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The accounting of cultural heritage assets of Italian Universities' Museums: groking the third mission.

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Abstract

Higher Education Institutions (HEIs) are becoming more aware of the role they might play for the sustainable development and social value creation of societies and countries. The so-called third mission translates in actions the dialogue between universities and societies, and universities and stakeholders. In Italy, recent normative changes towards accrual accounting have asked universities to measure and disclose their cultural heritage assets. The switch from “pure” financial accounting requirements cash-based to a more mature accrual accounting system posed the challenge of the intellectual capital valorization. The cultural heritage comprises “university collections, museums, archives, libraries, botanical gardens, astronomical observatories, monuments of significance”. The current lack of accounting principles to be used in preparing such disclosures have required universities to reevaluate or impair their heritage book values. The study comments the role of accounting in shaping the reality within the context of Italian Public Universities.

Keywords

- Cultural heritage assets
 - Italian Universities' Museums
 - Third mission
 - Accounting
 - Book heritage, artworks, antiquities and museum assets
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1.1 Introduction

Higher Education Institutions (HEIs) are becoming more aware of the role they might play for the sustainable development of societies and countries (Global University Leaders Forum and International Sustainable Campus Network, 2016; Grau, Hall, & Tandon, 2017). The institutionalization of the goal “Quality Education” in the recent United National Sustainable Development Goals has put a greater pressure over the efforts of HEIs to enhance strategies to let knowledge transfer more efficient (Trencher, Yarime, McCormick, Doll, & Kraines, 2014). Alongside more tangible outputs, such as patents, spin-offs and licenses, other soft ways to create and disseminate knowledge exist (Cesaroni & Piccaluga, 2016). Just in the last decade, universities as HEIs are, even more than in the past, called to organize and control their teaching and research duties, as well as, their societal outreach and knowledge transfer (Laredo, 2007). The so-called third mission translates in actions the dialogue between universities and societies, and universities and stakeholders (Leydesdorff, 2012; Leydesdorff & Etzkowitz, 1996). While various definitions of third mission practices exist, the accounting and accountability of such third mission remains unclear. Of course, the accounting and accountability of public engagement practices must take into account the role of researchers, their attitudes, motivations, obstacles in communicating with different publics, in order to get a picture of the “Science in Society relationship” (Agnella, De Bortoli, & Scamuzzi, 2012). For this reason, the title of our preliminary study mentions to grok the third mission to understand completely and intuitively the rationale of the third mission accounting. Additionally, accounting scholars have addressed the role of intellectual capital in the universities (Ramirez-Corcoles & Manzanegue-Lizano, 2015; Sánchez, Elena, & Castrillo, 2009), the processes of planning and control of intellectual capital creation (Sangiorgi & Siboni, 2017) and the performance measurement in universities (English, Guthrie, & Parker, 2005; Neumann & Guthrie, 2002; Siboni, Nardo, & Sangiorgi, 2013). This radical change happens in the framework of so-called New Public Management that implies the adoption of sophisticated accounting techniques to plan and control the integrated performance of universities (Almquist, Grossi, van Helden, & Reichard, 2013; Aversano, Rossi, & Polcini, 2017; Bonollo & Merli, 2018). Consequently, universities are assisting and will assist in a soft process of corporatization (L. Parker, 2011; L. D. Parker, 2013). A factual consequence of such corporatization is the recent (2013) introduction of accrual accounting within the Italian Universities’ system has led researchers to investigate the mechanism of implementations, barriers to the adoption and resistance (Agasisti, Catalano, & Erbacci, 2017). Actually, few studies are questioning the role of non-measurable or unpredictable knowledge transfer “accounting values” herein public universities financial reporting. The study herein presented specifically addresses the implication of the cultural heritage assets herein the public universities reporting. The remaining of the paper is organized as follows: section 2 presents the role of university’s museums and museums hubs as a component of the third missions of universities; section 3 briefly discusses the role of accounting disciplines in the theories and practices of cultural heritage assets; section

4 presents methodological implications; section 5 discusses and argues the results and conclusions.

