

# **Project Management's University Educational Offering: a comparative analysis between Italy, United Kingdom and United States**

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## **Abstract**

Project Management (PM) discipline and PM methodologies are extremely valuable for private and public organizations. As it is well known, for decades the main professional organizations linked to the PM, in particular the Project Management Institute (PMI) and the International Project Management Association (IPMA), have identified and formalized principles, guidelines and best practices useful for the correct management of projects and programs, to certify project manager's proficiency. The research investigates the university educational offering concerning PM discipline in Italy, United Kingdom (UK) and United States (US) in order to report different types of courses and topics lectured and perform a comparative analysis. The objective is to analyze in detail the presence/absence of fundamental topics unveiling the different type of PM courses in different countries, highlighting peculiarities of contents and underlining the impact not only at professional training level, but also at the academic level. Results of the research can be useful for suggesting improvement paths in the three countries.

**Keywords:** Project Management, University Educational Offering, Training

## **Project Management's University Educational Offering**

PM Training plays a key role for future project managers' growth, as well as the development and updating of PM skills of project managers and project teams can be a decisive lever for increasing organizational competitiveness and survival (Ramazani & Jergeas, 2015; Pant, I. & Baroudi B., 2008). Recently, in several countries as in Italy for example, some international institutions have created PM training programs taking advantage of the gap of PM education left by the university context. Some successful companies organize also PM courses comparable to real masters within corporate

academies having academic and professional experts as faculty members. US and UK are differently organized; US is the nation in which PM discipline was developed in XX century and where, since the early 1900s, the first best practices were conceived and applied (Gantt, CPM, PERT, WBS diagram, Earned Value, etc.) in the military and civil field. Further, two main professional associations are founded in US: the International Project Management Association (IPMA) and the Project Management Institute (PMI). In particular, at the end of the '80s, PMI produced the first edition of the "Project Management Body of Knowledge" (PMBOK), a text that has now reached its sixth edition. PMBOK has certainly influenced the development and dissemination of the doctrine together with numerous contributions from scholars and practitioners having US or Anglo-Saxon backgrounds. The Anglo-Saxon context is not only pioneer in PM development, but it is also characterized by the stable presence of numerous universities in the top positions of international rankings.

Other countries, as Italy for example, implemented later PM discipline. Therefore our objective is to analyze the PM's University Educational Offering doing a comparison between Italy, United Kingdom and United States. This comparison will allow us to detect the current PM educational offering on academic level analyzing it in terms of types of courses and programs covered with the aim of understanding which are the most relevant and emerging topics to be competitive.

## **Methodology**

Data for qualitative and quantitative analysis on PM university educational offering has been obtained through a systematic consultation of Italian, British and American universities websites. We considered the totality of universities in Italy (91) and in UK (162) while for the US we selected a significant sample (146) of the total of the post-secondary institutions. We have been able to consider 146 of the 4664 institutions for post-secondary education in US doing a preliminary research of the American context and his diversity in terms of quality of resources (both human and technical) and contents. The impressive number of institutions for post-secondary education is comprehensive of a series of different institutions subdivided into the following five broad categories:

- doctoral / research universities, which offer degrees from the bachelor up to the Ph.D. in many disciplines;
- master's colleges and universities, which offer degrees from the bachelor's to the master's in many disciplines;
- baccalaureate colleges, which offer titles up to the bachelor's degree in many disciplines;
- associate's colleges (also known as junior or community colleges), that offer only titles of associates, as well as possibly other vocational diplomas;
- Specialized institutions, which offer degrees from the bachelor to the PhD in a single discipline.

So if we restrict the sample exclusively to 1076 doctoral / research universities and master's colleges and universities, these represent only 23% of all post-secondary institutions in the United States. Of the 516 US's University with Business School officially accredited by the Association to Advance Collegiate Schools of Business, we considered the top 146 of 2015 "Eduniversal" ranking. For each university we tracked presence, type and content of courses offered in the 2016-2017 academic year. Additionally, we created three analysis frameworks that outline course types offered in the three countries for:

- teaching modules inside bachelor/master degree/postgraduate programs;

- multi-module programs;
- non-credits programs;

For each framework we identified clusters that are macro-areas comprehending courses whose name includes "Project Management" and similar PM's aspects/sectors. Finally we compared incidence percentages of presence, typology and contents of PM courses offered by universities in the three contexts considered.

