A Study on the Key Soft Skills for Successful Participation of Students in Multinational Engineering Education*

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Soft-skills have proved to be a necessary complement to technical skills in today's multinational workplaces. As universities are facing the challenge of promoting internationalization and mobility in students and teachers, they have to decide how to help their students in developing these skills as well as increase their awareness on the cultural differences in multinational settings. After a long trajectory of participation in multinational educational experiences, the authors launched a survey to check if their previous findings on the preferred soft skills by educational experts and managers still remain valid after 5 years. Another goal of the study was the analysis of the link between preference for specific soft skills and cultural background in each country as characterized by Hofstede's indicators. The data collected from 123 experts from 45 different countries have confirmed the existence of a stable core set of preferred soft skills at global level and also for European countries. Results have also shown links between specific cultural indicators and preference for some soft skills.

Keywords: soft skills; student mobility; international education; Hofstede; multinational experiences

1. Introduction

Globalization is deeply impacting the way we work in businesses as well as in profession and therefore in the skills students need to acquire to show a good performance in multinational teams. Soft skills have burst into the set of requirements for jobs which employers now demand from candidates [1, 2]. Several studies have highlighted the need of a good balance between technical competences and non-technical skills when recruiting professionals in the area of Information Technology (IT) [3–6]. The non-technical skills also known as soft skills will largely determine the success of these future professionals. So, it is also necessary that universities help students to develop these capabilities. But, which of these non-technical skills are the most important to successfully work in a multinational and multi-cultural environment? Existing literature does not provide a reasonable answer for this question due to the lack of studies supported by empirical evidences. It is frequent to find studies where the multinational experiences are an opportunity for developing some soft skills (e.g., [7, 8]) but it is very difficult to locate specific studies which analyze which are the soft skills required for a successful academic or professional performance in multinational projects or settings: some works in the area relate soft skills demanded by employers with the possibility of developing them through international experiences (e.g., [9]). This absence of information might clearly hinder the promotion of effective international mobility in IT and other engineering branches.

Obviously, the European Higher Education Area is a privileged playground for studying students' mobility because fortunately many different options for international experiences were implemented many years ago in the European Union. These are currently helping students to experience multinational situations, especially in mobility across European countries. Erasmus programme created by the European Commission is a cooperation and mobility program in higher education aimed at enhancing students and teachers' mobility in Europe while promoting intercultural understanding through co-operation of the different countries. By far, it is the most known option by students, teachers and even society in general in Europe. The Erasmus programme offers university students the possibility to travel to another European country to study and do work placements (traineeships). A key factor is that these periods abroad contribute to qualifications at home through the recognition of credits in the corresponding degree. Of course, it also helps students get to know different cultures and languages as well as acquire live experience for their professional and personal development.

Erasmus concentrates really big numbers because millions of students have lived by the end of 2014 what one of these Erasmus periods (from 3 to 12 months) represents. So, it is a reality that funding from EU Erasmus programme has helped many

students to study abroad during a semester or a year. Statistics [10] show impressive figures: 212,208 students in academic year 2013–14 (last available statistics) studying abroad plus 60,289 doing traineeships (placements) on other country (they were 144,037 in 2004–05) totaling more than 3,3 million during the whole history of Erasmus: 22,79% of the them in engineering, mathematics and computing fields. Now the Erasmus programme has been upgraded to Erasmus+: the new Erasmus+ is an aggregation of former programmes related to internationalization of educations like Leonardo, Erasmus, etc. This is only a change pursuing a simplified centralized administration. Most recent official statistics for 2014 mobility figures of Erasmus+ [11] register a total of 515,178 including modalities for youth and VET students and staff.