1.2 The interplay between university museums and the third mission

Studies over the importance of university museums are rare and fragmented, because the phenomena is recent and scholars discussed more on the role of corporate museums as a way to enhance the visibility and the identity of corporations (Duhs, 2011; Nissley & Casey, 2002; Stanbury, 2000). Starting from 2000, the representatives of collections and museums of twelve European universities met at the University of HalleWittenberg, to startup a project called Universeum network, aiming at the preservation and promotion of academic heritage in Europe (Declaration of Halle Academic Heritage and Universities: Responsibility and Public Access). According to Universeum, academic heritage can be defined as “university collections, museums, archives, libraries, botanical gardens, astronomical observatories, monuments of significance” (Universeum, 2010, Statute). University museums and collections have unquestionably played a central role in the production of knowledge unlocking new pedagogical power and dialogic role with societies and territories (MacDonald, 2003; Ruiz-Castell, 2015). Even though, a past of decadence, negligence, and disregard has let universities a passive actor in the restoration and valorization of their cultural heritage assets. Now, this new emphasis towards the fulfillment of these third mission activities, universities are investing financial resources and human resources for the restoration of their cultural heritage as a new source of competitiveness, students attraction and corporate citizenship (Jardine, 2013; Talas & Lourenço, 2012). According to the International Council of Museums Committee for University Museums and Collections (ICOM, 2017, accessed in November 2017), UNESCO has recognized several times that the heritage of universities is having outstanding value to humanity, and it has concretely incentivized the creation of networks of university museums. In Italy, University of Modena and Reggio Emilia (UNIMORE) is leading several processes of cataloging, promoting and institutionalizing the role of Italian university museums. According to such first recognition, the project of UNIMORE counts 64 museums, 38 collections e 9 botanic garden and herbaria. According to the framework and guidelines provided by UNIMORE, the composition of the cultural heritage includes: anthropologic artifacts, demo-etno-anthropologic materials, archeologic artifacts, drawings, photos, art and antiquities, contemporary art pieces, prints, natural assets (botanic, mineralogy, paleontology, planetology, zoology, petrology), scientific and technological assets, numismatic assets and musical instruments. The overview of the composition of cultural heritage assets of universities' museums has been recently recognized by the Italian Ministry of Education, University and Research (MIUR) as pivotal for students to build up a future knowledge society with a clear identity of territories and civil consciousness. The recent research of Mozzoni and Fanelli (2015) has given a snapshot on the im-

portance of the interplay between university museums and third mission activities. In the last ministerial evaluation over the quality of public engagement activities, Italian universities have self-evaluated the presence of museum hubs and networks as tools to protect, restore, research and expose their cultural heritage assets for inclusive societies. According to this study, a survey has been sent to Italian universities (71), collecting 41 surveys filled and 29 Italian universities declared to have cultural heritage assets. Consequently, the passage to an accrual accounting system has posed the problem of the evaluation and measurement of the value of such cultural heritage assets (Chiaravalloti, 2014). Summarizing, universities are becoming aware of their role of sustainable development and social value creation of societies, and such development can be implemented towards the inclusion of the societies in process of knowledge transfer. The knowledge transfer may assume several forms, and university museums are essential in carrying on research and third mission activities. In the meanwhile, universities are becoming more subjected to performance measurement appraisal and this can be translated in actions to govern, control and plan third mission activities and social impacts.

The transition towards accrual accounting implied universities to make efforts in the evaluation and monetarization of their cultural heritage assets, and in the most cases, this has implied a renovate vigor or a marked refuse to the valorization of such assets (Liguori, Sicilia, & Steccolini, 2012).

1.3 The role accounting disciplines in the theories and practices of cultural heritage assets

The role of accounting scholars in measuring scientific, cultural, artistic and heritage assets is not recent (A. Barton, 2005; A. D. Barton, 2000; G. D. Carnegie & Wolnizer, 1995; G. Carnegie & Wolnizer, 1999; Micallef & Peirson, 1997; Rentschler & Potter, 1996). Recognising and measuring public goods as assets elements has been addressed by several scholars. Scott (2010) investigated the relation between the nature of public goods of public cultural heritage. In the work of Adam et al. (2011), authors examine the norms and practices for infrastructure, art and heritage assets in six cities, across three European countries, to determine how the national norms of accrual accounting compared with each other, and with IPSAS, and how the practices in each city compared with the norms. About IPSAS 17, for instance, the work of Aversano and Christiaens (2014) proposes questions about the importance of stakeholder and user inclusion on the choice of accounting criteria to apply during the valorization. The work of Biondi and Lapsley (2014) investigates the interplay between transparency, good governance and evaluation of heritage and cultural assets. Finally, the recent work of Ellwood and Greenwood (2016) frames the problem of recognition and measurement within the role that is played by accounting in shaping the reality (Hines, 1988). In particular, they tested how the evaluation of e-

conomic value of assets that were primarily held for their cultural properties, may affect the perception of the cultural value of the item observed.

