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Exploring the Economic Nature of Spiritual Values: Results from a Qualitative Meta-analysis

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Exploring the Economic Nature of Spiritual Values:

Results from a Qualitative Meta-analysis

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Abstract

The study performs a qualitative meta-analysis of literature on economic valuation of spiritual values, to possibly assess and attach them a common meaning and content. We apply the qualitative meta-analysis procedure, developed by Atkins et al. (2008), and validated by econometric analysis, to (1) literature on spiritual ecosystem services (SES) valuations studies and to (2) literature on measurement of spiritual capital impacts on economies and markets, with a focus on religious markets. Markets and economies, in fact, are complex social structures, where the spiritual values originated in environmental and ecosystem contexts might change connotation and significance. Results show that when spiritual values are expressed as nature direct consumption or instinctual feedback from nature, they seem to have a use value at personal level and a negative impact at social level (economies and institutions). When spiritual values are expressed as responsibility and connection through nature they have a non-use value at personal level and a positive impact at social level (economies and institutions). In this perspective, qualitative meta-analysis results may offer a preliminary support for a better understanding, design and implementation of quantitative and monetary valuation methods for SES and other spiritual values.

JEL Code: Z12, Q01, Q57, O10

Keywords: spiritual values, ecosystems, spiritual ecosystem services, spiritual capital, spiritual capital impacts on economies and markets, qualitative meta-analysis

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1. Introduction

The study aims at providing a methodological framework for measuring and assessing spiritual values in economic terms. By spiritual values, we intend any value relating to people's thoughts and beliefs, in a broader sense, with a focus on spiritual ecosystem services. Spirituality is an essential dimension of human development and interaction. Economic valuation might capture the complexity of spiritual services and values, which could help shape policies that steer clear of the romanticization and overgeneralization traps, ensuring that cultural and spiritual needs are considered alongside ecological and economic factors. Incorporating spiritual values into policy frameworks can help promote sustainable development and equitable resource allocation. Spiritual and religious values, however, are hard to quantify in monetary or economic terms, and they don't translate well between groups. There are, nevertheless, many approaches to researching spiritual and religious values, their construction and perception, and their connection to resource management, including land use. In order to incorporate spiritual and religious services into their analysis, ecologists and ecological economists are increasingly using historical and social scientific approaches.

Spiritual ecosystem services (SES), in particular, can be defined as a "subset" of cultural ecosystem services that provide intangible benefits to human well-being, such as inspiration, connection to nature, and a sense of place[1]. The spiritual ecosystem services are often intertwined with cultural, religious, and personal beliefs. The spiritual ES provide many benefits, spanning from the sense of connection to nature and a larger universe; from the beauty and wonder of natural landscapes to the symbolic and religious significance of ecosystems, form the personal experiences and emotions associated with nature to subjective beliefs and sense of sacred. The assessment of those benefits and values could provide insights in the understanding of human spiritual preferences and sense of spiritual value and in the management of spiritual ES. These services are often difficult to quantify and measure, making their assessment challenging. The measurement in economic terms of spiritual ES is still an open debate. While traditional economic valuations often focus on tangible, market-based benefits (e.g., food, water, timber), there is growing acknowledgment of the intangible, non-market benefits, including spiritual and cultural values. These values, often deeply rooted in human-nature connections, cultural, religious, and personal beliefs are crucial for understanding the full social welfare and worth of ecosystems and are often overlooked in decision-making processes.

Quantifying spiritual values is complex due to their subjective and often intangible nature. Spiritual ES are inherently subjective and often difficult to express in quantitative terms. This makes it challenging to develop standardized assessment methods. The value and significance of spiritual ES vary across different cultures, religions, and individual experiences. This means that

[1] Ecosystem services (ES) are increasingly recognized as essential for human well-being. The concept of ecosystem services has evolved to encompass a wide range of benefits provided by natural systems (MEEA, 2005). Cooper et al. (2016) report that the MEA contains 335 occurrences of ''spiritual'.

assessment methods must be flexible and adaptable to diverse contexts[2]. Nonetheless, economic analysis has grown in importance as a decision-making tool in recent years to assist in resolving resource allocation concerns. As a result, a sizable percentage of economic assessments rely to varied degrees on models that include information from various research projects, professional judgment, previously published works, and databases. In this stream of research methods, a collection of statistical techniques for aggregating the findings of related research is offered by meta-analysis.

