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The regional engagement of universities under a stakeholders' analysis approach: An empirical framework

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Abstract

In the knowledge era, universities have been gaining a vital role in fostering regional development. The active role of universities in promoting regional targets can be seen as the "third mission" of universities. Towards acting as regional development carriers, universities need to establish networks and partnerships with other regional actors, both public and private, that are working in the same direction. The paper adopts a stakeholders' analysis approach to develop and test an empirical framework for evaluating the regional engagement of universities. Particularly, the paper provides clear-cut empirical responses to a couple of research questions: a) How do regional stakeholders perceive the regional engagement of universities? b) What is the level of perceptions alignment at each particular dimension of regional engagement? The University of Thessaly, in the homonymous Region, is selected as the case-study. Particular dimensions of regional engagement are highlighted and for each dimension relevant items are selected to quantify the perceptions of stakeholders. The stakeholders' responses are incorporated into statistical analyses to extract the score for each dimension item and to test for any existing different among different types of stakeholders (namely, representatives from the university, the civil society, and the business sector).

Keywords: "third mission", stakeholders' analysis approach, University of Thessaly, Region of Thessaly

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1. Introduction

In the knowledge era (Kallioras et al. 2021), universities have been gaining a vital role in fostering regional development (Abreu & Grinevich, 2013; Adamakou et al., 2021). Harloe & Perry (2004) claim that the upgraded role of universities should be considered on par with the fact that policies have started paying more attention to the subnational spatial levels as solid pillars of economic development. As core elements of the traditional Humboldtian model, teaching and research remain the main activities for knowledge generation, but nowadays the gained knowledge is steered towards the confrontation of a more considerable amount of challenges comparing to the past (Collini, 2012; Trippl et al., 2015). Therefore, the traditional activities of the universities are now enriched with new ones for them to be able to correspond to the needs of their "third mission," which is to make the created knowledge more useful for many external partners and citizens (Carayannis & Campbell, 2010; Uyarra, 2010).

By analyzing the different activities of universities within the local and regional environments, academics and practitioners have developed a series of different roles that a university could undertake. A primary distinction of a university's role is this between *mode 1* and *mode 2* typologies. *Mode 1* universities steer their research on "basic principles" and usually have a disciplinary research structure. On the other side, *mode 2* universities are characterized by transdisciplinarity, promote applied research and embrace social accountability and reflexivity (Carayannis & Campbell, 2010). Youtie & Shapira (2008), recognize an additional third mode of universities. According to this, universities do create not only formal but also tacit knowledge, and attention is given to the operationalization of its creation and broader diffusion. Third-mode universities put a premium on the enhancement of local and regional development by enhancing the local capacities and capitalizing on indigenous strengths and capabilities. In order for the universities to fulfill their missions, they should look forward to strengthening their ties with other actors (Uyarra, 2010). For that to happen, a university's mission and its role in the regional system should be made known to all actors in order for the better alignment between the

university's and the region's targets to be achieved (Holton et al., 2015). Therefore, studies on defining the exact role and contribution of universities to their regions are highly important to this direction.

There is an adequate number of studies which shed light on many aspects of universities' engagement with their regions, such as the economic contribution of universities to the regions (Siegfried et al., 2007), their capacities to promote their “third mission” (Sedlacek, 2013), the promotion of sustainability (Leal Filho et al., 2019), the recognition of most relevant stakeholders (Benneworth & Jongbloed, 2010), the role of students in promoting regional development (Lilles & Rõigas, 2017) and the barriers for the full engagement of universities with their regions (Koryakina et al., 2015). Most studies employ quantitative estimations based on real data or dedicated surveys to define the role and the regional engagement level of universities. The caveat with the quantitative studies is that the dimensions of universities' contribution to be evaluated are finite and limited by data availability. On the other hand, surveys have been used to shed light on particular dimensions of university's regional engagement, and thus more comprehensive studies are still to be conducted. It is apparent that the relevant literature lacks case-studies of a multidimensional approach to university's engagement under a stakeholders’ perspective. What's more, literature should be enriched with studies that exclusively focus on the differences among the perceptions of stakeholders regarding the engagement of the university.

Responding to this necessity, the paper adopts a stakeholders' analysis approach to develop and test an empirical framework for evaluating the regional engagement of universities. Particularly, the paper provides clear-cut empirical responses to a couple of research questions: a) How do regional stakeholders perceive the regional engagement of universities? b) What is the level of perceptions alignment at each particular dimension of regional engagement? The University of Thessaly, in the homonymous Region, is selected as the case-study. Particular dimensions of regional engagement are highlighted and for each dimension relevant items are selected to quantify the perceptions of stakeholders. The stakeholders’ responses are incorporated into statistical analyses to extract the score for each dimension item and to test for any existing

different among different types of stakeholders (namely, representatives from the university, the civil society, and the business sector).

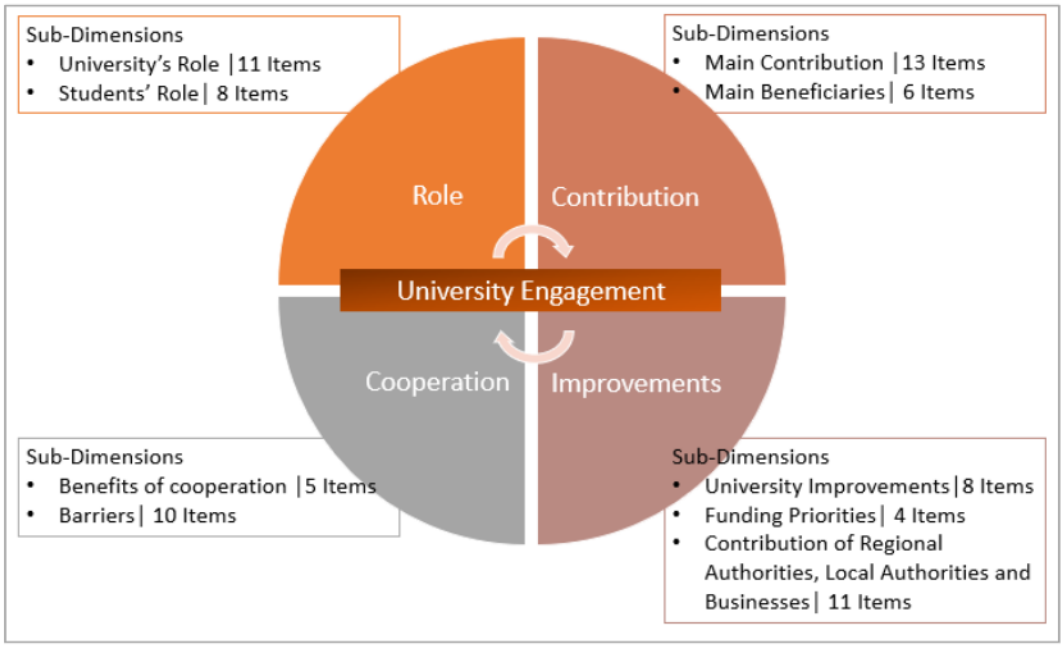
The paper is structured as follows. The current Section is introductory. Section 2 presents the methodological framework together with some theoretical discussion over the selection of the universities' regional engagement dimensions to be evaluated. Section 3 presents the results and discusses their implications as regards the particular case-study. The last Section offers the conclusions and some suggestions for the replication and the further enrichment of the proposed framework.

2. Conceptual Framework and Methodology

a. Conceptual Framework

The evaluation of the university's role and regional engagement is based on a multidimensional framework (see Figure 1). The engagement is assessed based on four dimensions, namely the role of the university, its contribution to the regional society, the level of cooperation, and the potential improvements of engagement.

Figure 1 The conceptual framework of university's engagement evaluation



Source: Authors' elaboration

The university's role (see Figure 1; upper left quartile) is assessed on two sub-dimensions, considering the institutional role and the role of the students for the region under consideration. As for the sub-dimension of institutional evaluation, eleven items are selected to define in the full extent the potential roles that a university can play for its region according to the literature. The two basic functions of universities are provided, together with other tasks that could reveal roles such as innovation incubator, human capital enhancer, a supporter of business, and actor for confronting regional challenges (Carayannis & Campbell, 2010; Uyarra, 2010). The goal is to reveal the dimensions of the "third mission" that are most relevant for the university according to the regional stakeholders. The second sub-dimension examines the role of students and how this is perceived by regional stakeholders. Students are critical parts of the universities' function, and their activities and engagement with the region play a key role in expanding the potential of universities to provide their regions with benefits (Florida, 2006; Geryk, 2018). Eight items are selected to capture a range of possible students' roles. The goal is to reveal the level of faith that stakeholders show on the students' ability to contribute to the region's development.