Biondi and Lapsley (2014) discussed that neither the IASB or the IPSAB had specifically defined heritage assets, even if IPSAS 17 depicts a taxonomy over the heritage assets stating "some assets are described as heritage assets because of their cultural, environmental or historical significance"(IPSAS, 17). The author concludes "that no single, formal, agreed definition of the concept exists, but it is possible to identify some common features that heritage assets have: they usually have no purchase price or relevant acquisition cost; their public value (in cultural, environmental, educational and historical terms) is not reflected in a financial value based purely on a market price; usually there are prohibitions or restrictions on their disposal by sale; they are irreplaceable and incomparable; they have a long-lasting useful life; they have non-rival and non-excludable consumptions attributes, so they may be regarded as public goods" (Biondi & Lapsley, 2014). Concluding, the accounting and accountability of cultural heritage assets may influence not just only the public financial reporting representation, but also the perception of stakeholder towards the value that universities give to such assets. In that sense, the role accounting is crucial to shape the reality that universities want to create towards a strategic orientation of their museums. On contrary, the accounting practices may imply universities to the mis-adoption of such accounting principles when they do not consider heritage assets as a source of competitive advantage of universities and territories, as well. For instance, IPSAS 17 states "these assets are rarely held for their ability to generate cash inflows, and there may be legal or social obstacles to using them for such purposes."

1.4 Methodological implications

The paper is designed as an empirical paper that first aims at describing the state of the art of Italian universities' museums using an accounting perspective. Secondly, the paper shows through the application of multiple correlations the existence of links between the book value of cultural heritage assets and core features of universities.

The sample includes the totality of Italian Public University recognized by MIUR in 2017 (n=67). The sample excludes distance-learning universities as presumably they are not founded with the purpose of incentivizing local proximities, but on the contrary to let the access at university education virtual and accessible (Step 1). Step 2 regarded the transition to accrual accounting and for such purposes, the paper includes only those universities that have experienced the accrual accounting transition for at least two years. The study includes universities where accounting information was easy to be identified and retrieved using their public website, especially, researchers browsed the section dedicated to financial reporting herein the mandatory partition called Transparent Administration, introduced in 2012 by the Anticor-

ruption Authority to govern the transparency and to let available to stakeholders' information and news about public administration (Law 190/2012 and Legislative decree 33/2013). Step 3 regarded in the deep the analysis of financial reporting (years 2015 and 2016) and we included in the analysis the composition of assets, and more deeply the total of tangible assets and the book value of the amount disclosed in A) II.4 called *Book heritage, artworks, antiquities and museum assets*, of the scheme provided by the Italian Ministry of Education and Research (MIUR) to account assets and liabilities. We excluded for the final sample those universities that disclosed a book value equal to zero for the heritage assets. The final sample is composed by 52 observations. Step 4 regarded the documental analysis of the notes of the financial statements, where university managers narrated the logic of depreciation and amortization of the assets. The documentary analysis has been also carried out on supportive material such websites, sustainability reports and social report. According to the ministerial classification of universities, the final sample is composed as reported in the following table.

Table 1.1 Composition of the sample

	Large	Medium	Small	Total
Number of public universities in the sample	24	18	10	52 (77.6% of the total Italian Public Universities)
Number of students enrolled during the academic year 2016/2017	947.573	211.700	130.276	1.289.549

Source: authors' elaboration.

Moreover, the study examines the representativeness of the book values over the total of tangible assets, the increase (revaluation) or decrease (impairment) registered during the period. We would like also to investigate the relation existent between the such "markets" and universities, as such we included the number of students as potential users of such services (not in terms of potential financial contribution received, but in terms of social impacts and public engagements) and the number of visitors of museums (by Region). While the data over students has been collected using the ministerial register of students (accessed in November 2017, called *Anagrafe Studenti MIUR*), the data pertaining to museums' visitors has been collected through the ISTAT database and these data are related to a survey conducted in 2015-2016. We used the number of museums visitors of 2014 to estimate the market potential for universities' museums. Finally, the study considers the historical roots of universities retrieved by the year of foundation. Last, we collected and retrieve information about universities museums and universities museums hubs, systems and museums centers from the university websites and department websites.

Calculations have been made using R and R Studio.

Table 1.2 Descriptive statistic

Variable	mean	sd	Unit
NO_MUSEUMS	4.69	6.18	Number
NO_STUDENT_15_16	24152.69	21186.00	Number
NO_VISIT_MUSEUM_REGIONAL	8512993.42	8204501.16	Number
Delta_heritage_assets_15_16	393006.44	1747751.45	Euro
Book values heritage assets 2015	14875070.60	72565809.88	Euro
Book values heritage assets 2016	15268077.05	72528646.00	Euro
Proportion heritage/tangible_15	0.064	0.14	Ratio
Proportion heritage/tangible_16	0.071	0.14	Ratio
YEAR.OLD	302.33	318.89	Years

Concerning the university museums involved in our analysis, we considered 244 museums sites. We followed a classification of the museums following the taxonomy provided by UNIMORE and other networks, and ERC classification. In particular, we counted:

- 31 among botanic garden, herbaria and astronomic observatories;
- 151 among natural and life sciences museums;
- 40 among social sciences and humanities museums;
- 22 among historical archives and archeological sites.