With this perspective, the paper surveys the existing literature on SES assessment, including economic assessment, with the objective to verify the state of the arts, to highlight limitations and opportunities and to provide scientific-based guidance for policy design and decision making. The dataset is then analyzed with a qualitative meta-analysis methodology for eliciting common concepts and aggregating the findings of related research in an insightful analytical framework. The meta-analysis of SES studies follows the procedure by Atkins *et al*. (2008) and is validated and supported by the use of econometric analysis. In addition, the synthesized metanalytical concepts and definitions of spiritual (ecosystem) values are compared and discussed with a twofold source of literature on spiritual values: (1) research on the economic value of spiritual capital and its impact on economic growth and (2) the economic value of religious markets. The comparison is logically driven by the idea to abstract the concept of spiritual values from the (apparently) more direct human spiritual interaction with natural resources to the more complex impact of a system of (spiritual and religious) beliefs on markets and economies.

The paper is organized as follows. Section 2 presents the adopted methodology and results, Those are presented together because the adopted qualitative meta-analysis method is very procedural and develops on clear steps. Therefore, results are produced and presented at every step of the method. Section 3 discusses the findings. Section 4 concludes.

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[2] Nonetheless, scholars have explored various methods:

- Qualitative methods: Interviews, focus groups, experts' elicitation and assessment, local communities involvement, and participatory mapping can provide insights into the subjective experiences, perceptions and beliefs associated with ecosystems.
- Integrated Multidisciplinary Assessment Methods: This framework integrates cultural, ecological, and economic perspectives to assess the full range of ecosystem services, such as provisioning, regulating, and cultural services. Those include ethnographic studies (that can provide insights into the cultural significance of spiritual ES within specific communities); spatial analysis techniques to identify areas that are important for spiritual ES provision; studies combining qualitative and quantitative methods; benefit transfer; remote sensing and GIS, are enabling new approaches to assessing spiritual ES.

2. Methodology and Results

Since the main focus of qualitative research is on how individuals perceive and comprehend their social environments, qualitative methods can help explain surprising or unusual results from quantitative research as well as clarify connections found in these studies. Additional advantages of systematically combining the results of several primary qualitative studies include the potential to produce more thorough and generalizable theory, broaden and deepen current systematic reviews of effectiveness by concentrating on the perspectives of the people the interventions are intended for, and offer insights into the factors that contribute to the success or failure of interventions. Reviews of qualitative research can help guide the execution of programs and interventions in this way. The nature of qualitative research presents difficulties for its evaluation and synthesis, even when integrating the results of studies employing qualitative methodologies seems like a desirable endeavor. The various philosophical presuppositions that underlie interpretivist investigations—such as those that rely on phenomenological approaches—as well as whether or how to combine the results of these studies are important questions. Given the significance of context in the analysis and interpretation of qualitative data, concerns have also been raised about the loss of explanatory context that occurs when the results of several research are combined. Another issue is whether and how to evaluate qualitative research that are part of a synthesis critically. According to some authors, this forces a positivist definition of "quality" on research done in a completely different tradition. Several methods for synthesizing qualitative data have been put forth. Most of them represent either an interpretative or integrative approach to synthesis, while some are based on analysis techniques employed in primary research. Higher levels of analysis, fresh research ideas, and less research repetition are all possible with this synthesis process.

A collection of statistical methods for aggregating the findings of related research is offered by meta-analysis. In the paper we adopt the qualitative meta-analysis procedure suggested by Atkins *et al* (2008). The main steps of the meta-analysis procedure are synthesized and described in Table 1.

