC may employ local and/or international faculty to assist with teaching. Quality assurance of the programme is the responsibility of the sending HEI and is often subject to additional accreditation processes by the host country.

International branch campus is a rather new phenomenon in higher education and it is often questioned if it is an effective tool for HEI competitiveness because of its high risks and extremely high costs. Just like mobility has been the most visible aspect of internationalisation, IBCs are the most visible and riskiest aspect of transnational education (Beecher & Streitwieser, 2017; Girdzijauskaite & Radzeviciene, 2014; Healey, 2008, 2015; Mazzarol et al., 2003; McBurnie & Pollock, 2000; McBurnie & Ziguras, 2007). These stand-alone satellites are risky in terms of reputational damage and financial loss, which may have been one of the reasons why the literature on this topic has been limited (Healey, 2015).

In order for higher education institution managers to be able to use an IBC as a tool for competitiveness, it is important to know, which indicators of IBC have the strongest influence on the competitiveness of HEI and take advantage of this knowledge. There is a lack of knowledge, necessary for the evaluation of the impact of the international branch campus on the competitiveness of a university and for the strategic and systematic approach to international branch campus as the most radical form of foreign market entry.

Evidently development of international activities in higher education is still an important subject for research especially the most recent topics: education export, branch campuses, and multinational universities (Becker, 2009; Healey, 2015; Girdzijauskaite & Radzeviciene, 2014; Knight, 2005; Lane, 2011; Lawton & Katsomitros, 2012). Mastering the measures of international cooperation would allow for maximization of gain in such initiatives.

The need to test the internationalization of HEIs through quantitative methods has been discussed in the literature (Jiang and Carpenter, 2011; Goi, 2016). However, qualitative analysis methods are used in such research much

more frequently. Multicriteria evaluation using the factor relationship method (FARE) has been performed in this study in order to fill the gap.

2. Methodology

In order to determine the main key performance indicators semi structured interviews were executed with the top managers of international branch campuses globally and the gathered data was analysed and coded using the computer assisted qualitative data analysis (CAQDAS) with Nvivo software. Individuals were selected according to their function, campus location, as well as minding the female and male balance, in order to include all relevant groups: faculty, administration and management.

While a structured interview has a rigorous set of questions that do not allow one to divert, a semi-structured interview is open, allowing new ideas to be brought up during the interview as a result of what the interviewee says. The interviewer in a semi-structured interview generally has a frame-work of themes to be explored.

Interviews were audio taped (average time of the interview: 20-30 minutes). Audio data was then transcribed to text providing around 600 pages of data which was then coded and analysed with the Computer Assisted Qualitative Data Analysis (CAQDAS). Nvivo software was used for this, allowing to code all the text data and be able to look through the matrixes of thematic nodes and discover relationships.

After having identified the key performance indicators of IBCs that are influencing the overall competitiveness of a university the multicriteria evaluation using the FARE method has been performed in order to discover how each of the key performance indicators of international branch campuses influences the overall competitiveness of a higher education institution.

Despite of which method would have been chosen to use, all of them require to have the values of criteria and their influence weights. Usually the criteria weights are determined by experts. The limitation is predetermined by the fact that the accuracy of expert evaluation has a strong dependency on the number of criteria chosen for the research. The bigger the number of criteria, the more complicated it is for the expert to compare the alternatives and determine the weights. In this paper, a FARE (Factor Relationship) method (Ginevičius, 2006) is used, allowing the determination of weights of a large number of criteria based on the relationship between the criteria.

FARE method has been chosen over other multicriteria evaluation methods because it allows to increase the accuracy of calculations and to reduce the expert work.

The accuracy of the results reached while using the multi-criteria evaluation methods tend to depend on the determination of the criteria weights which are based on their interrelationship with each other (Ginevicius, 2006). FARE method was chosen for this research as one of the most accurate multi-criteria evaluation methods at the moment.

3. Results

After analysing the interviews, the conclusion was drawn that the following are the main key performance indicators having the biggest effect on the competitiveness of a HEI according to the respondents of the interviews: number of study programs taught at IBC, yearly income of IBC, having partners in IBC establishment in a form of joint venture (num-ber of partners), number of international staff (not local) in IBC, number of social partners in a host country of IBC, student number in IBC. Hence, the latter six KPIs were chosen for the evaluation of the interrelationship (Table 1).