Given these remarkable numbers determining the role of soft skills in the success of mobility programs deserves the upmost attention to optimize results. Although our work focuses on the analysis of mobility involving any country in the world, we will also extract specific conclusions for the case of Europe. Moreover, another source of motivation for this work has been our direct observation during different international European experiences with students and teachers in the area of Information Technology and Engineering carried out from 2005 to the present. These experiences included several EU funded programs: two Erasmus IP (Intensive Programs) with structure of professional workshops with 6 editions in total and more than 300 people involved, an annual international seminar from 2006 with more than 200 participants, 7 European research projects and long experience in exchange programs of students and teachers. Some partial results on these experiences have been published in [12].

Our observations suggested us that people from each country allocates a different weight to each of these non-technical skills when analyzing and evaluating behavior of students and young professionals. For example, teachers from some countries consider strict punctuality as an essential behavior while those from other countries consider it as something desirable but less important than other skills as teamwork and orientations to results. Starting from this fact, we wondered whether it is possible to determine a set of soft skills commonly recognized in most countries as key factors for success, as well as determining which could be the difference in perceptions in different countries: this would enable to train students to be aware of that, and to be able to adapt their behavior and minds to those situations minimizing cultural influences. In the end, as a second step this could enable specific training for students to successfully perform in any

multinational experience regardless of the country of destination or the origin of the members of the working group. Knowing this minimum soft-skills would be an important starting point for universities, who could help their students (and teachers) in developing them prior to any multicultural experience, thus increasing satisfaction and promoting their participation in international experiences.

2. Antecedents

The basis we adopted to test this hypothesis is a study developed by using the Delphi technique with 70 experts in recruitment of leading companies from different sectors in Spain [13]: the experts started from a large list of skills detected in job ads which was refined to allow a final selection of the most important ones for employability (not specifically thinking in international settings). The result of the study was a set of the 10 most important soft-skills for the success of graduate professionals regardless of their specific degree or professional area. We preferred to work with this set due to two reasons. One was that in early years like 2005 there were not so many other reference sets of skills and in our present study we wanted to check consistency of findings regarding our previous pilot study. The other motivation was checking how a set of skills not explicitly created by thinking in international situations behaves in our study. We preferred not adding specific skills clearly connected to international activity to avoid a bias in responses (although allowing free text suggestions in our survey design to reflect more skills than the ones in the initial set). Of course, there are other recommended set of soft skills (see e.g., [1, 14]) but the differences are not too relevant as all they share some skills choices with the same name and concept (i.e. teamwork, flexibility, initiative, communication) and many others with different names but referring to the same idea. Even the comparison with the well-known references of ABET [15] and CDIO [16] does not lead to relevant deficiencies: ABET only has clear reference to communication, multidisciplinary team, ethics, impact of solutions in context, etc. while CDIO adds other skills, some included in our set and a few not.

Before further exploring the idea, we tried to check if our observations during international experiences were consistent to the opinion of actors involved in them. A first pilot study in 2010 with a small group of participants allowed us to check their opinion and compare the results from 23 students from 6 different European countries who participated in 2 international and multicultural experiences held in Sweden (2006) and Spain (2008). We also check the opinion of a small set of 5 teachers. Both groups were asked to rank the

Table 1. Results from pilot study with students and teachers

Skill	Students' rank	Teachers' rank
Responsibility	4	2
Self-confidence	7	6
Awareness of ethics	4	8
Communication skills as receiver	1	3
Communication skills as sender	2	4
Flexibility	5	4
Teamwork	3	1
Initiative	6	5
Planning ability	5	7
Innovation/creativity	8	9

importance of skills to be successful in those multi-cultural experiences. The results (rank 1 means the most relevant skill) showed that perception from students and from teachers is not exactly the same as it is shown in Table 1 although specific points are similar.

An additional point was that 42% of students did not think they have good level of development of their soft skills when they evaluate themselves their starting situation before the experiences. Moreover, they thought in 94.3% of the cases (pairs student-skill) that the corresponding skills on the mentioned reference set were essential for the international experiences. Students are aware of the importance of soft skills and the gaps that may hinder their participation in international experiences.