Table 1. Qualitative Meta-analysis Steps

Step	Description
Step 1: **Getting started**	This involves determining a research question that could be informed by qualitative research.
Step 2: **Deciding what is relevant to the initial interest**	This implies several distinct decisions and processes, like defining the focus of the synthesis; locating relevant studies; making decisions on inclusion; and quality assessment.
Step 3: **Reading the studies**	This implies becoming as familiar as possible with the content and detail of the included studies and beginning the process of extracting 'metaphors' or emerging themes

Step 4: **Determining how the studies are related**	This implies creating a list of themes or metaphors, juxtaposing them and determining how they are related, using grids or tables to display concepts and themes across all studies.
Step 5: **Translating studies into one another**	This implies comparing the metaphors and concepts in one study with the metaphors and concepts in others.
Step 6: **Synthesizing translations**	This implies proceeding from reciprocal translation to a higher order interpretation, which distils the translations into more than the parts alone imply – a "line of argument" synthesis. There are a variety of ways. In most cases the process of doing is not clearly defined. There appears to be a general acceptance that the synthesis process, not unlike analysis in primary qualitative research, "cannot be reduced to mechanistic tasks" and may, in practice, be difficult to replicate
Step 7: **Expressing the synthesis**	In order to make the results easily accessible to a wide audience, they can be presented in a simple diagrammatic manner. Simplifying the complex interactions, however, while necessary for the expression of the results, is not a simple process and may further reduce the influence of context on the results. Another issue to consider in expressing the synthesis is the uptake of the results into policy, program development and research.

Source: our elaboration from Atkins et al. (2008)

2.1. Steps 1-4

Steps 1-4 are similar and overlap with any (systematic, narrative and descriptive) literature review procedure. In the case at issue. The steps aimed at gathering selected literature on the economics of spiritual values of ecosystem services, examining methodologies, challenges, and potential applications. Studies were selected through a thorough google scholar search in August 2024. The inputted search insights were "*spiritual ecosystem services economic assessment*", "*spiritual ecosystem services economic values*", *spiritual ecosystem services monetary valuation*", "*spiritual ecosystem services assessment*". The main objective of the search was gathering information on the state-of the arts.

The search produced around 20K results that were obviously screened by selecting the most significative papers (the first and more recent entries), by reading the paper/abstract and by retrieving the significant references signaled by those papers. After such previous selection, additional papers have been added when quoted in the previously scrutinized papers. Selection criteria are mostly based on (1) the capability of the paper to convey an answer to the key question

(how to assess spiritual values in qualitative, quantitative and monetary base?); (2) with some exception, the scientific relevance of the journal and (3) a relatively recent publication date that covers a sufficient long time to understand research trends (from 1999, 25 years)

This has been a very time-consuming activity since the topic is orthogonal to many scientific disciplines, spanning from economics to psychology, from medicine to ecology and so on. The main selection criterion lays in the paper addressing of the specific assessment of spiritual ES and not in a broader inclusion of SES in cultural values. What really matters and must be highlighted is the disarray in the definition of the concept of spiritual value of ecosystem services. It is worth highlighting that there is no universally agreed-upon definition of spiritual ES, which can make it difficult to compare and synthesize research findings. This consequently affects the adoption of the related (quantitative, qualitative or monetary) assessment methodology.

For this reason, the 43 papers are selected in a way that: (1) they "cover" a relatively long-time span, to highlight research evolution in the field; (2) they convey concrete concepts and/or assessment of spiritual services; (3) they are applications in both developed/developing and urban/rural contexts. The attempt to differentiate ES types has failed with a strong predominance of marine and coastal ES studies, and general ES when the studies are applied to sites and areas.

The papers were scrutinized, read, included or selected according to the criteria explained above. Given the heterogeneity of the material, the organization of information followed the papers (comparable) main core: (1) the ecosystem type, (2) the assessment method and (3) the definition of spiritual value because of the adopted assessment method. Table 2 (in ANNEX 1) synthesizes the main findings and represents the SES dataset with reviewed literature input[3].

INSERT TABLE 2

The surveyed literature on the economics of spiritual values of ecosystem services highlights the need to go beyond traditional economic valuation frameworks to capture the full range of benefits provided by ecosystems. In the surveyed literature, most studies (17) focused on spiritual values in marine and coastal ecosystems and for all ecosystems (12). Four studies attempted to measure spiritual values in forests, 2 in gardens; 2 in lakes and riparian ecosystems. The remaining are applied in terrestrial (1), urban sacred sites (1), wildlife (2) and mixed ecosystems (2, like terrestrial and riparian). Most studies (27) used qualitative valuation methods. Two 2 studies report values measured in monetary terms. While economic valuation is crucial for decision-making and