### Analysis and Discussion

The first interesting data is related to the percentage of universities in the sample who provide at least one PM course. Among the 91 universities analyzed in Italy, 44 (about 48%) have at least one PM course, while 47 did not. In the United States, out of 146 universities analyzed, only 13 (about 9%) do not show any course dedicated to the discipline of PM, while out of the 162 analyzed, in the United Kingdom 80 universities (about 49%) are not provided PM courses. Basically in the United States the vast majority of the universities analyzed (about 91%) provide PM courses against 48% of Italy and 51% of the United Kingdom: according to this first result in the United States there would seem to be more propensities to include the discipline of PM through the university institution. You can view these results in the following figure.

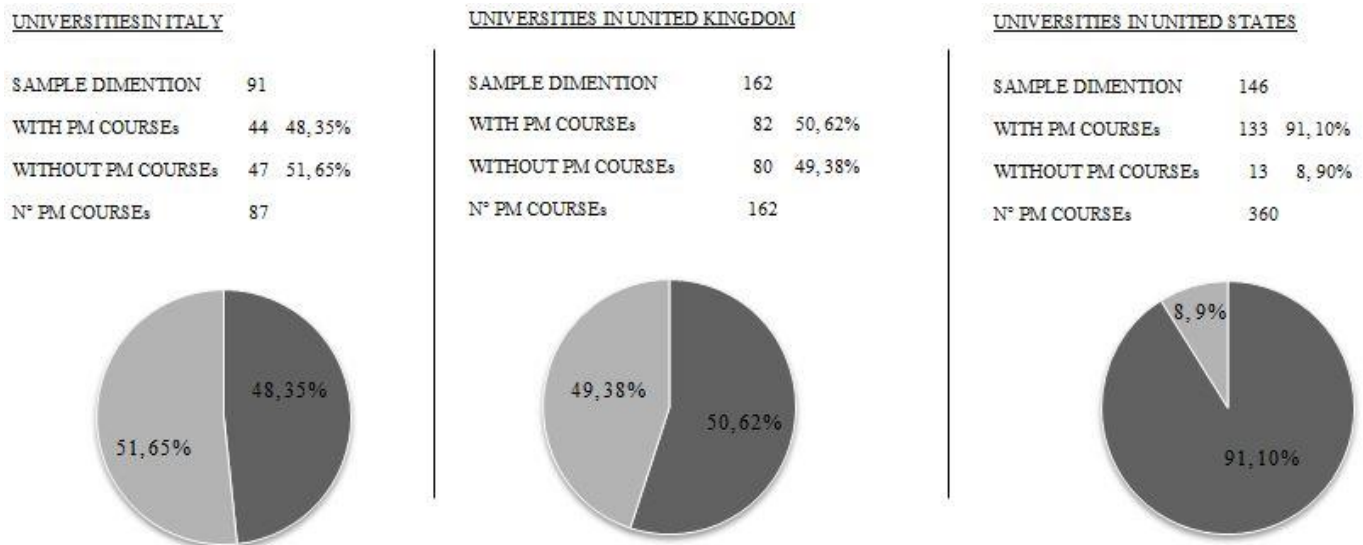


Figure 1 – Percentage of Project Management University Educational Offering in Italy, United Kingdom and United States

It is interesting to notice that:

- In the United Kingdom, a total of 162 courses were found in the 82 universities in which the presence of PM courses was found, a ratio of two courses per university.
- A total of 360 courses were found in the 133 US universities providing PM courses, about three courses per university.
- In Italy, on the other hand, 87 courses were found in the 44 universities providing PM courses, a ratio of about two courses per university.

This result confirms that PM is more common in US, in fact not only in US there is the highest percentage of universities providing project management courses, but also the number of courses found per universities is on average higher than in the other countries taken into account.