The second dimension evaluates the contribution of the university (see Figure 1; upper right quartile). It has two sub-dimensions, one for the identification of the tangible and intangible contributions of the university, and a second one, for the main beneficiaries of its contribution. The first sub-dimension is evaluated by using thirteen items and the second by using six. It is acknowledged that a university can affect a number of different instances of regional life, be it economic, social, cultural, environmental, or governance-related (Cross, & Pickering, 2008; Meyer et al., 2018; Trippl et al., 2015). Therefore, the responses of stakeholders may be constructive in revealing which type of contributions the regional university mainly brings up. The second sub-dimension includes several regional and actors that could benefit from the operation of university. The available options do include not only the beneficiaries of knowledge creation and transfer but also some types of actors that could benefit from the operation of the university as organization and all

the direct, indirect and induced economic benefits that this brings up to the region (Dyason & Kleynhans, 2017; Garrido-Yserte & Gallo-Rivera, 2010)

The third dimension encapsulates all cooperation issues emanating from the university's engagement with the region (see Figure 1; bottom left quartile) and has two sub-dimensions. The first sub-dimension, which has five items, seeks to capture stakeholders' views regarding the balance of benefits among the different cooperating parts. This evaluation aims to understand who is benefited the most from the cooperation between the university and the region. The second sub-dimension asks for the opinion of stakeholders regarding the most significant barriers towards the closest cooperation between the university and the region. In the present study, ten items-barriers from both sides but also from the general political context were provided to the respondents.

The fourth dimension seeks to highlight the stakeholders' opinions regarding the available means for improving the university's engagement with the region (see Figure 1; bottom right quartile). The dimension is composed of three sub-dimensions. The first sub-dimension, which has eight items, includes some possible ways that the university can enhance its own capacity to engage with the region. The second sub-dimensions, which has four items, includes the ways that funding should be used if the university seeks to improve its position in the future. The third sub-dimension, which has eleven items, includes the possible means with which regional authorities, local authorities and the business sector could help the university to improve its operations.

b. Sample, questionnaire, and methods of statistical analysis

All dimensions and items were sent to the stakeholders as online questionnaires through Google Forms. The online method was preferred as the survey took place amid the pandemic and several measures impeded physical contact with the respondents (Niavis et al., 2021). The response rate was relatively low (see Table 1), maybe due to COVID-19, but still a capable number of responses were collected, allowing for their statistical analysis. As can be seen, the sample is quite balanced among the three types of stakeholders, with

the largest number of replies coming from the business sector. The stakeholders of the university were mainly members of the rector board, deans of faculties, presidents of departments, directors of research units and representatives of employees. The civil society stakeholders concerned mostly the representatives of the regional authority and of the four main municipalities of the region, parliament members, Non-Governmental Organizations, and the church. The business sector includes enterprises with the highest turnover in the region, representatives of chambers, professional associations and federations, and agricultural cooperatives.

Table 1 Basic characteristics of the stakeholders of the study

Stakeholder Group	University	Civil Society	Business Sector
Roles	• Rector Board • Deans of Faculties • Presidents of Departments • Directors of Research Institutes • Representatives of Employees	• Parliament Members • Regional Authority • Local Authorities • Non-Governmental Organizations • Church	• Enterprises • Chambers • Professional Associations and Federations • Cooperatives
Questionnaires Sent	52	47	55
Questionnaires Received	19	16	20

Source: Authors' elaboration

For all dimensions, a general question was provided with the items on which respondents were asked to state their level of agreement. In order to record the level of agreement, a 1-5 Likert scale was used. The value of 1 denoted perfect disagreement while this of 5 considered as perfect agreement. To provide answers to the 1st Research Question, the average values of all responses are graphically presented for each dimension, together with the respective confidence intervals of the mean. For the 2nd Research Question, the average value of all types of stakeholders for the items of each dimension is comparatively presented in relevant graphs. To identify any statistically significant differences among the scores of the three types of stakeholders, a Kruskal-Wallis non-parametric test is conducted for all items. Kruskal-Wallis

tests the null hypothesis that a number of 2+n (n= 1,….n) samples originate from the same distribution. Therefore, if a statistically significant result is extracted, one can assume that there is a difference among the groups of stakeholders in the scoring of the respective item (Norusis, 2005). The items for which a statistically significant difference is found are marked accordingly in the graphs. All graphs and the confidence intervals of the average values were created with the use of Excel. Moreover, the Kruskal-Wallis test was implemented with the use of SPSS v.20 software.

c. The Case-Study

The region of Thessaly lies at the center of Greece. It has over 700 thousand inhabitants and is divided in five provinces (NUTS-III). The largest province is Larissa, followed by Magnesia, Trikala, Karditsa and the insular province of Sporades. The per Capita Gross Domestic Product is estimated at 16,400 Euro (in Purchasing Power Standards). The region shows a vast specialization in agricultural activities, with the primary sector accounting for 12% of the regional Gross Value Added (ELSTAT, 2021).

The University of Thessaly (UTH) was founded in 1984, and it has over 40,000 undergraduates, over 4,000 postgraduates, and about 1,400 Ph.D. students. It also has 8 Faculties and 37 Departments of all primary scientific fields, providing over 70 postgraduate and Ph.D. programs. UTH employs 1,000 teaching and research staff and 450 members of administrative staff. For research purposes, UTH has over 170 Research Units, 31 clinics, and a comprehensive Research Center named "Iason" with 14 Research Institutes (University of Thessaly, 2021a).

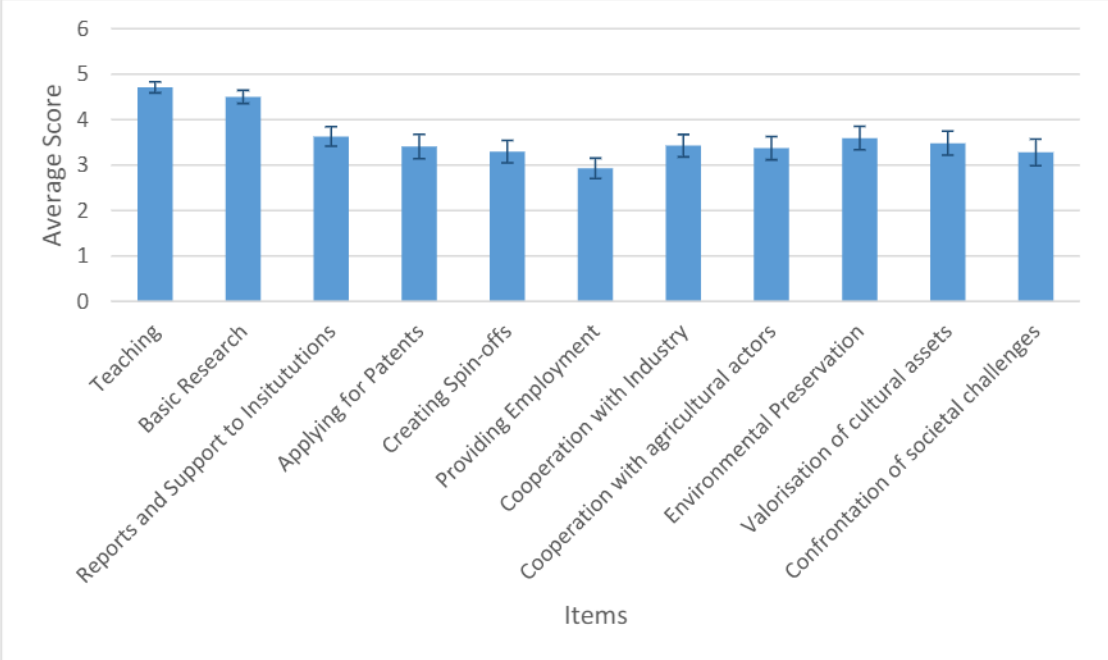
According to the latest rankings of the Academic Ranking of World Universities (Shanghai Rankning, 2021), the university ranks among the best 700-900 universities in the world. The university is devoted to the fulfillment of its “third mission” as in the action plan, the enhancement of cooperation with regional actors, and the use of the gained knowledge for the confrontation of the regional challenges are considered among the most important pursuits of the institution (University of Thessaly, 2021b).