After these results, we concentrated in teachers and experts as they are in the end very relevant players in evaluating students and young professionals. We launch another pilot study carried out in 2011 using questionnaires to determine a first ranking of skills collecting opinion from 66 experts from 21 different European countries (including Switzerland and Turkey) and different branches of engineering (with a majority from the area of IT, Information Technology): Civil Engineering, Electronics, Informatics/Computing engineering (IT), Telecommunication engineering and other areas. Experts were selected because they have some experience (average international experience was 6.37 years) in international activity such as:

- Coordination of international relations for exchange programs (students, teachers, etc.): 27.8% of cases.
- Coordination of researchers or teachers from at least two countries in projects with significant in site joint activities: 16.5% of respondents.
- Teaching semester/year degree/regular courses for groups of students of, at least, two nationalities: 21.85% of respondents
- Teaching intensive courses/seminars to groups of students of, at least, two nationalities: 16.5%.
- Working in professional industry/company pro-

jects in multinational environments with direct contact with people from at least two countries: 17.2% of cases.

They were invited to respond to a questionnaire inspired in the results of our work and previous experience: they had to select the 5 most relevant soft skills for success in multinational settings. The analysis of results of this study confirmed evident differences depending on the country origin of the expert, but also show the existence of set of common most important qualities as shown in Table 2. It is also clear that differences in the selection for students and for young professionals are not important although there are a few cases with a wider difference: namely teamwork and self-confidence (more relevant for students) while communications as information sender, initiative and planning capacity (more important for professionals).

These results also helped us to determine if respondents feel that important skills were missing in the list as we requested suggestions for adding skills. Only 8 people suggested additional skills like leadership and networking capacity as well as other options which could not be considered soft skills such as motivation or specific foreign languages.

The analysis of results also suggested a first relationship between selected skills and country of the respondent. However, as this first study was not oriented to check this possible relationship in a formal and scientific way, the data structure only recommended the determination of the preferred skills. After some years, during 2016 we have exploited the opportunity to launch a new survey to check several hypotheses with a wider sample and a better survey design given by our set of international contacts. We have continued asking the experts as main source for the importance of each soft skill as they are in the end those who decide on the performance of students or young professionals when involved in international experience.

The sample of respondents was not balanced in branches of engineering as the majority of them (48%) belong to the IT/Computing field while the

Table 2. Skills for students and for young professionals in multinational settings from pilot study with experts

Soft-skills	Students	Professionals
Teamwork	74.24%	65.15%
Responsibility	69.70%	66.67%
Communication skills; Sender	53.03%	60.61%
Communication skills; Receiver	62.12%	66.67%
Flexibility	59.09%	60.61%
Initiative	36.36%	48.42%
Self-confidence	42.42%	25.76%
Planning ability	28.79%	34.85%
Awareness of ethics	27.27%	31.82%
Innovation/creativity	36.36%	36.36%

rest was distributed among electronics, civil engineering and a set of other branches with small figures of respondents. This was the reason for not trying to analyze the differences among branches although we detected small differences in our previous studies of demanded skills in the national labor market [17].

The aim of this paper is to show the findings of a quantitative study with a larger sample to check and extrapolate the results from this first study. As a consequence, we have designed a new questionnaire based on the previous experiences with a first expanded part devoted to demographics, a main section with multiple-item questions inspired in our previous work using five-point Likert-type scale and a final free space for suggestions and comments. The goal is to collect information from a large enough sample to reach relevant conclusions. The target group will follow the same profile: experts with relevant teaching, academic exchange management or professional projects with multinational groups (from at least two different nationalities and a significant number of persons). This larger sample will allow detecting possible differences in results in the different knowledge areas, experience of the expert, country, etc. The confirmation of a common set of most important soft-skills for most countries will help in guiding the training of students for an effective international mobility.