[3] The survey of the literature has spurred the discussion of the following three main issues. First, there exist a high level of complexity in a commonly recognized definition of SES that paves valuation methodologies, including economic and monetary. Without a clear definition, it is not possible to measure, especially because spiritual experiences are highly personal and vary widely across cultures and individuals. It's difficult to quantify the value of something that is so subjective. Experts in the field can provide estimates of the value of spiritual services based on their knowledge and experience. (see table 1 last colum). Consistent classification and unambiguous descriptions for SES are required for the proper development of the methodologies. A combination of methods may be necessary to provide a more comprehensive understanding. Integrating monetary and non-monetary methods is highlighted. While monetary valuation of ecosystem spiritual services is challenging, it can be a valuable tool for decision-making and resource allocation. By recognizing the importance of these services, we can better protect and manage our natural environments.

resource allocation, it can be challenging to assign a monetary value to intangible, subjective benefits. Five studies used quantitative analysis. Nine studies used a combination of qualitative and quantitative methods[4].

2.2. Step 5

Steps 5 and 6 are the most challenging steps. As for step 5, translating studies (that highly differ for methodologies and applications), into one another implied revising each paper and elicit, for each paper, a keyword that defines "spiritual value/s". In fact, quantitative meta-analysis of economic valuation studies, uses a common variable (willingness-to-pay), expressed in measurable (monetary terms). The context of the present analysis implies translating studies into one another by finding a credible, common semantic for spiritual values, that cannot be expressed in monetary terms. However, they are synthesized keyword that is interpreted as a synonym of their value, and therefore a synonym of the spiritual values of nature. This allows comparability. Table 3 reports the findings.

Table 3: Synthesis of Spiritual Values Concepts

Spiritual Value as	**Number of Studies**
Connection/Sense of Belonging[5]	11
Natural site/element[6]	7
Responsibility of conservation[7]	6
Religious induced beliefs in nature/Religious experience in nature[8]	5
Sense of well-being	4
Transcendence	4

[4] More specific ES associated to spirituality are forests and marine/coastal areas, that is, areas linked to water. Spiritual ecosystems are considered as values because the spiritual ecosystem services conveys well-being, welfare, benefits, even if declined and defined in many different dimensions and facets: inspiration, freedom, sense of transcendence, interconnection with the natural element (i.e. ocean, forest), sense of sacred conveyed by the site located in the nature, or in the urban context, implementation of the concept of "creation", symbolic ancestral origin of humanity, synthesized by the myth. Personal or social assessments of benefits, wherever geographically or ecologically applied, are values.

[5] This is expressed in different forms, with the main meaning of nature generating a sense of spirituality that bonds communities, people, capabilities, and societies as a whole

[6] As an identification with the natural elements, forests, seas, oceans, gardens, wildlife, trees,

[7] In one study it is measured: the WTP for nature conservation is 6% lower (therefore around 46 Euro bid instead of average 49) if the respondent is Catholic. This is not the Catholic does not like the natural resource but because think one should not derive warm glow, impure altruism from fulfilling their duties.

[8] In one study it is measured; 80 USD, retrieved Mean values (int$ 2020/ha/year) per ecosystem service – biome combination

Intangibility	3
Inspiration	2
Fulfilment	1

Translating studies into one another involves grouping the values in a logically and insightfully consistent way. We can highlight four main categories. One category (Connection) refers to defining (and measuring) spiritual values as a broad sense of belonging and connection with nature, with humanity, with the community, with other individuals. Another category (Nature) refers to spiritual values that identifies with nature and natural sites, in a more concrete way, as places/sites or natural elements and ecosystems that inspire religiosity or where religiosity is practicable/implementable ("*Natural site/element*" and "*Religious induced beliefs in nature/Religious experience in nature*"), signaling nature as an activator of religious beliefs and/or practices. A third category (Responsibility) refers to relates to spiritual values as consciousness driven sense of nature responsibility of conservation. Finally the fourth category (Instinctual Feedback) groups all variables that identify spiritual values as instinctual transcendence, fulfilment, inspiration, intangibility, sense of well-being.

Once the main different categories are identified, in order to translate studies into one another, we use correlation analysis to find links among the selected categories.