3. Results

a. Role Dimension

The items of the first sub-dimension of the first dimension were provided as options to the Question "The University role consists of the following options:". The mean values of the 11 items (see Figure 2) show that teaching and basic research are recognized as the two fundamental roles of UTH. The third most important dimension of the role of UTH is the provision of support to regional enterprises and agencies through studies and reports followed by the environmental preservation of the region. The roles that follow is the valorization of the cultural assets and the promotion of cooperation with the business and agricultural sector. The least important role is this that sees UTH as an employment generator, although it should be noted that the university is the largest employer in the region. The response patterns of the stakeholders show that the regional society expects the university to fulfill its “third mission” mainly by supporting other actors and confronting regional challenges such as the protection of the environment and the cultural assets of the region. More entrepreneurial-oriented roles such as the creation of spin-offs and the application for patents acquire less significance within the stakeholders' view.

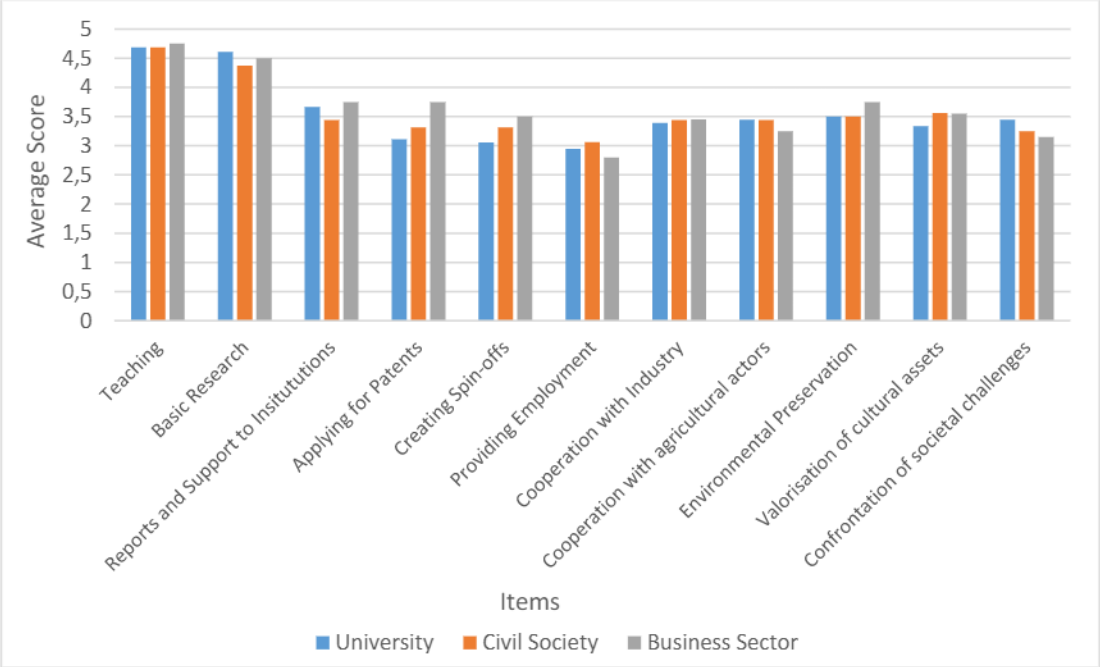
Figure 2 The mean scores of the Role sub-dimension items



Source: Authors' elaboration

As far as the second Research Question is concerned (see Figure 3), the Kruskal Wallis test revealed no statistically significant differences in the scores of the stakeholders' groups. Therefore, the perceptions regarding the role of the university remain almost equal across the three types of stakeholders. Nevertheless, although not statistically significant, there are some differences that should be highlighted. There are items where mean scores are balanced, such as those of teaching, basic research, and cooperation with the economic actors, but in items such as the creation of spin-offs and the application for patents the means are not so equal. For these items, as it was expected, the business sector seems to put a premium with reference to the other two groups. What's more, the mean score of the environmental preservation of the business sector is precisely the same as this of the application for patents, and it is even larger than the one that refers to the creation of spin-offs. This finding highlights a possible commitment of the regional business representatives to environmental targets, which is very promising for the promotion of sustainability in the region.

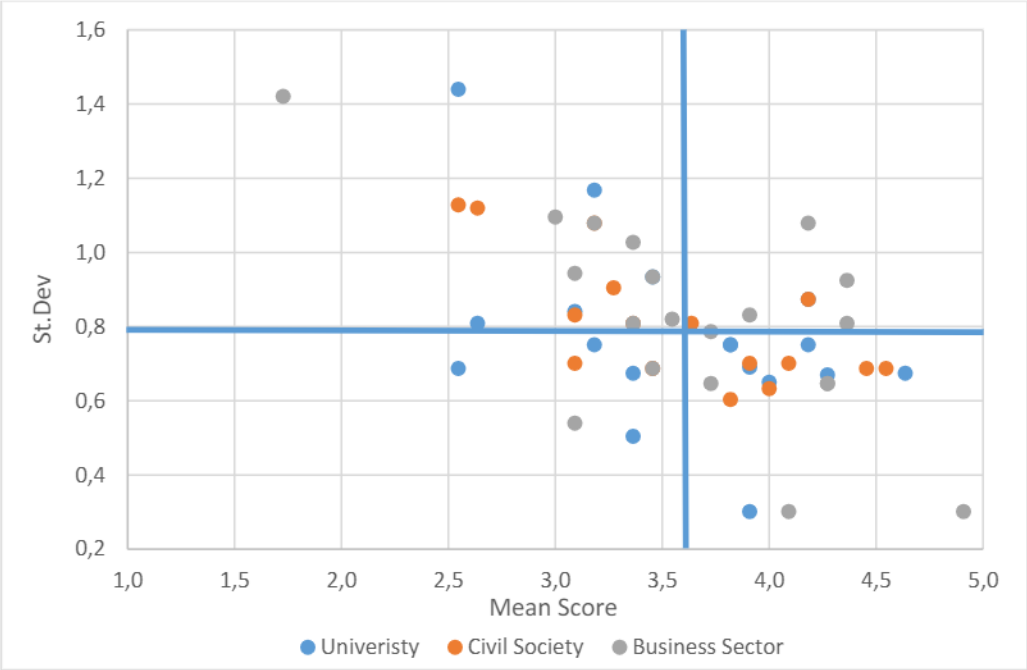
Figure 3 The mean scores of the Role sub-dimension items across the three stakeholders' groups



Source: Authors' elaboration

By considering the mean and the standard deviation of stakeholders' scores in all items of this sub-dimension, a basic typology of stakeholders could be developed (see Figure 4). The mean scores of both dimensions are used in order to build four quartiles, and all observations are allocated to them. In the bottom right quartile, the stakeholders that on average place high scores on all different roles of the university and their responses present relatively low variations are situated. These stakeholders could be said that see a multidimensional and strong regional role for the university. The majority of stakeholders in this group come from the university and the civil society. In the bottom left quartile, the stakeholders with the lowest confidence on the multidimensionality of the UTH's role are allocated. The stakeholders here assign rather low scores and thus perceive university's role as less important than the former group. The group is dominated by university's stakeholders, which shows that doubts regarding the contribution of universities' to their regions arise even among the members of the academia. The upper left quartile includes all stakeholders with low scores on the items but with more variability in their response patterns. Thus, in this category belong stakeholders that may put a premium on particular dimensions of university's role, although still, their overall perceived importance remains low. This category is dominated by stakeholders of the business sector. Finally, in the upper right quartile, one finds the stakeholders with high scores and high variability in their responses. Here lie all stakeholders who recognize a vital overall role for the university. The difference with the first category (bottom right quadrant) is that stakeholders are more likely to prioritize some roles over others in this category. This category is the least populated, and the representatives of the business sector dominate it.