There are several kinds of courses in the three countries that can be divided in these three categories:

1. multi-module programs
2. teaching modules inside bachelor/master degree/postgraduate programs;
3. non-credit programs;

The group of 87 courses in Italy is composed as follows:

1. 23 Multi-module programs (26,44%);
  - 14 University Masters of I and II level;
  - 9 Advanced training courses;
2. 51 Teaching modules (58,62%);
3. 13 Non-credit programs (14,94%);
  - 5 Short Courses;
  - 8 PMI Exam preparation programs;

The group of 163 courses in the UK is composed as follows:

1. 102 Multi-module programs (Bachelor Degree Programs) (62,58%);
2. 43 Teaching Modules (26,38%);
3. 18 Non-credit program (Short courses) (11,04%)

The group of 360 courses in the US is composed as follows:

1. 51 Multi-module programs (Bachelor Degree Programs) (14,17%);
2. 157 Teaching modules (43,61%);
3. 152 Non-credit programs (42,22%):
  - Short courses;
  - Certificate programs;
  - PMI Exam preparation programs

These results highlight an interesting difference between the three countries analyzed: more than 60% of the PM courses in the UK are represented by bachelor degree programs, while in the US, the bachelor degree programs are the type of course less used although numerically consistent (51 bachelor degree programs in PM out of 146 universities analyzed). In Italy there are no specific bachelor degree programs in PM discipline. For the purposes of the comparative analysis, we have made a comparison between multi-module courses that are bachelor degree programs in the US and the UK and post-graduate training programs in Italy; Italian post graduate programs are, in percentage, much closer to the bachelor degree programs found in the US than those in the UK.

In Italy, in fact, masters and the advanced training courses are about 36% less than the percentage of degree programs found in the UK and about 12% more than the percentage found in the US.

Unlike the UK, the percentages of the teachings in the United States and Italy are higher, respectively about 17% and 32% more.

For non-credit programs, the percentage of short courses in the UK is about 11%, in Italy almost 15%, while in the US it is more than 40%. This suggests that Americans are more pragmatic in approaching

PM discipline in the sense that there is the aim to obtaining an instrumental training for short-term needs: in fact, non-credit programs are generally oriented to professionals who need immediately applicable tools. Such a low percentage of multi-module programs in Italy and undergraduate courses in the United States - in total contrast with the results obtained in the United Kingdom - brings out two different approaches to the discipline of Project Management, one more oriented to vocational training and one to general academic training typical of degree programs, masters and postgraduate courses. Figure 2 shows the percentage of each course category identified in the three countries.

<u>PM COURSES IN ITALY</u>			<u>PM COURSES IN UNITED KINGDOM</u>			<u>PM COURSES IN UNITED STATES</u>		
MULTI-MODULE PROGRAMS	26,44%	23	MULTI-MODULE PROGRAMS	62,58%	102	MULTI-MODULE PROGRAMS	14,17%	51
TEACHING MODULES	58,62%	51	TEACHING MODULES	26,38%	43	TEACHING MODULES	43,61%	157
NON - CREDIT PROGRAMS	14,94%	13	NON - CREDIT PROGRAMS	11,04%	18	NON - CREDIT PROGRAMS	42,22%	152