Table 1. The key performance indicators chosen as the criteria for the multicriteria evaluation using FARE method (source: compiled by authors)

Criterion No.	Criterion
Createrion 1	Number of study programs taught at IBC
Createrion 2	Yearly income of IBC
Createrion 3	Having partners in IBC establishment in a form of joint venture (number of partners)
Createrion 4	Number of international staff (not local) in IBC
Createrion 5	Number of social partners in a host country of IBC
Createrion 6	Student number in IBC

Source: compiled by authors

The criteria weights were determined by the expert. The experts for the criteria weight determination were chosen based on their experience in the field of international branch campus management. Therefore, the experts were the top executives from IBCs all over the world, who are directly responsible for the decision making at the IBCs. The experts were interviewed and asked to determine the weights for 6 criteria, evaluating which key performance indicators (KPIs) of the international branch campuses (IBCs) has the highest influence on the overall competitiveness of the university.

Firstly, the experts ranked all the criteria by assigning them the relative standing positions against each other. In this way, the relationships between all the criteria were determined. Based on this logic, the 1 to 6 ranking amplitude was formed, where the total number of criteria (in our case – 6) was the lowest influence indicator, and 1 was the highest. The latter meaning that, the criterion which was ranked as the first has the highest influence on university's overall competitiveness in comparison with others (Table 2).

Table 2. Ranks assigned by experts for each criteria in the system (source: compiled by authors)

Criterion No.	Criterion	Rank
Criterion 1	Number of study programs taught at IBC	1
Criterion 2	Yearly income of IBC	5
Criterion 3	Having partners in IBC establishment in a form of joint venture (number of partners)	3
Criterion 4	Number of international staff (not local) in IBC	4
Criterion 5	Number of social partners in a host country of IBC	6
Criterion 6	Student number in IBC	2

Source: compiled by authors

Secondly, the experts were asked to determine the scope of the transfer for the highest ranked criterion. The latter has been done by using the scale of quantitative evaluation of interrelationship between the system's criteria, where the type of effect produced and the rating of the effect produced by the interrelationship (in points) are as follows: almost none – 1, very weak – 2, weak – 3, lower than average – 4, average – 5, higher than average – 6, strong – 7, very strong – 8, almost absolute – 9, absolute – 10. The scope of the transfer for the highest ranked criterion as assigned by the experts can be seen in Table 3.

Table 3. The relationship between the first main criterion and other system's criteria determined by the experts

Criteria	1	6	3	4	2	5
1	-	+7	+6	+5	+4	+3

Source: compiled by authors

The important point behind this ranking is that the criterion of a lower rank has relatively smaller impact on the criteria having higher ranks. Thus, it transfers a larger part of its potential impact to them. It follows that the ranks of the calculated criteria weights should match their numbers in the priority list, which means, that the higher ranked criteria should be assigned higher criteria weights. This important remark shall be referenced to in further calculations, where the strength and direction within the relationship between criteria is determined.

When the relationship between the main criterion (in our case it is the 1st criterion) and other criteria was determined, the concordance coefficient of Kendall (1939) was calculated in order to revisit the compatibility of the results.

Kendall's coefficient of concordance is a measure of the agreement among several quantitative or semi quantitative variables that are assessing a set of n objects of interest. In the social sciences, the variables are often experts, assessing different subjects or situations. (Kendall & Babington, 1939)

The concordance coefficient showed the sufficient consistency of expert's evaluations. The data was primary converted into ranks; later the ranks were displayed, and finally calculated.

After having checked the expert evaluations with the concordance coefficient of Kendall (1939), the relations between the remaining criteria groups and their strength were analytically measured in accordance with the relationships established at the first stage. Based on the formula (1), the part of the criterion's potential impact was transferred to the first criterion (Table 4).

$$a_{1i} = S - \widetilde{a_{1i}} \, , \tag{1}$$

where a_{1i} is the impact of i-th criterion on the first main criterion; $\widetilde{a_{1i}}$ is the part of i-th criterion's potential impact transferred to the main criterion.

Table 4. The part of the criterion potential impact transferred to the first main criterion

Criteria	1	6	3	4	2	5
1	-	+3	+4	+5	+6	+7

Source: compiled by authors

Thus, a criterion of the higher rank takes a part of the lower rank criterion's potential, because the criterion of a lower rank has smaller impact on the criteria having higher rank, therefore it respectively transfers a larger portion of its potential impact to them. In our case, the experts have ranked the criteria No. 3 by number +6, meaning that the effect on the main criterion No. 1 from criteria No. 3 is higher than average. Therefore, criteria No. 3 transfers its potential impact equal to +4.

As shown in table (Table 4), the first criterion is ranked first, while the second criterion is ranked fifth. It follows that the second criterion should transfer a part of the potential of its impact to the first criterion.