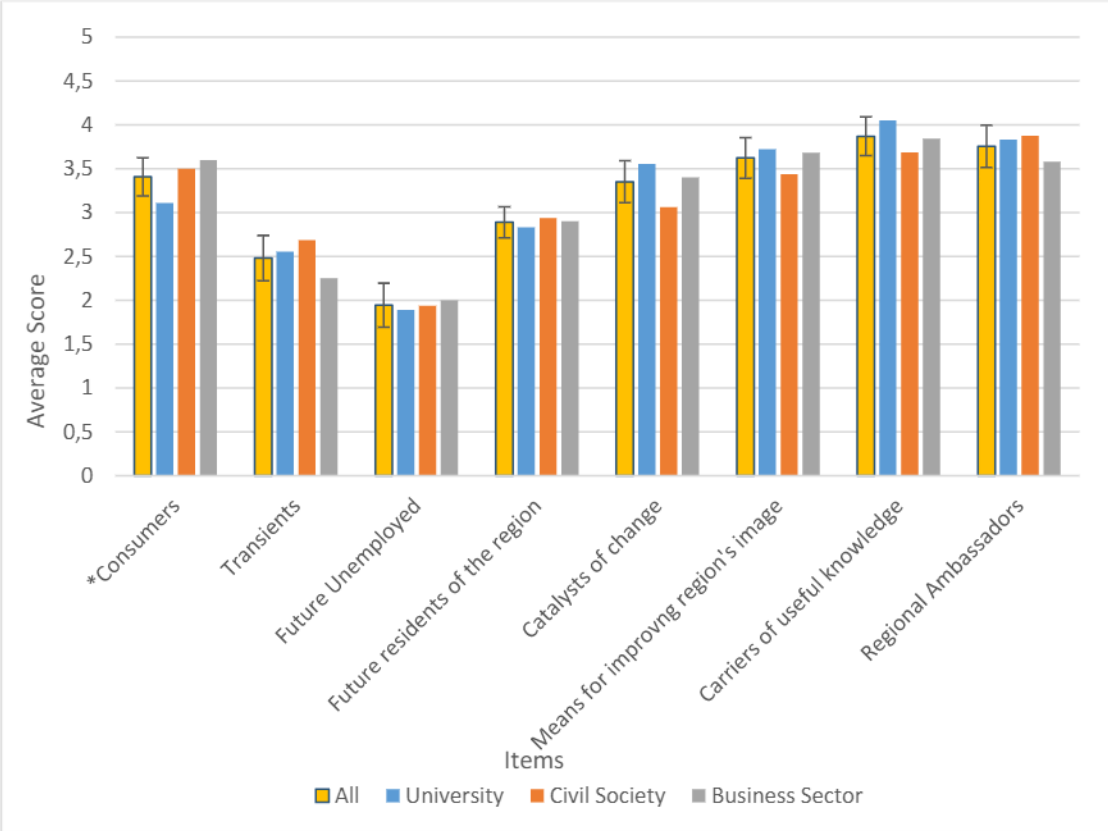
Figure 4 The stakeholders' scores matrix for the role of UTH



Source: Authors' elaboration

The perceptions of the stakeholders regarding the role of students are extracted by the Question "Please provide the level of your agreement with the following items regarding the role of students in the Region of Thessaly". The stakeholders have a positive and optimistic stance against students, as they tend to assign higher scores to items that describe students as carriers of useful knowledge, regional ambassadors and means for improving the regional image (see Figure 5). There is also a high score for the consumers' role, which reflects a more materialistic stance against students. More neutral and pessimistic views of students, such as transients and future unemployed, acquire lower mean scores. It could be said that, although stakeholders assign a constructive role in students for the promotion of the region, still there is a lot of room for the further engagement of students and their recognition as essential means for development.

Figure 5 The mean scores of the Students' role sub-dimension items



* Statistical Significance at the (<.1) level.

Source: Authors' elaboration

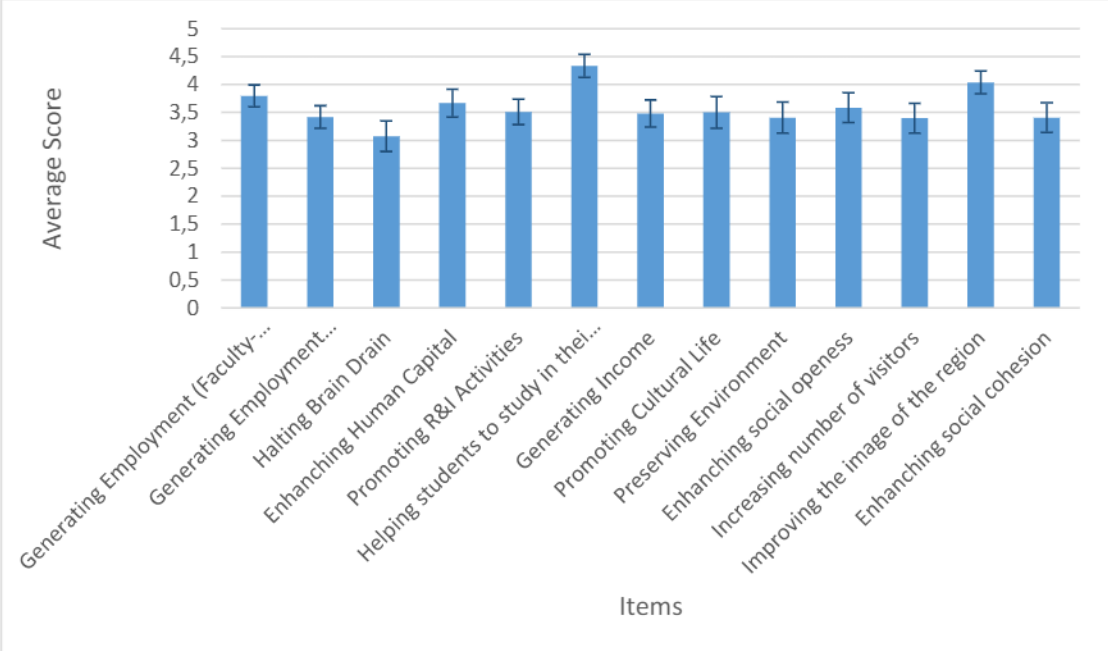
As for the scores among the three groups, in general, stakeholders perceive the role of students almost equally. The only item for which a statistically significant (<.1 level) difference was found is this of "Consumers". It is evident that the business sector places a higher score on this item especially when compared to the university stakeholders. As for the other items, stakeholders of the university and the business sector have placed the highest means score at the item of "Carriers of useful knowledge", while the stakeholders of the civil society consider the role of students as regional ambassadors as the most important one.

b. Contribution Dimension

The scores for the first sub-dimension of the Contribution dimension are extracted by asking respondents the following question "UTH contributes to the region by:". The greatest contribution is by far the ability of students to study in

their homeplace (see Figure 6). This finding has several policy implications as the university's existence in a region promotes the enrollment of people to tertiary education because in many cases, residents of the region would not afford to move to other places to study. The second most important contribution is the ability of the university to improve the image of the region. Therefore, stakeholders recognize the university as a regional asset. The lowest perceived contribution is the ability of UTH to halt brain-drain. This finding is very impressive and demonstrates perfectly a gap in the fulfillment of university's role. According to that and by considering the stakeholders' views, universities are essential for educating the youth of a region but lag behind in their ability to make their alumni find a job in the same region. Therefore, the human capital is enriched in the region but is lost after a point in time due to the limited offer of employment positions. This could be regarded as an investment loss.

Figure 6 The mean scores of the Main Contribution sub-dimension items



Source: Authors' elaboration

As for the differences, these were found statistically significant for the items of "Generating employment through administrative jobs" (<.01 level), "Halting brain drain" (<.1 level) and "Enhancing social openness" (<.1 level). UTH representatives, consider the employed administrative staff as a real

contribution of the university to the region, assigning the same importance with the generation of teaching and research staff, but the other two groups don't put any emphasis on that (see Figure 7). The same stands for the ability of the university to enhance social openness. In addition, for the ability of the university to halt brain drain, the scores of the business group are much lower than these of the others. This result may be seen as a low confidence of the business sector to the ability of UTH to halt brain drain. Still, it may also show a high level of awareness regarding the fact that the university alone can't do much to prevent the loss of human capital. Therefore, this should be a common pursuit of all regional actors.