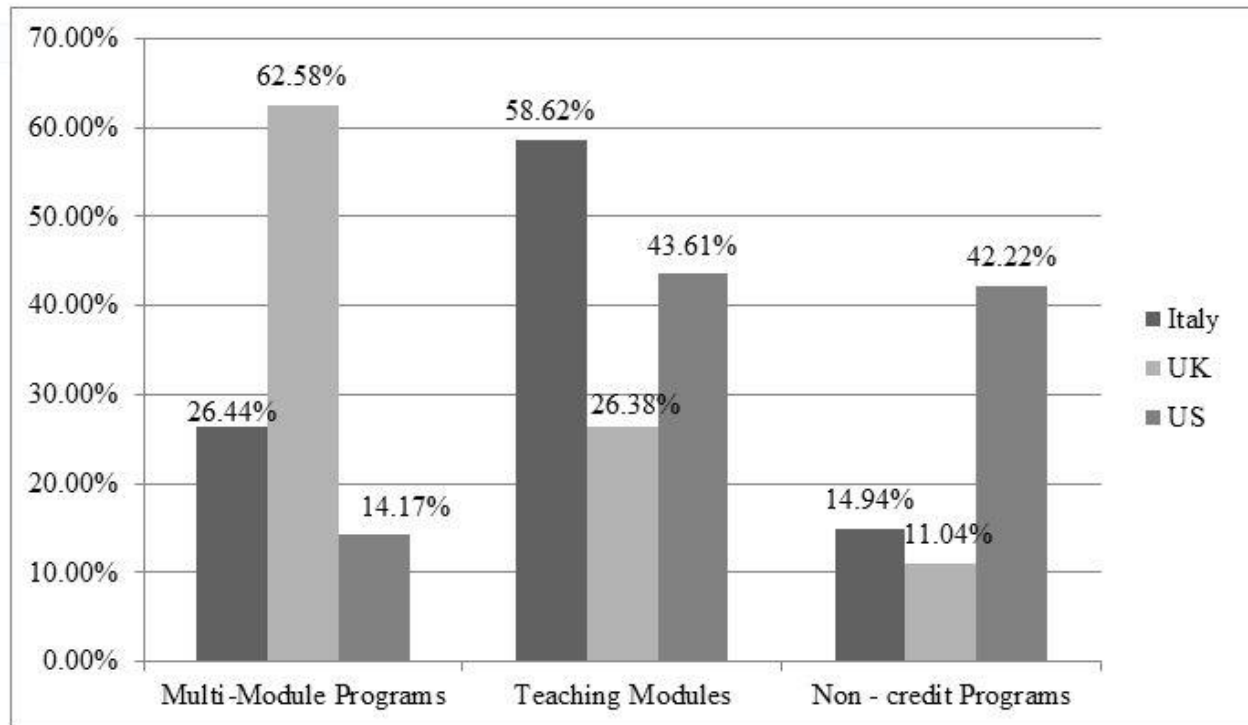


Figure 2 - Types of Project Management courses identified in Italy, the United Kingdom and the United States

Non-credit programs do not contribute to achieve university credits necessary to graduate. These kinds of course include short courses, certificate programs, and PMI exam preparation programs.

In UK only short courses have been identified as non-credit program while in US there are short courses, certificate programs and the PMI Exam preparation programs and in Italy short courses and PMI exam preparation programs.

A further classification has been made for each type of course subdividing them into "general" PM and "sectorial" PM.

Courses have also been classified not only on type but also based on content; we divided them in general and sectorial courses. In the three countries, the portion of sectorial project management courses

are identified; in particular in Italy almost 14% of courses (12) seems to be sectorial, in US 22% (80), while in the UK 39% (63). In particular, 50% of sectorial courses in Italy are multi-module programs while in the US degree courses cover just the 10%.

The most common application sector is Construction in Italy and UK while in the US is Information Technology (IT).

The 10 top application sectors have been identified in each country. The construction and IT sectors are, together with the Engineering sector, the most common application sectors. In particular, with regard to the UK: 52.4% of sectorial courses are designed for the construction sector, 14.3% for IT and 12.7% for Engineering, while the remaining 20.6 % to other application. As regards the US, 38.8% of sectorial courses are meant for IT, 17.5% for construction, 15% for engineering, 13% for research projects on healthcare, while the remaining 16% in various application contexts. In Italy 50% of the sectorial courses are targeted to the construction sector, 41.67% to information technology and 8.33% to the internationalization of production. It is possible to observe these results in figure 3.