There is an additional goal: the possibility of analyzing the relationship between country culture and the preference of experts regarding soft skills. The basis for this analysis is the 5 culture dimensions proposed by Hofstede [18]. Although there is not a direct relationship between Hofstede's indicators and soft skills, some studies suggest some specific links (e.g., [19]): for example, the inverse link between value of dimension "Individualism Versus Collectivism" (IDV: degree to which people in a society are integrated into groups) to performance in teamwork. In this work we want to analyze if the consideration of specific soft skills for their ideal profile for students in mobility or professional experiences is influenced by cultural background of each expert as expressed in Hofstede indicators. Detecting these relationships will allow a better knowledge on what behavior one can expect in teammates as well as the possible bias in evaluation from managers and teachers in each country. In fact, we detected through questionnaires and direct feedback in the multinational experiences described above that teachers tend to be less flexible and with more prejudices than their students towards students from other countries. Understanding the expectations of teachers and managers from other countries regarding soft skills is a key factor for increasing participation in mobility: it is also rele-

vant for helping students to be more effective and get more satisfied of it. We confirmed this fact by using questionnaires to evaluate different aspects of activities after the intensive multinational experiences described above. We found out that participating students were more inclined (87%) to participate in further longer experiences abroad as students or as professionals. This effect was higher in those who increased their understanding of other countries' people and at the same time expressed a higher level of satisfaction with the experience.

3. Research methodology

The aim of this study is to know the most important soft skills according to experts as well as if there are any influence in the importance given to each soft skill depending on the nationality of the expert. Data collected in the survey will be combined with the Hofstede dimensions to check of country's culture. Based on these objectives, the research questions considered are the following ones:

RQ1: Could it be determined a common set of soft skills considered as key factors for success by experts in charge of multinational groups of students or young professionals?

RQ2: Given the relevance of the European exchange programs, is there a different set of recommended soft skills for European countries?

RQ3: Is there any relation among specific Hofstede dimensions determined by the country origin and the soft skills chosen as key elements for success in multicultural settings?

4. Data collection

The survey design obviously addresses the above research questions. The list of soft skills is the same used in our previous studies to enable comparative analysis. We have used a Likert scale with answer options ranged from 1 (essential) to 5 (not needed) and also added an open question to allow suggestions of other important soft skills. Moreover, we included another two questions about the importance of preparing students to improve their development of the most important soft skills before participating in multinational experiences. The questionnaire has been developed online using Lime survey and administered to coordinators of students' exchange programs, coordinators of researchers and teachers in international projects, teachers of courses with students of at least two nationalities, and professionals working in projects in multinational environments.

Survey process captured a total of 123 answers, so the margin of error is 8.8% with a confidence interval of 95%. The demographic analysis of data

Table 3. Experience in dealing with multinational environments

	Yes	Number of years (mean)
Coordinators of students' exchange programs	35.8%	4.16
Coordinators of researchers/teachers in multinational projects	43.1%	6.68
Teaching semester/year degree/regular courses for international groups of students	51.2%	7.49
Teaching intensive courses/seminars to groups of students of, at least, two nationalities	37.4%	6.50
Working in professional industry/company projects in multinational environments	53.7%	6.79

shows a well-balanced sample regarding nationalities with a wide representation of a large number of different countries (45 countries), and unbalanced in gender (73.98% of male) as usual in the engineering field. The engineering discipline of respondents was Informatics/Computing engineering (IT) (78%), Telecommunications engineering (5.7%), Civil Engineering (4.9%), Industrial engineering (4.9%), and Electronics Engineering (4.1%). Regarding the experience or profile of respondents, the sample is well balanced with good representation of both academy and industry, as shown in Table 3 (one respondent may have experience in several options).

Moreover, in order to answer RQ3, we have used data from Hofstede's dimensions for national culture (2015 edition) [20]. We used only the Hofstede's dimensions with some logical relation to the soft skills considered here: PDI (Power Data Index), IDV (Individualism versus Collectivism), MAS (Masculinity versus Femininity), UAI (Uncertainty Avoidance Index), and LTO (Long Term Orientation).