Figure 7 The mean scores of the Main Contribution sub-dimension items across the three stakeholders' groups

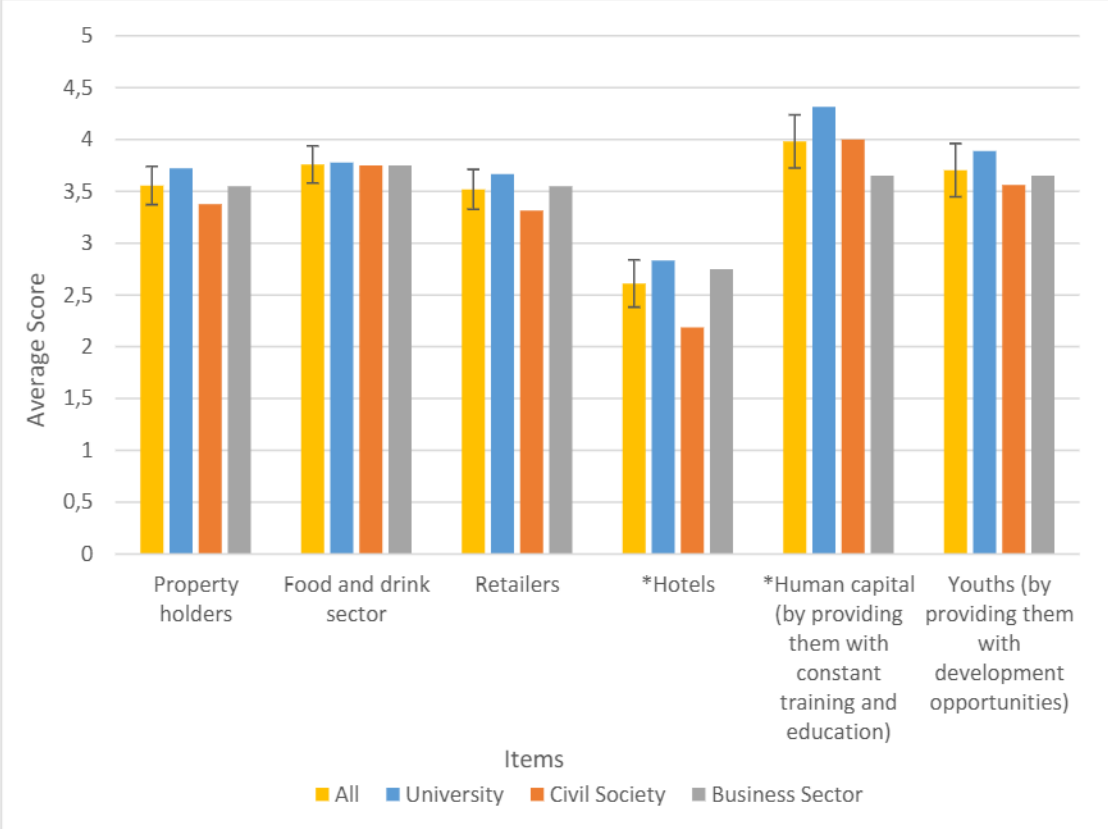
***Statistical Significance at the (<.01) level, * Statistical Significance at the (<.1) level

Source: Authors' elaboration

As for the Main Beneficiaries sub-dimension, the relevant question to the stakeholders was formed as "The operation of UTH benefits the:". Stakeholders believe that the human capital of the region, that is, people that receive education and training by UTH, is the most benefited group of the region (see Figure 8). The second most acknowledged group of beneficiaries is the food

and dining sector entrepreneurs, followed by the youths. What's worth noting is that stakeholders recognize that a pure economic group receives more benefits than the region's youths. The least benefited group is this of hotel owners. This contradicts the results of the Main contribution sub-dimension, where stakeholders stated their belief that the university improves the image of the region. Therefore, despite that the UTH function may not directly benefit the hotel sector, indirectly, and in the long term, this is also benefited by the presence of UTH. As for the differences, these were only found for the "Hotels" and "Human Capital" items, and only at the (.1) significance level. As it seems, the civil society sees an even lower benefit of UTH for the hotel sector than the mean value of all groups, and as for the human capital, there is a considerable gap between the views of university stakeholders and the business sector, with the latter giving a lower score to this group of beneficiaries.

Figure 8 The mean scores of the Main Beneficiaries sub-dimension items



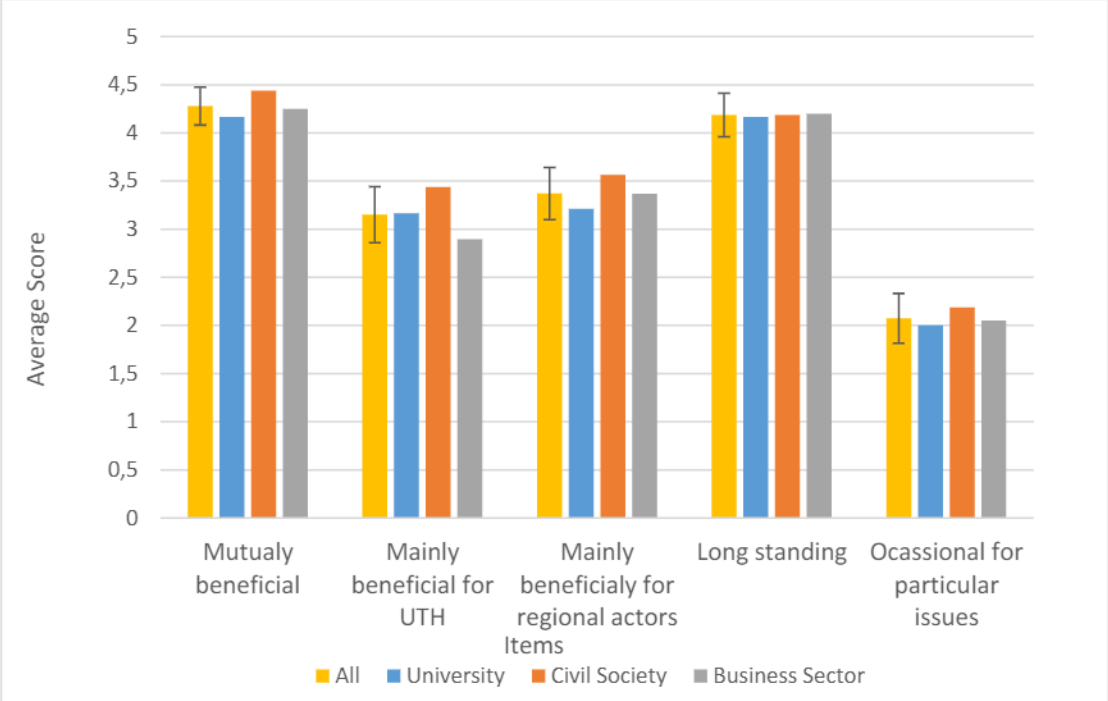
* Statistical Significance at the (<.1) level

Source: Authors' elaboration

c. Cooperation Dimension

The first sub-dimension of the Cooperation dimension is quantified through the question "The cooperation of UTH with the regional actors could be considered as:". Stakeholders regard the cooperation as mutually beneficial and long-standing, as these two items acquired the highest scores (see Figure 9). For the two options, which have an indication about any side that benefits most of the UTH's presence, there were no remarkable differences, although the one that indicates that the cooperation is mostly beneficial for the regional actors was assigned with a slightly higher score. Finally, there are not any substantial differences among the views of stakeholders.