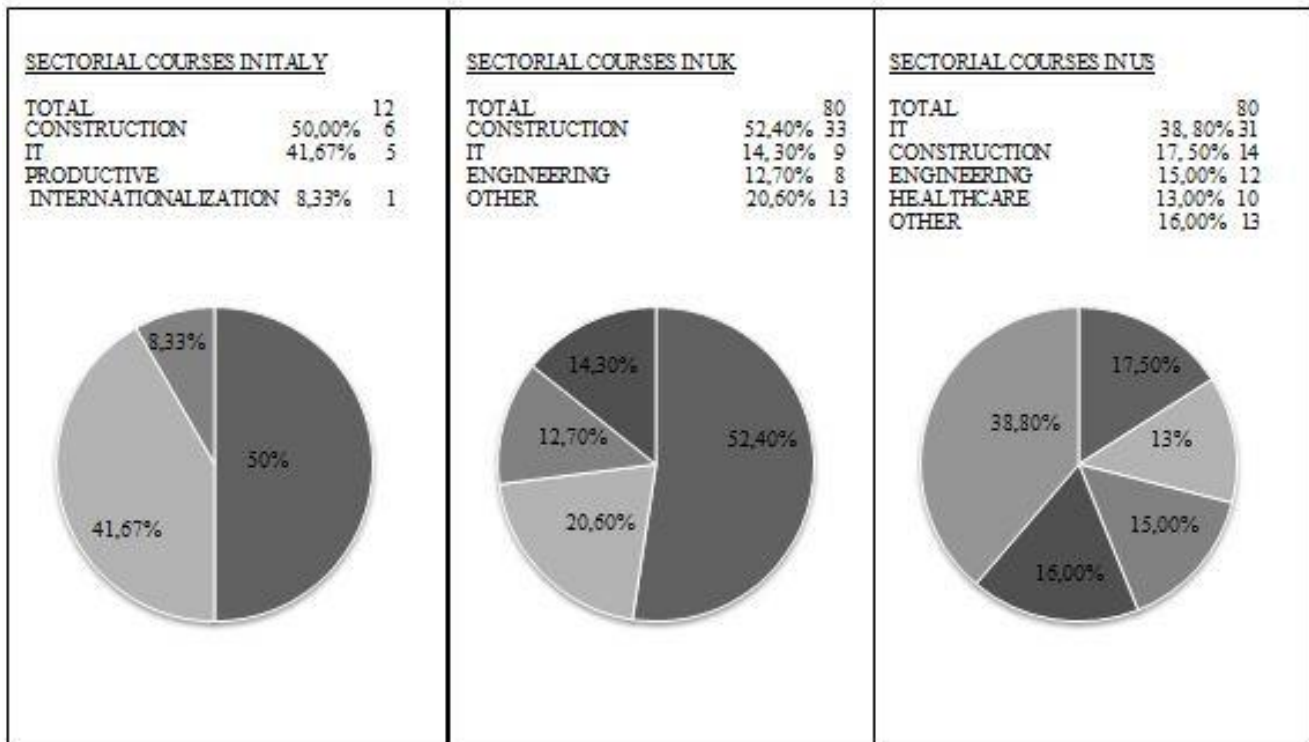


Figure 3 – Sectorial Courses in Italy, United Kingdom and the United States

### Comparison between thematic clusters covered in multi-module programs

Through the analysis of multi-module programs, 26 thematic clusters were identified. Considering the 102 degree programs identified in the UK, 51 in the US and 23 in master' courses in Italy, Table 1 shows the percentage presence of these thematic clusters in the three countries.

*Table 1 - Thematic clusters covered in multi-module programs in Italy, United Kingdom and United States*

<b>CLUSTERS</b>	<b>ITALY</b>	<b>UK</b>	<b>US</b>
Organization and HR management	<b>95,65%</b>	<b>74%</b>	<b>68,6%</b>
Performance management	<b>91,30%</b>	<b>65%</b>	<b>62,7%</b>
Economics and business areas management	<b>91,30%</b>	<b>67%</b>	49%
Project Management Processes	<b>82,61%</b>	<b>88%</b>	<b>58,8%</b>
Scope and Change management	<b>82,60%</b>	23%	19,6%
Risk management	<b>73,91%</b>	<b>66%</b>	<b>54,9%</b>
Fundamentals of Project Management	<b>69,56%</b>	<b>68%</b>	<b>82,4%</b>
Program management	<b>60,87%</b>	25%	17,6%
Communication management	<b>56,52%</b>	27%	33,3%
Tools & Techniques	47,83%	<b>77%</b>	<b>54,9%</b>
Economic, legal and political framework	47,83%	46%	45%
Stakeholder management	43,48%	18%	11,8%
Portfolio management	39,13%	20%	17,6%
Strategic management	39,13%	<b>61%</b>	49%
Operations management	39,13%	32%	21,6%
Information Technology	34,78%	16%	25,5%
International Project Management	34,78%	23%	21,6%
Procurement management	30,43%	38%	29,4%
Value management	13,04%	17%	7,8%
Complex and Major project	13,04%	4%	11,8%
Engineering and construction fundamentals	8,70%	25%	9,8%
Sustainability	8,70%	29%	0%
Multi-project management	4,35%	1%	2%
Information management	4,35%	22%	19,6%
Engineering and construction management	4,35%	33%	21,6%
Services management	0%	11%	2%