5. Data analysis

Factor analysis was carried out to scrutinise the internal structure of the instrument using IBM SPSS Statistics 21. The fact that the scale was confirmed in the pilot researching above mentioned validates the content. Nevertheless, we calculated Cronbach alpha coefficients as well as correlations item-total for variables related to soft skills of students and for professionals in order to confirm the content. Both of the scales show good values for correlations item-total and Cronbach's alpha are greater than the minimums established in 0.3 and 0.7 respectively [21]. Specifically, Cronbach alpha coefficients were 0.830 for students and 0.833 for professionals showing good values in both cases. Moreover, alpha coefficient does not improve after the removal of any of the items of the scale so this confirms the internal consistency of the scale, i.e. every item measures the same concept.

Once the questionnaire was validated, the research questions were tested.

RQ1: Could it be determined a common set of soft skills considered as key factors for success by experts in charge of multinational groups of students or young professionals?

The analysis of means, medians and modes, as well as frequencies, for students' scale gives a high importance to every soft skill except for initiative and innovation/creativity which have a medium importance (desirable skills). When looking in more detail at the histograms, we find out that respondents ranked planning ability as the second of least importance: 50.51% of respondents thought that planning ability is a skill desirable, optional or not needed. As we knew from our previous experiences the difficulty of finding out the most important skills in multinational settings, we added to the questionnaire a question to rank the five most important skills. This question allows us a double confirmation firstly by asking the individual importance of each skill and then by ranking the five most important (avoiding the syndrome of marking everything as essential). Results the first question in Table 4 are confirmed by the ones in the second one: the five most important soft skills for students according to experts are responsibility, communication skills as message sender, teamwork player, communication skills as message receiver, and self-confidence.

In the case of skills for professional work in multinationals scenarios we observed that all soft skills are considered essential or highly desirable when examining descriptive statistics. Innovation, initiative, flexibility and communication skills as message receiver were considered the least important, although data not allow us to conclude that they are clearly less important than others as the differences in statistics are not relevant. We analysed the responses on the five most important skills for professional work to confirm results as well as to get more information. The importance of each skill is confirmed in Table 4. The five most important soft skills for professionals to perform well in multinational environments are: responsibility, communication skills as message sender, teamwork player, awareness of ethical behaviour and planning ability. It is worth highlighting that the 3 most important soft skills for students and professionals are the same. However, understanding communications (listening) and self-confidence are ranked as the

Table 4. Ranking of soft skills according to percentage of experts who selected as one of the five most important

	Students	Professionals
Responsibility	63.5%	69.8%
Communication skills as message sender	53.1%	53.1%
Teamwork player	53.1%	47.9%
Communication as message receiver	42.7%	
Self confidence	41.7%	
Awareness of ethics		42.7%
Planning ability		39.6%
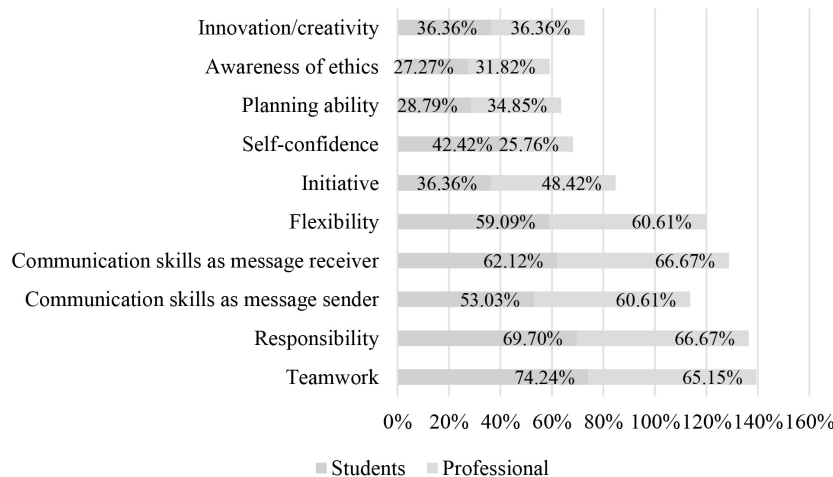
Fig. 1. Comparison among students and professional.