Figure 9 The mean scores of the Benefits of Cooperation sub-dimension items

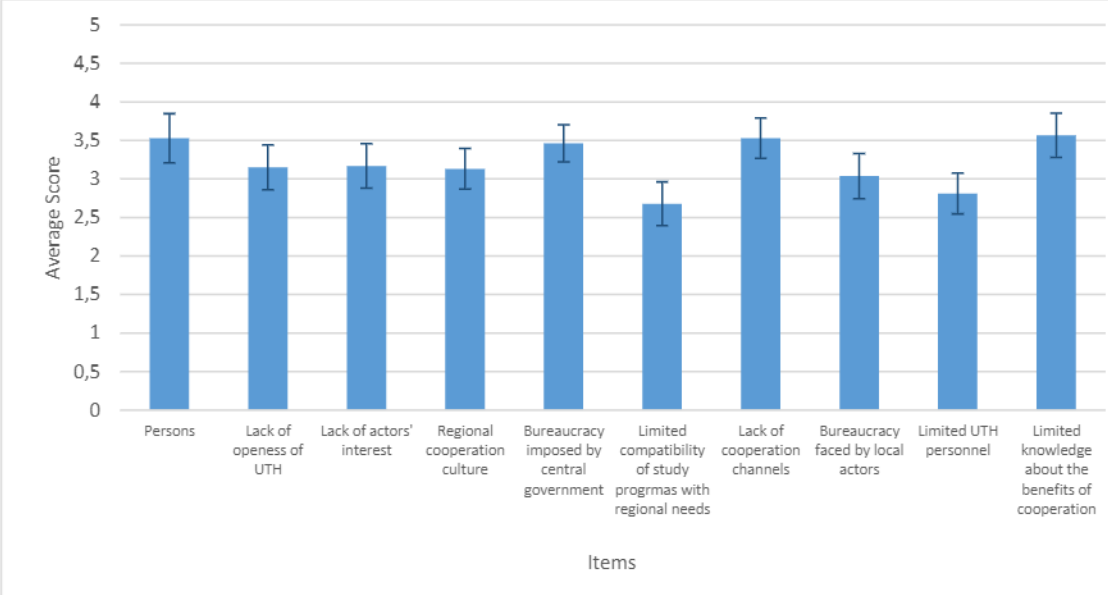


Source: Authors' elaboration

The second sub-dimension is quantified through the question, "The barriers for a stronger cooperation between UTH and regional actors is due to:" (see Figure 10). Stakeholders recognize the limited knowledge of the potential benefits as the most important barrier, followed by the lack of cooperation channels and the persons in charge for enhancing cooperation. The first two factors are more structural as they show a lack of cooperation tradition, and the latter is more

context-dependent, as it refers to the persons that should foster cooperation at any point in time. The least acknowledged barrier is a possible lack of compatibility between UTH's study programs and regional needs, which shows that the university is well engaged with the region, at least in terms of studies' focus.

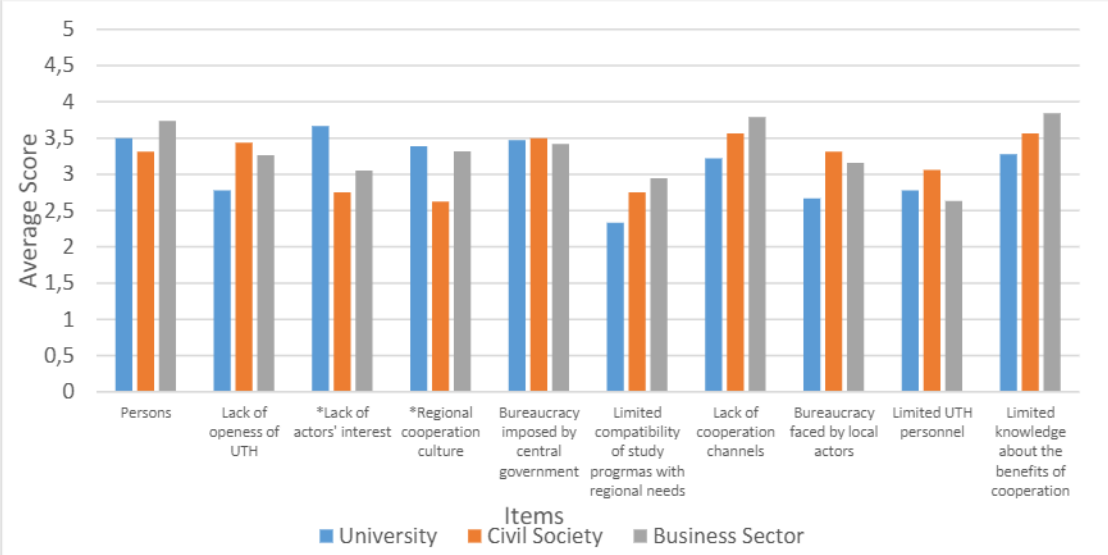
Figure 10 The mean scores of the Barriers sub-dimension items



Source: Authors' elaboration

The main differences among stakeholders' views are found for the items "Lack of Stakeholders Interest" and "Regional Cooperation Culture", both at the (<.1) significance level (see Figure 11). In both items, the scores assigned by the civil society groups are extremely low. For the university stakeholders, the lack of interest is the largest barrier, while for the other two groups, the greatest barriers are those also found most significant for all stakeholders.

Figure 11 The mean scores of the Barriers sub-dimension items across the three stakeholders' groups



* Statistical Significance at the (<.1) level

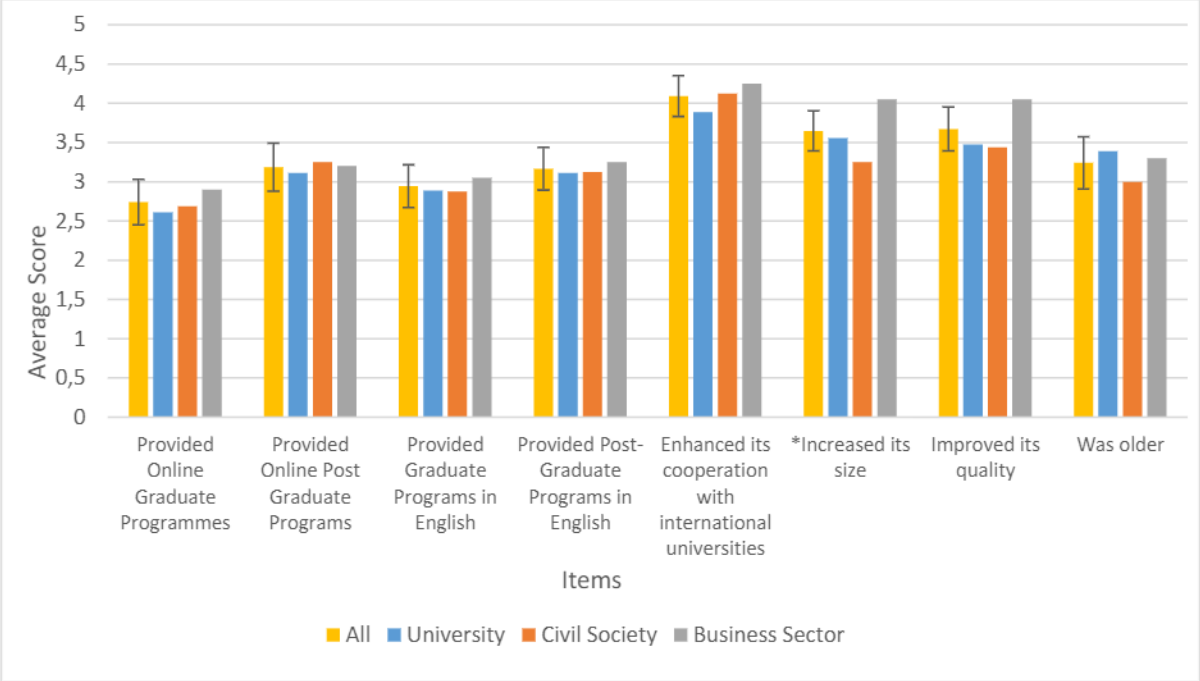
Source: Authors' elaboration

d. Improvements Dimension

The first sub-dimension of the Improvements dimension was measured by providing stakeholders with the question "The university could have a greater impact in the region if it:" (see Figure 12). The most acknowledged item is this of the enhancement of university's cooperation with other international institutions. Therefore, stakeholders think that the internationalization of UTH will bring many benefits to the region. The expansion of the university and any quality improvements follow with almost equal scores. In addition, stakeholders think that the university will be able to engage further with the region when it becomes more mature as the fourth most important item is related to the age of the university. Finally, the provision of online and English courses acquires lower mean scores than the former items. What's more, any changes in programs, either in the means or the language of teaching, seem to be more important for postgraduate studies than basic teaching programs. Therefore, stakeholders prioritize the changes in the postgraduate level. There are no striking differences in the response patterns of the different groups. One statistically significant difference (<.1 level) was found for the item of size, as the business sector seems to think this improvement as essential, in contrast

with the civil society, which assigned a rather low level of importance on it. In general, the business sector seems to be the one with the greatest desire for change, as the group's mean scores surpass the mean scores of the whole sample in all the items.