The most covered cluster in multi-module programs in the UK is called Project Management Processes, in the US is Project Management Fundamentals while in Italy is Organization and HR management. However, in all countries, the most frequently proposed clusters are Fundamentals of Project Management, Performance Management, Project Management Processes, Risk Management and Organization and HR Management. The theme of Strategic Management is common in the UK , even if in the US the percentage of the same cluster is equal to 49% and in Italy to 39%. The Tools & Techniques cluster is present in more than 50% of the courses both in the UK and the US and about 48% of the time in the courses offered in Italy. The Economics and business areas management cluster has a percentage of more than 50% only in the United Kingdom and Italy, although in the United States it is equal to 49%. Finally, the Scope & Change management, Communication management and Program management clusters account for more than 50% only in Italy.

Clusters covered in more than 50% of the multi - module post - graduate courses in Italy are, in descending order:

- Organization and HR management;
- Economics & Business areas management;
- Performance management;
- Project management processes;
- Scope & Change management;
- Risk management;
- Fundamentals of Project Management;
- Program management;
- Communication management.

Thematic clusters covered in more than 50% of the UK degree programs are, in descending order:

- Project Management processes;
- Tools & Techniques;
- Organization and HR management;
- Fundamentals of Project Management;
- Economics and business areas management;
- Risk management;
- Performance management;
- Strategic management;

Clusters in more than 50% of multi-module programs in the US are, in descending order:

- Fundamentals of Project Management;
- Organization and HR management;
- Performance management;
- Project Management processes;
- Risk management;
- Tools & Techniques;

In the three countries, PM fundamentals are in the first three clusters, i.e. the origins of PM and the meaning of the project, the three project variables that measure performance (time, cost and quality) and the project life cycle phases. It is interesting to note that only risk management and human resources (HR) management are among the most discussed topics in the three countries.

Clearly, a good management of risks and HR are considered by the course organizers to be influential factors for projects' success. The attention given in Italy to HR management and to topics such as leadership and project team management is interesting. A topic identified during the analysis of the multi-module post-graduate courses and for which a specific cluster was not previously created, is the Project Financing. This was incorporated into the Economics & Business areas management cluster, one the most common in Italy, which covers also financial thematic.

A thematic cluster called Tools & Techniques is one of the most common in the US and the UK. In this cluster there are modules that cover tools, methodologies and specific approaches of PM, as well as Microsoft Project laboratories or new approaches such as Agile PM, but also teachings related to specific tools of some of the application sectors of the discipline, such as CAD or BIM.



With regard to the less common clusters, a first percentage difference occurs at the Engineering and construction fundamentals cluster, which in the United Kingdom reaches 25%, while in Italy and the United States it does not reach 10%. This result probably depends on the greater presence of sector degree programs in the United Kingdom.

Another difference is found in the issues of service management and sustainability. The first is totally absent in Italy, present only in 2% of US courses and 11% of courses in the UK. The second one is present in less than 10% of the courses in Italy, totally absent in the US, and present in almost 30% of the courses in the UK. A high percentage in the UK is probably due to the fact that in recent years, besides being characterized by an ever increasing development of technology, they have distinguished themselves by the presence of a strong focus on environmental sustainability.

### Comparison between thematic clusters covered in teaching modules

Teachings modules identified in Italy, UK and US have been classified in 20 thematic clusters containing both fundamental and sectoral topics for PM discipline. Considering the 51 identified in Italy, 43 modules in the UK, 157 in the US, Table 2 shows the percentage of teaching modules that cover each cluster in each country.

Table 2 - Thematic clusters covered in teaching modules

CLUSTER	ITALY	UK	USA
Project management processes	92,16%	86%	85,2%
Organization and HR management	82,00%	65%	67,2%
Performance management	80,39%	74%	84,4%
Fundamentals of Project Management	68,63%	79%	64%
Risk management	68,00%	56%	46,1%
Information technology	66,67%	12%	28,9%
International Project Management	66,67%	2%	7,8%
Scope management	63,00%	23%	23,4%
Tools & Techniques	58,82%	37%	54,7%
Economics and business area	49,02%	12%	12,5%
Change management	37,25%	16%	21,9%
Communication management	37,25%	28%	29,7%
Strategic Management	37,25%	12%	13,3%
Program management	35,29%	14%	7,8%
Economic, legal and political framework	33,33%	21%	21,1%
Operations management	29,41%	7%	4,7%
Stakeholder management	27,45%	40%	13,3%
Engineering and construction management	22,00%	2%	18,7%
Portfolio management	19,61%	7%	10,2%
Sustainability	9,80%	2%	2,3%