following with more importance for students, while awareness of ethical behaviour and planning ability are considered among the five more important for professional work. Fig. 1 shows the comparative analysis among the more important skills for professionals and students. We can observe that the greater percentage differences among the most important skills for students and professional are: self-confidence (16.16 point more important for students), and initiative (12 points more important for professionals).

Differences in experience of experts in multinational environments (coordinators, teachers or managers) were analysed using descriptive contingency tables and chi-square tests. Results showed no significant difference among respondents according to their experience as coordinators of students or teachers, teachers of multinational groups or work-

ing in industry/company multinational projects. We can conclude that all types of experts in terms of experience agreed with the selected skills: this makes even more valuable the set of skills detected as the most recommended as they are the preferred by all types of experts.

RQ2: Given the relevance of the European exchange programs, is there a different set of recommended soft skills for European countries?

In the sample 33 European countries were represented and 77 experts from those countries answered the survey. The exploratory statistical analysis resulted in the fact that every skill was marked as essential or highly desirable with few differences among them. The determination of the five most important skills for students in the case of Europe (shown in Table 5) reveal they are similar to

Table 5. Ranking of the 5 more important soft skills in Europe. Percentage of experts selecting a skill as one of the five more important

	Students	Professionals
Responsibility	63.64%	71.43%
Communication skills as message sender	53.25%	59.74%
Communication skills as message receiver	48.05%	
Teamwork player	46.75%	46.75%
Flexibility	45.45%	
Awareness of ethics		41.56%
Self-confidence		35.06%

the general set for global sample (see Fig. 1) except the last one (self-confidence) which in Europe is replaced by flexibility. For young professionals, the situation is also very similar to the global set: the first four are the same but the last one (planning ability) is replaced in Europe by self-confidence.

When comparing these data with those obtained in the pilot study, the five most important soft skills for students are the same (although with a different ranking of importance). Therefore, as the most important skills have been remained the same over time (at least in the last 5 years), it can be assumed that the set of recommended soft skills for good performance in multinational settings is:

- Solid as it remains the same after a relevant period of time with different samples so one can be confident in getting good results when they are used for shaping actions to support mobility.
- Dependent on cultural background in each country or area.

In the case of skills most important for professional environments, those soft skills are not the same as in the global set; the three most important are kept (responsibility, communication as message sender and teamwork player). Maybe the differences among the different professions and companies are influencing these results, while the work students have to do is more conventional and similar in the different countries and degrees. The variability of demand of soft skills in the labour market could be another factor impacting in this aspect.

In the case of European countries, differences in experience of experts (coordinators, teachers or managers) were also analysed using descriptive contingency tables and chi-square tests. Once again, we can conclude there is not relevant difference in opinion among them. This adds generalization and soundness to the results.

RQ3: Is there any relation among specific Hofstede dimensions determined by the country origin and the soft skills chosen as key elements for success in multicultural settings?

This question is focused on the test of possible relations between the measures of cultural dimensions and data collected from experts about soft skills recommended for multicultural settings. As explained above, we explored only relations which theoretical analysis suggests as logical. Not all the countries had available data for Hofstede's dimensions, the final number of countries of the sample with data were 33, i.e. the remaining of the sample are not included in the official current tables of Hofstede's indicators.

As a first step in analysing these relationships, we have firstly explored the existence of relations between the dimensions of Hofstede and the soft skills considered as the most important for multicultural settings. We have calculated the Pearson coefficients once checked the normal distribution for every variable. Table 6 shows the relevant correlations found out for students and professionals.