Figure 12 The mean scores of the University Improvements sub-dimension items



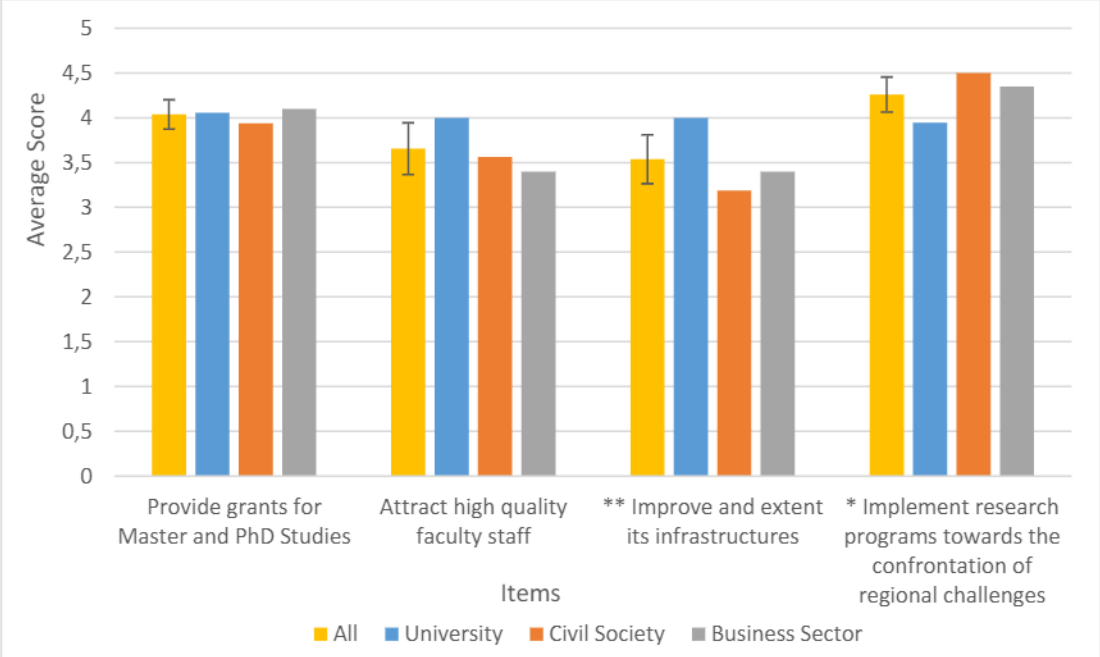
* Statistical Significance at the (<.1) level

Source: Authors' elaboration

The second sub-dimension was provided to the respondents for evaluation with the following question "If UTH received more funding, it should use it for:" (see Figure 13). The use of funds mostly appreciated by the stakeholders is the implementation of research programs for the provision of solutions to regional challenges. Once again, stakeholders prioritize the confrontation of regional challenges as the key trajectory of the university development. The improvement of the infrastructures seems to be least preferred by the stakeholders. Nevertheless, there are statistically significant differences among the views of stakeholders in these items. University's stakeholders seem to prioritize the upgrading of the infrastructures while the other two groups assigned to this item lower scores. On the other hand, for the funding of research programs, the scores of the two groups are higher than those of UTH.

In general, the UTH representatives place equal importance on all items of improvement. The differences mainly occur from the fluctuations in the responses of the other two groups.

Figure 13 The mean scores of the Funding Priorities sub-dimension items



**Statistical Significance at the (<.05) level, * Statistical Significance at the (<.1) level

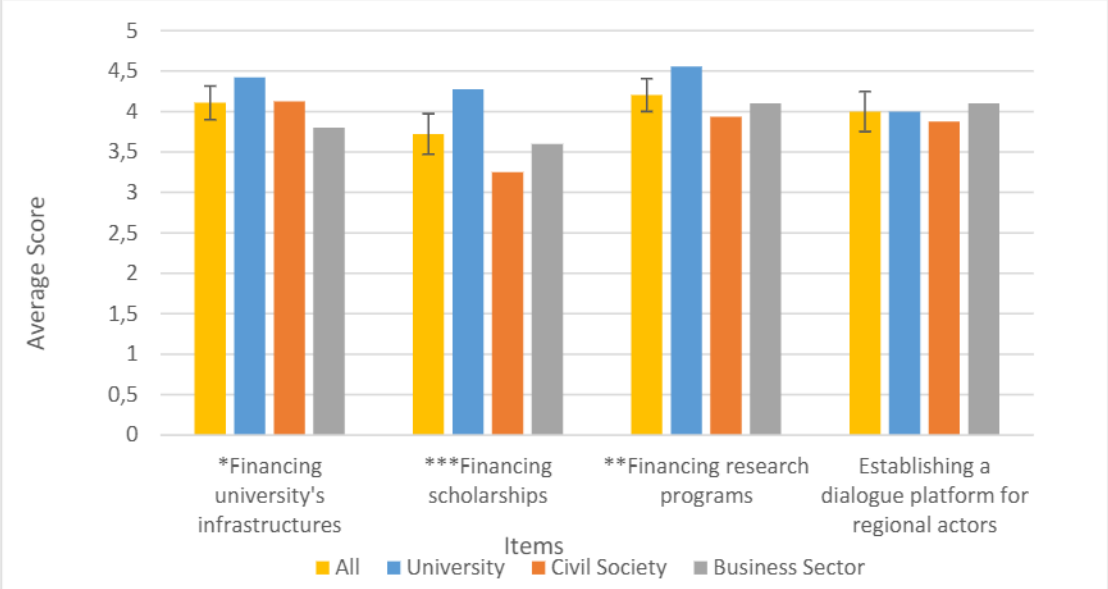
Source: Authors' elaboration

Finally, the identification of mediums by which the regional actors could improve the operation and engagement of the university was realized by providing the following question "Regional Authorities/Local Authorities/Businesses can help UTH to get improved by:". For each of the three subjects, different options for providing support to the university were provided to the respondents.

For the Regional Authority, the financing of research programs is the most appreciated means of support to UTH, followed by the support for improving the university's infrastructures (see Figure 14). The item with the lowest score is this of "Financing scholarships". Therefore, the stakeholders here prioritize research over studies when it comes to the role of the regional authority. It's noteworthy that there are significant differences in all items but the one foreseeing a role of dialogue promoter for the regional authority. More precisely, although the financing of scholarships acquires a low score when all stakeholders are considered, there is a significant difference among the views

of university representatives and those of the other groups. Thus, university members put a large weight on the funding of scholarships. In the item of "Financing of Research Programs," there is a gap between the scores of university members and the civil society, with the latter placing rather low importance on this option. Finally, a similar gap is also observed in the item "Financing University's Infrastructures," although in this case the lowest score comes from the business sector.

Figure 14 The mean scores of the Contribution of Regional Authority sub-dimension items

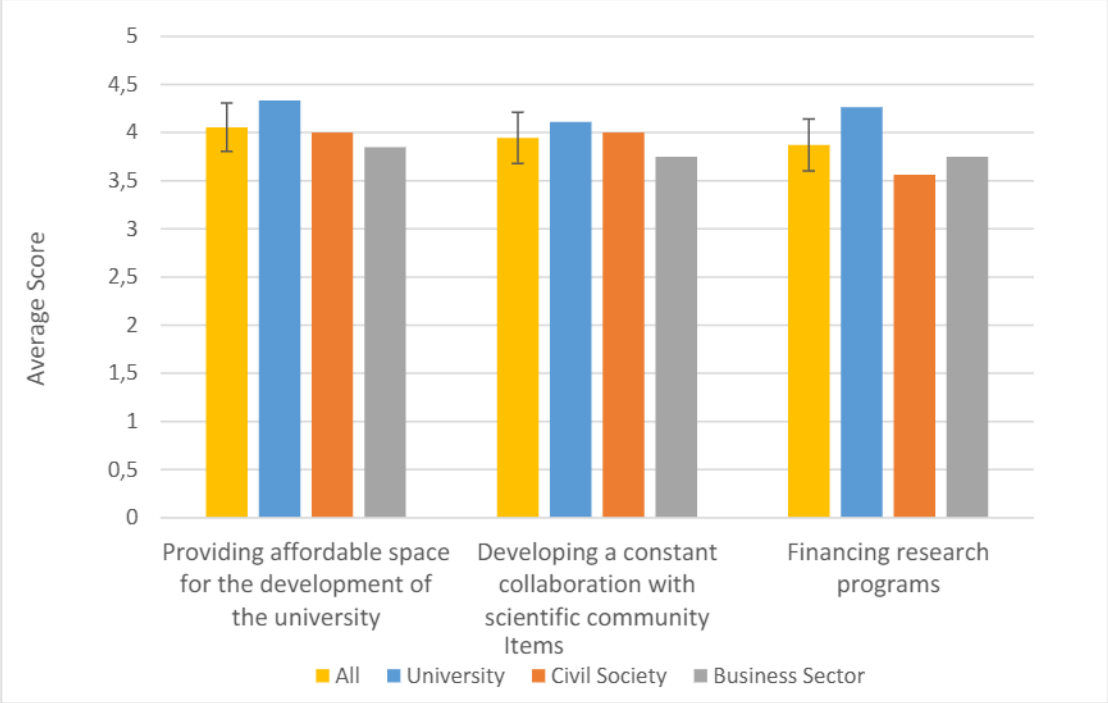


***Statistical Significance at the (<.01) level, **Statistical Significance at the (<.05) level, * Statistical Significance at the (<.1) level