In the three countries, PM processes cluster is the most common. Going into detail, the clusters present in more than 50% of the teachings of the United Kingdom are, in descending order:

- Project Management processes;
- Fundamentals of Project Management;
- Performance management;
- Organization and HR management;
- Risk management;

Clusters in more than 50% of US teachings are, in descending order:

- Project Management processes;
- Performance management;
- Organization and HR management;
- Fundamentals of Project Management;
- Tools & Techniques.

Clusters covered in more than 50% of the courses in Italy are, in descending order:

- Project Management processes;
- Organization and HR management;
- Performance management;
- Fundamentals of Project Management;
- Risk management;
- Information Technology;
- International Project Management;
- Scope Management;
- Tools & Techniques.

The results show that for the teaching modules the three countries have the same first four clusters, even if in a different order. The three countries have in common, as in the case of multi - module programs subjects as project performance (time, cost and quality), project life cycle phases and the introduction to the PM discipline. HR management and risk management are the most common knowledge areas in Italy, the UK and the US; in particular, HR management of human resources is one of the clusters included in those covered by more than 50% of the teaching modules in all three countries, while the management of risks, over fifty percent in the UK and in Italy, although not reaching 50% in United States, however, is the knowledge area most covered after HR management. The Tools & Techniques cluster, which exceeds 50% both in Italy and in the US, presents, however, a percentage of 37% in the UK, but it is one of the most common anyway.

Scope management, IT , sustainability and international PM clusters show percentages above 50% only in Italy. The percentages in Italy relative to the aforementioned clusters are far greater than in the other two countries. Furthermore, the topics related to the application fields of PM, such as IT and Engineering, are clearly more present in teaching modules taught in Italy and, to a lesser extent, in the US.

## **Conclusions**

The analysis of the sample allowed us to identify 87 PM's courses in Italy, 360 in the US and 160 in the UK. While in Italy and in UK, about 50% of the universities propose a PM course, in US - land of origin of the discipline and the main professional associations of PM - this data rises to 91%. In US

there are evidences that the discipline of the PM is deeply innervated within the training courses of different degree courses, probably thanks to the role of professional associations such as PMI and IPMA. The high number of non-credits programs (42.2% of the sample) also demonstrates this phenomenon, typical of the US context. This high percentage of non-credits programs also underlines the pragmatic approach of this country to the PM discipline: in fact, laboratories and practical applications of PM tools and techniques generally characterize these programs. Therefore, they are designed for workers already in the sector or to those with short-term concrete purposes, as courses with a strong "professionalizing" content. With regard to the analysis of general and sectoral courses, we found a slightly lower percentage of sectoral courses in US than in UK. In Italy, however, the number of sectoral courses (i.e. the courses in which PM is applied on a specific contexts) is lower than in the other two countries. From the point of view of the sectors of application, data show that in Italy and the UK the most widespread is Construction sector, while in the US almost 40% of the sectoral courses identified are applied to the Information Technology sector. Undoubtedly, this fact is influenced by the different industrial contexts. There is therefore an attention of the Italian academic context to the strategic and economic-financial aspects of the project; in UK and in US, this cluster is treated to a lesser extent, especially within degree programs. This research offers a detailed description of PM's university educational offering in Italy, UK and US. The comparison between the three countries allowed us to recognize that, in UK and US contexts, there is further evidence of the orientation to a PM training focused on operational tools, and to a less "strategic" perspective, as also highlighted by the lack of teaching modules dedicated to program or portfolio management, significantly present in Italy. On one hand, university education should offer theoretical basis in order to make students being aware of objectives and having a long term-orientation, on the other, PM constitutes also a practical discipline and, because of that, requires instruments' adoption. In consideration of this, we suggest inserting, in each country in any PM's university programs, some practical laboratories whose pragmatic approach would give tools & techniques. This would permit to discern PM's laboratories and PM's teaching modules, which could address virtuously only theoretical contents.

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