Obviously as a first step we have analysed which were the logical relations supported by other studies as well as the check of our previous results. Results from one previous study [19] suggested a logical inverse relationship between IDV and teamwork and some subtle positive relationship between UAI and flexibility. Other studies have already identified link between MAS and self-steem [22]. After analysing the definitions and explanations provided by Hofstede, we completed other pairs of variables to be checked: e.g., inverse relation between UAI and LTO to planning ability as well as UAI and ethical behaviour.

In order to find out if the combination of several Hofstede dimensions could predict the importance given by experts to some of the soft skills, we have run multiple regressions analysis. We selected this method because it allows measuring the contribution of the independent variables (Hofstede's dimensions) to the dependent variables (soft skills). Multi-collinearity was not found with all VIF (variance inflation factor) values close to 1 as shown in Table 7. We also run an analysis for each soft skill as dependent variable, and every Hofstede

Table 6. Pearson correlation coefficients between soft skills and Hofstede dimensions

		PDI	IDV	MAS	UAI
Students	Communication skills as message sender	−0.565			
	Awareness of ethical behaviour				0.411
	Teamwork player		0.585		
	Planningability		0.538		
Professionals	Awareness of ethical behaviour				0.603
	Flexibility	0.427			
	Selfconfidence			−0.666	
	Communication skills as message receiver			0.417	

N = 33, 0 < r < 1. Note: Only relevant correlations are shown.

Table 7. Significant regression results for professionals

Variables	R²	F (p < 0.05)	Not standardised coefficients	t (p < 0.05)	VIF
Self-confidence	0.600	6.740			
MAS			−0.802	−3.595	1.118
LTO			0.418	1.873	1.118
Awareness of ethical behaviour	0.364	6.865			
UAI			0.226	2.620	1.000
Communication as message receiver	0.302	5.195			
MAS			−0.323	−2.279	1.000
Flexibility	0.254	4.247			
PDI			0.237	2.363	1.005

N = 33.

Table 8. Significant regression results for students

Variables	R²	F (p < 0.05)	Not standardised coefficients	t (p < 0.05)	VIF
Teamwork players	0.343	5.738			
IDV			−0.283	−2.395	1.000
Planning ability	0.289	5.291			
IDV			0.264	2.300	1.000
Communication as message sender	0.342	3.642			
PDI			0.280	−1.845	1.390
IDV			0.187	1.643	1.390
Awareness of ethical behaviour	0.230	4.490			
UAI			−0.275	−2.119	1.000

N = 33 (countries).

dimension as predictor. In order to confirm that the relations were no casual, we executed ANOVA and F-tests. Table 7 and Table 8 summarize the results of the multiple regression analysis showing only the skills and predictors with $p < 0.05$ in F-test in order to ensure real effects of the independent variables over the dependents. Regressions have resulted in significant ($p < 0.05$) models with R^2 between 0.254 and 0.600.

6. Discussion

We have firstly analysed the results of regression for professionals. Examination of the significant predictor variables shows that countries with high masculinity (MAS) and long term orientation (LTO) consider self-confidence as an important soft skill for professionals in multinational environments. The model explains a 60% ($R^2 = 0.600$) of variance denoting a high level of correlation. One of the most important factors in developing self-confidence is planning reachable goals, and preparing for the uncertainty [23]. Sweden, Slovenia and Lithuania are examples of countries with low values in masculinity index, and high in long term orientation, and so they consider self-confidence as

an important soft-skill for working in multinational environments. Masculinity is also a predictor the preference of the skill of listening (communication as message receive) predicting a 30.2% of variance. The correlation here is negative; so more cooperative societies consider important the understanding of the message (listening) to develop well in multinational professional environments. On the other hand, flexibility is predicted by power distance index (PDI) with 25.4% of variance explained. Countries with high value of PDI accept well hierarchical order which can influence in the level of flexibility of people or how they consider that flexibility is important. Finally, uncertainty (UAI) is a predictor of awareness of ethical behaviour with 36.4% and 23% of variance explained for professionals and students respectively. Societies who do not tolerate well uncertainty, such as Spain, have rigid codes of beliefs and behaviours, and have low tolerance to unorthodox ideas. This can explain that these societies consider important ethical behaviours.