Source: Authors' elaboration

As for the local authorities, the provision of affordable space for the development of the university acquires the higher importance, followed by the item which assigns local authorities a role of dialogue promoters and facilitators (see Figure 15). The least significant item is this of providing funds for research programs, which should be noted that it is also lower than the respective item of the regional authority's case. There are not any statistically significant differences among the scores of the three groups. Nevertheless, it should be stated that university's representatives assigned higher scores to all items than the other groups.

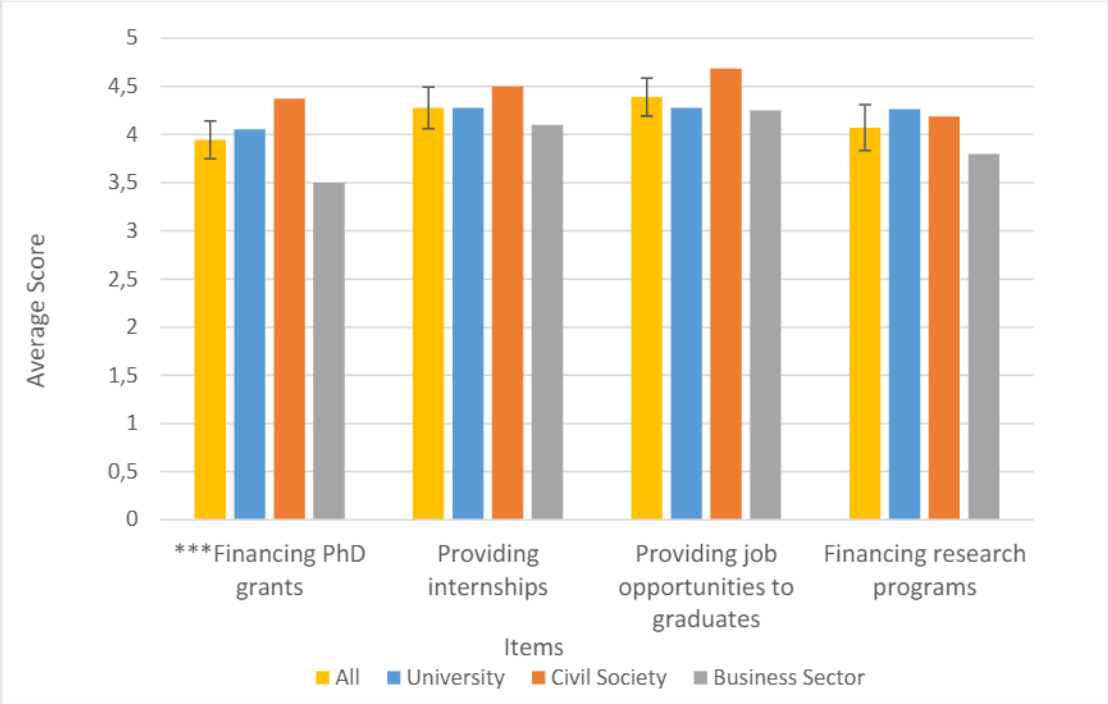
Figure 15 The mean scores of the Contribution of Local Authorities sub-dimension items



Source: Authors' elaboration

Regarding the business sector, stakeholders fully recognize its potential for providing employment to graduates, as the two items with the highest scores are the ability of the enterprises to hire graduates and provide them with internships (see Figure 16). In addition, when financialization of university's activities is at stake, the stakeholders seem to prefer any private funds to be driven to research programs rather than to scholarships, although the difference of the scores of the two items is not significant (according to the overlaps of the mean confidence intervals). The only statistically significant difference was found in the "Financing Ph.D. grants" item, as this item was found to be very important by the civil society, while at the same time, it acquired the lowest score of the business sector.

Figure 16 The mean scores of the Contribution of Businesses sub-dimension items



* Statistical Significance at the (<.1) level

Source: Authors' elaboration

4. Conclusions

The paper provides a framework for evaluating the engagement of the universities with their regions, taking the University of Thessaly as a case-study. Instead of using quantitative data to measure the university's contribution based on already defined dimensions of its role, the paper follows an open stakeholders' analysis approach to let the dimensions arise from the survey data. The multidimensional approach managed to unify different dimensions of university's engagement that up to now were examined in a scattered way in the present literature and therefore can provide valuable and comprehensive information to academics, practitioners, and policymakers when designing the development strategies of universities and regions

The results highlight the need for a more open approach in defining university's role, as the scores of many items present larger differences with respect to other items that could be grouped together under a particular role than with other items that are usually fit to other roles and purposes. For instance, in the Role sub-dimension, the item of the provision of "Reports and support to

institutions" acquires similar score to the item of environmental preservation than with other economic functions of the university such as the establishment of spin-offs and the application for patents. Therefore, the dimensions of the general roles recognized by the literature may fail to match when case-studies on particular regions are considered. Moreover, the analysis revealed a lot of variation even among the stakeholders of the same group. The stakeholders' scores matrix for the role of UTH showed that the different quadrants of scores and variations included stakeholders from different groups. Therefore, a consensus about the university's future development should be achieved not only by looking at the institutional level but also at the persons who operate under any institutional umbrella.

For the present case study, the results show that teaching and research are considered the most basic parts of university's role, and its “third mission” should be driven towards the confrontation of wider rather than explicit economic challenges. On this, the role of students was also acknowledged as being important as the stakeholders recognize students as elements of change and crucial actors for the development of the region. The importance that stakeholders place on students is also testified by the results of the first subdimension of the Contribution dimension, where the ability of the university to keep students in their homeplace during their college years it was by far acknowledged as the most important contribution of UTH to the society. Therefore, the regional community strongly believes in the potential of students to bring a change to the region and recognizes that the university has a dominant role in making this happen.

Besides, by looking at the differences of responses, no great variations arise among the scores assigned by the different stakeholders to the various dimensions. It is very encouraging for the future engagement of the university that all regional actors have almost similar perceptions about the role and the contributions of the university. This common baseline is also testified by the fact that all stakeholders consider the cooperation between the university and the regional actors as long-standing and mutually beneficial rather than as benefiting only one side against the other. Therefore, the study highlights an adequate level of consensus which creates a fertile ground for dialogue and

further agreements on partial issues where the analysis revealed some variability of opinions. These issues mainly regarded issues such as how regional actors could support the further development of the university and the barriers to cooperation. It is important that this dialogue be established on formal channels, whose lack was indicated as a major barrier by all stakeholders. Considering that the further cooperation of university with the region is also affected by the persons, it is very critical for these channels to exist regardless the persons in charge as they will foster a culture and create a cooperation tradition that would be then very difficult to be undermined by any persons or other circumstances.

Overall, the study highlights the need for analytical and comprehensive analyses for the engagement of the universities to be fully realized. This target is essential as it can help universities better position themselves in the region they operate in and the regional actors to provide the universities with possible ideas for improvement and different roads for development to be opened. The framework of the study could also be conducive for other regions, as it provides them with a solid basis for evaluating the role of the universities. Nevertheless, the framework remains open to any amendments which could better describe the conditions of the regions that future studies are to be implemented. What arises as a future research target is the crosstabulation of the stakeholders' views with actual data on every dimension of the framework. Therefore, a system of indicators could comprehend the present perceptions framework to develop a holistic monitoring system.

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