Just 2 universities have a unique museum with several distinct collections, while the majority has identified an organizational structure of museums hub. Only few universities, 10 out of 52 disclose strategic information about key performance indicators of their museums, such number of visitors, number of pieces moved, number of units, number of opening days, etc.

The next figure shows the scree plot of the relation between number of students and number of museums.

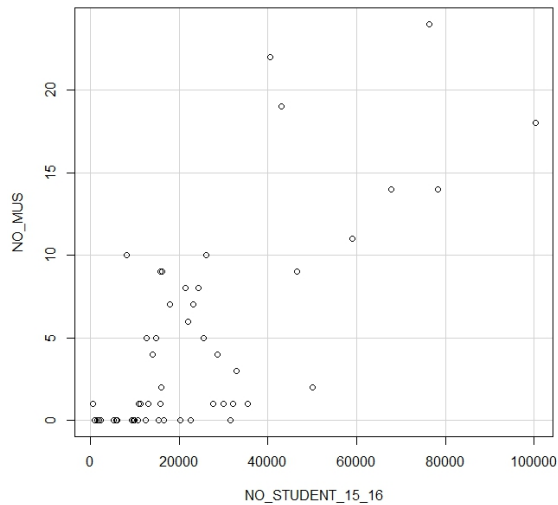


Figure 1.1 Scree plot of universities by number of students and number of museums

1.5 Findings

The overall book value of books heritage, artworks, antiquities and museum assets accounts for 793.940.007 euro at the 31 December 2016, and 773.503.671 euro at 31 December 2015. Interesting results come from the analysis of min and max of the variables included in the sample. Some universities have accounted the cultural heritage assets including the values of historical building, painters and sculptures even they have not an official museum. While there is one university that counts 24 museums and collections. We can observe some discrepancies in the number of students enrolled as we have micro universities and mega athenaei included in the sample, and historical universities versus younger institutions. The oldest has a millennial, while the youngest few decades of operations. Interesting results emerged by the analysis of the book value. The sample include cases where the book value of heritage assets counts less than the 0.006% and institution where such values count 63% of the total tangible assets. In one case, we assisted to a consistent revaluation for more than 10 million euro, related to a mineralogy collection.

Table 1.3 Descriptive statistic, min and max

Variable	min	max
NO_MUSEUMS	0	24

NO_STUDENT_15_16	488	100.280
NO_VISIT_MUSEUM_REGIONAL	518.242	24.603.998
Delta_heritage_assets_15_16	-485.148,68	10.305.499,60
Book values heritage assets 2015	1.000,00	523.306.345,95
Book values heritage assets 2016	10.886,43	523.354.600,95
Proportion heritage/tangible_15	0,00001	0,63
Proportion heritage/tangible_16	0,00006	0,63
YEAR.OLD	18	1.055

Financial reporting preparers and financial directors explains in the notes of the financial statements that the MIUR¹ imposed to implement a completely depreciation of the values of books, not prestigious as *“they tend to lose value over time”*. While for book heritage, artworks, antiquities and museum assets, they are not subject to amortization because they tend not to lose value over time. In case of relevant revaluation they must update the so-called equity reserve (*fondo di dotazione*), for the same amount. In case of specific need of appraisals, universities may appoint a consultant to execute an analysis of the market value of such assets. In few cases, the final reports of the consultants have been put as attachment to the financial statements. For instance, one university mentioned *“the increase in this so-called non-amortized item is due to an inventory reconnaissance following which is estimated the increase in value that is charged, with a counterpart to the Equity Reserve”* (University number 25 of the sample).