Regarding students, in addition to awareness of ethical behaviour, countries with low level of individualism (IDV), i.e. collectivism countries, consider that team working is somehow important in students for multinational working with 34.3% of

variance explained for this variable. Planning ability is predicted too by IDV ($R^2 = 0.289$), but this time is a direct relationship. Therefore, countries where people take care of themselves and their direct family only, consider important planning ability for students when being involved in multinational settings. Planning ability together to communication are consider skills for leadership. Communication as message sender is another skill predicted by IDV, along with power distance index (PDI) with 34.2% of variance predicted. Both IDV and PDI were two initials culture predictors consider in our hypothesis from out past experiences. The other one, masculinity, in not confirmed as culture predictor for leadership in this study.

Of course, this study has some limitations. The sample size is varied but still limited and the representation of the different branches of the engineering shows with a clear bias to IT and computing. The representation of countries is varied enough but it could still be improved. However, we have shown that the results are consistent because they remain similar to the ones of our previous studies with a different sample after 5 years. This suggests that conclusions are representing a global and stable trend, adding value to its possible use for different actions in promotion and improvement of student and graduates mobility.

Another limitation is the use of the limited set of 10 soft skills. Although they were determined by directly collecting information from employers we are aware that there are larger catalogues of soft skills or ones explicitly including skills very connected to internationality. However, we repeated the same set of skills in this study because it was necessary to compare these last results to the ones obtained five years ago. Even more, there were really few suggestions from experts for adding new skills. We are planning to review the set of soft skills in further works in this area.

7. Conclusions

Mobility is becoming a must rather than just an option for students and graduates pursuing successful career development. Information coming from our previous multinational experiences motivated us to carry out a specific study with several goals: determining which set of soft skills is recommended by experts to students and young graduates willing to work in multinational settings and exploring possible relations between cultural background and the preference of skills expressed by experts of each country.

The results coming from a sample of 133 experts have confirmed a recommended set of soft skills for both cases (students and graduates) which has been shown to be stable and global. We have also analysed the particularization of this set for European countries given the importance of the Erasmus students mobility programme. Another result is the observation of how the cultural indicators of each country tend to influence the soft skills selected by the corresponding experts with clear relationships between some cultural indicators and the preference for specific soft skills. This information could be valuable for many actors in the process of mobility. For example, students and graduates could be aware of the preference of experts (teachers, managers, etc.) in the destination country or in multinational teams so they can adapt themselves to this reality. Another possible consequence could be the creation of specific training programs for students and graduates before participating in multinational experiences.

We are planning new studies to explore the role of soft skills in students for academic mobility and well as for young graduates when working abroad. As commented before, these new studies will be guided by the aim of improving aspects like broadening and amplifying the sample in terms of engineering branches, number of respondents and new countries, keeping in mind that it is preferable to increase numbers in countries with availability of Hofstede indicators. Another goal is the review of the set of soft skills to be used as basis, collecting information preferably from standard sources like catalogues of skills from international frameworks like the forthcoming ESCO (https://ec.europa.eu/esco/portal/home), the new European classification of skills and occupations, to be finally published in 2017.

Apart from improving the replication of the studies we are also thinking in additional further work focused on a comparison of the preferences for skills expressed by students and by experts. This requires the access to a relevant number of students with experience in mobility, collecting information before and after living multinational experiences. This study should be complemented by adding questions on their perception of the usefulness of possible specific training and development of skills oriented to address the multinational scenarios where they need to live and act.

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