The relationship direction is indicated by a plus or a minus sign, showing that the considered criterion either influences another system's criterion or depends on it. A negative relationship shows that the considered criterion is less significant than the one to which it is related. Therefore, it transfers a part of its potential to it. A positive relationship on the other hand means that the considered criterion accumulates the potential of another criterion, therefore increasing the potential of its impact. Then, the matrix based on calculations was represented in table with a summary matrix of the potential equilibrium (Table 5):

Table 5. A summary matrix of the potential equilibrium of the criteria describing the research object

Criteria	1	2	3	4	5	6
1	-	+6	+4	+5	+7	+3
2	-6	-	-2	-1	+1	-3
3	-4	+2	-	+1	-11	-1
4	-5	+1	-1	-	+2	-2
5	-7	-1	+11	-2	-	-4
6	-3	+3	+1	+2	+4	-
Total	-25	+11	+13	+5	+3	-7

Source: compiled by authors

When the matrix of the potential equilibrium of the criteria describing the research object was calculated, the total potential impact using formula (2) was calculated based on the data presented in the first row of the latter matrix. The results of these calculations can be seen in the table (Table 6) below. As it is evident in the table (Tab. 6) below, the results are compatible with each other when the total effect (dependence) is equal to zero.

$$P_i = P_i \text{-} ma_{1i} , \tag{2}$$

The actual total impact with the actual total impact of each criterion of the system on the research object were found, in order to be able to calculate the weights of criteria based on formula (3) and formula (4).

$$P_S = mP = mS(m\text{-}1), \tag{3}$$

$$P_i^f = P_i + P , \tag{4}$$

Table 6. The results obtained in calculating the total effect (dependence) of the criteria describing the research object

Criteria	1	2	3	4	5	6	Total effect, P_i (Dependence)	P_i^f
1	-	+6	+4	+5	+7	+3	+25	+75
2	-6	-	-2	-1	+1	-3	-11	+39
3	-4	+2	-	+1	-11	-1	-13	+37
4	-5	+1	-1	-	+2	-2	-5	+45
5	-7	-1	+11	-2	-	-4	-3	+47
6	-3	+3	+1	+2	+4	-	+7	+57
Total	-25	+11	+13	+5	+3	-7	0	300

Source: compiled by authors

Finally, the normalized values of the potential of the total impact of the criteria on the research object were calculated based on formula (5). Firstly, for main criterion No. 1, the results are represented in table below (Tab. 7) and then consequently, for all other criteria in the created matrix (Table 7).

$$w_i = \frac{P_i^f}{P_S} = \frac{P_1 - ma_{1i} + S(m-1)}{mS\,(m-1)},$$ (5)

Table 7. The results of weight calculation of the criteria describing the research object

	1	2	3	4	5	6	Total
Relationship between the first criterion with the other criteria	-	+6	+4	+5	+7	+3	$P_1 = 25$
Weights of criteria group w_i	0.25	0.13	0.12	0.15	0.16	0.19	$\sum_i^n w_i = 1.0$

Source: compiled by authors

Consequently, the normalized values of the total impact of the criteria on the research object were calculated for all other criteria in the created matrix (Table 8).

Table 8. The calculation of the criteria weights of IBC KPIs by FARE Method

Criteria	1	2	3	4	5	6	Total effect, P_i (Dependence)	P_i^f	w_i
1	-	+6	+4	+5	+7	+3	+25	+75	0.25
2	-6	-	-2	-1	+1	-3	-11	+39	0.13
3	-4	+2	-	+1	-11	-1	-13	+37	0.12
4	-5	+1	-1	-	+2	-2	-5	+45	0.15
5	-7	-1	+11	-2	-	-4	-3	+47	0.16
6	-3	+3	+1	+2	+4	-	+7	+57	0.19
Total	-25	+11	+13	+5	+3	-7	0	300	1

Source: compiled by authors

Finally, the effect and relationship between international branch campus key performance indicators and university competitiveness were deter-mined and evaluated using FARE method and the following findings were discovered.

Conclusions

The hyper competition among HEIs has been growing globally. Establishing a branch campus might be a way to overgrow oneself, significantly strengthen the international presence.

It has been discovered that IBC establishment can have a considerable effect on the competitiveness of a higher education institution. A system of indicators has been developed to assess the impact of HEI international development on the university's competitiveness and a relationship between the key performance indicators of the IBCs and the university's competitiveness has been revealed.

The following indicators have been identified and listed according to the strength of a positive impact they have on the university competitiveness: number of study programs taught at IBC, student number in IBC, number of social partners in a host country of IBC, number of international staff (not local) in IBC, yearly income of IBC, having partners in IBC establishment in a form of joint venture (number of partners).

The discovered patterns and indicators shall allow further research on the strategic tools enabling universities to adopt international development solutions using an IBC as a tool for foreign market entry.

Abbreviations

FARE: Factor Relationship Method
HE: Higher Education
HEI: Higher Education Institution
IBC: International Branch Campus
KPIs: Key Performance Indicators

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