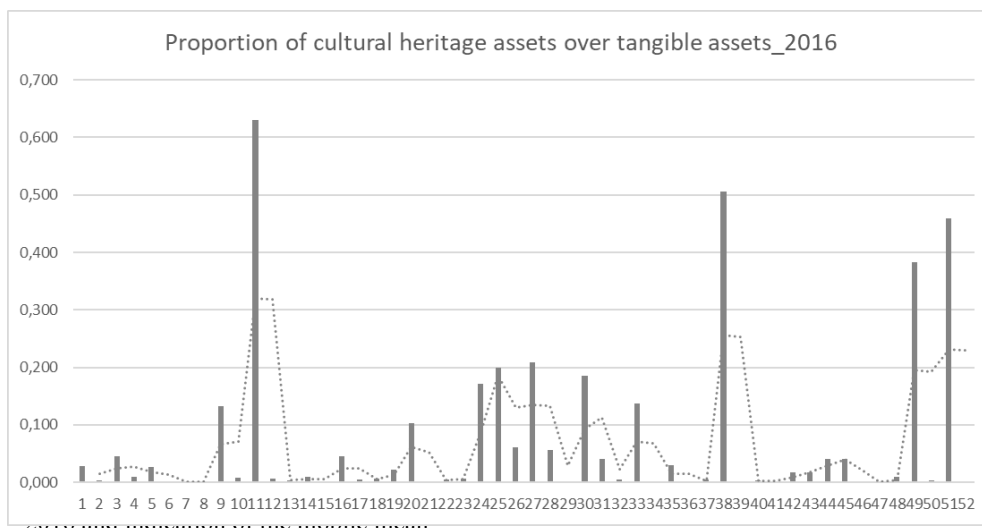
Finally, our study examined the relation between such variables to investigate if historical universities have more universities museums and if this is reflected by the book value itself. Data show a linear relation between historical universities that have more museums and collections, and students. Even though, the book value is not related to the number of museums, it evidences that more book value of cultural heritage assets greater is the proportion over the total tangible assets. In certain cases, in fact, as showed in the previous tables, the relevance of cultural heritage assets may represent the greater part of the total value of tangible assets. The following table and figure reports the data herein commented.

Table 1.4 Multiple correlation

	NO_MUS	NO_STUD	NO_VISIT	Delta_her	Book values 15	Book values 16	Ratio1 5	Ratio1 6	Year
NO_MUS	1.000								
NO_STUD	0.721	1.000							
NO_VISIT	0.107	0.181	1.000						
Delta_heritage	0.033	0.007	0.040	1.000					

¹ Ba.miur.it

Book values 15	-0.001	0.212	0.240	-0.033	1.000				
Book values 16	-0.001	0.212	0.241	-0.009	0.999	1.000			
Ratio15	0.072	0.035	0.330	-0.053	0.635	0.634	1.000		
Ratio16	0.052	0.010	0.313	0.059	0.625	0.627	0.984	1.000	
Year	0.588	0.569	0.065	0.009	0.240	0.241	0.185	0.165	1.000



1.6 Conclusions

The study herein reported shows the state of the art of universities' museums using an accounting perspective. In particular, it evidences the fragmented framework of the Italian universities' museums between micro and mega institutions, where universities manage an average of 4.6 museums each, representing a factual translation of the so-called third mission to create knowledge transfer, public engagement and societal outreach. Due to exogenous forces such as, mandatory performance management systems, accrual accounting duties, the emergence of intellectual capital reporting/integrated reporting, universities are called to recognize and measure all their assets, among which there are cultural heritage assets. The composition of such museums privilege natural and life sciences museums, where the valorization of these assets become crucial. Opposite to the logic of valorization of intellectual capital, the ministerial guideline supports the total impairment of "ordinary" books, while for book heritage, artworks, antiquities and museum assets, it supports the idea that such cultural heritage will not lose the value over time. Unfortunately, due to the lack of a clear accounting principles to apply, universities have adopted two different behaviors, on one side an extreme revaluation of their heritage assets, on

the other side great impairments. In that sense, there is not a significant correlation between the number of museums and the book value of such assets.

Further studies can be conducted on estimating the potential social impact derived by the institutionalization of universities' museums visits for the public engagement and the knowledge transfer (for instance, dedicating ECTS directly to such visits). In addition, our study demonstrates the mortification of the intellectual capital production when the impairment test over the accounting value of monographies and books is equal to zero, even the knowledge transfer occurs through publishing. Consequently, this emphasizes the importance to enrich the positive accounting system of non-financial information to support a user driven perspective of the financial information and its multi-stakeholder perspective.

Summary

Higher Education Institutions (HEIs) are becoming more aware of the role they might play for the sustainable development and social value creation of societies and countries. This social value is expressed by teaching, research and third mission activities. The latter are pivotal for a knowledge society, and exogenous pressure are incentivizing the adoption of managerial duties and the institutionalization of performance measurement. The adoption of accrual accounting method has forced universities to translate and give a value to their cultural heritage assets, that are heterogenous by definition and dependent from the historical roots of the university and the number of students. The book value of the heritage assets does not show adequately this "unexpressed" potential that can impact over public engagement and societal outreach.

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