Table 4. Correlation Matrix

	Connection	**Instinctual Feedback**	**Nature**	**Responsibility**
Connection	1.00			
Instinctual Feedback	-0.32	1.00		
Nature	-0.45	-0.42	1.00	
Responsibility	-0.23	-0.22	-0.31	1.00

As shown in Table 4 the four categories are independent from one another. The weakest link (negative correlation) is between Responsibility and Instinct. The strongest negative correlation is between Nature and Connection.

A further effort in order to translating one concept into another is subdividing the four categories into two main conceptual ones: (1) use values and (2) non-use values. The spiritual values identified by studies, and synthesized by our qualitative meta-analysis as Connection and Responsibility can be interpreted and redefined as non-use values, since the spirituality inspired by ecosystem services refer to a sense of connection and bonding with people and nature. Responsibility, even more clearly, refers to the moral imperative of nature conservation. Both definitions/measures/concepts embody nonuse values since they of

The spiritual values identified by studies, and synthesized by our qualitative meta-analysis as Nature and Instinct convey a strong use value connotations, since, for the first category the value

is parametrized and measured as the use of nature for religious practices or the personal sense of well-being that spirituality perceived in nature generates. In addition, spiritual ecosystem services, bring values that refer to a set of personal, instinctual factors.

2.3. Step 6

For the last step we use econometrics and adopt a probit model for each value concept (multivariate probit regression did non produce presentable estimates) for the sake of the synthesis of the translation. The objective is assessing, for validation, the impact of ES on the definition of the spiritual value. A (general) relationship can be modeled as follows:

Equation (1) $Pyi=1|xi=G(xi, \beta)$, for some functions $G(.)$.

Equation (1) says that the probability of having $yi = 1$ (a specific spiritual value among the considered ones) depends on the vector xi containing variables (type of ES) that positively or negatively affect that probability. The probit model is then estimated by maximum likelihood with STATA16. Results are presented in Table 5.

Table 5. Probit Results

	Non Use Value		**Use Value**	
Explanatory Variables	**Dep. Var. Connection**	**Dep. Var. Responsibility**	**Dep. Var. Instinctual Feedback**	**Dep. Var. Nature**
All ES	5.29	-0.16	0.25***	-0.67**
Forest	4.45***	0.37***	-0.37	- 0.25
Gardens	4.86		0.84	0.43
Marine	4.10***	0.29	0.84**	-0.3
Riparian	5.29			1.51
Constant	5.29*	-1.22*	-1.22*	-2.31*

* 1% statistically significant, ** 5 % statistically significant. *** 10 % statistically significant

Selected econometric results are supportive of the metanalysis. The probability that spiritual value is represented by one of the four main synthesized concepts negatively/positively depends on the type of the selected ES. This helps illustrate what is the (spiritually perceived) value for each selected ES. For instance, an interesting result refers to the impact of forests. Forests positively affect the probability that spiritual values are expressed as non-use values (connection and

responsibility) and negatively affect the probability that spiritual values are expressed as use values (instinctual feedback and nature).

Additionally, for the sake of the performance of step 6, and in order to validate the findings, we compare the results with literature reviews on studies that measure spiritual values as spiritual capital (broadly defined as the set of the capacities that are generated through spirituality**)** impact on economies and markets, with a focus on religious markets. Markets and economies are complex social structures, where the spiritual values originated in environmental and ecosystem contexts might change connotation and significance. Table 6 (in ANNEX 1) shows results of a systematic literature review on the economic valuation of the impacts of religion(s) and spiritual capital on the economy and economic growth and represents the dataset with reviewed literature input. In the broader definition, spiritual capital is a particular form of social capital that is associated to spiritual membership. This is assumed to have an impact on economic performance and growth[9]. It is worth highlighting that most studies use a common (updated) dataset The measures of religiosity are mostly drawn from the Barro–Mcleary Religious Adherence Dataset (RAD) (2006), and are the population averages for countries in our dataset of (1) weekly church attendance, (2) monthly church attendance, (3) weekly prayer, (4) belief in heaven, (5) belief in hell, (6) belief in an after-life, and (7) belief in god. The measured value is the fraction of people attending, the fraction who pray, or the fraction who hold the belief. As reported in the methodology Column of Table 6 (*what is valued and how*), the applications imply use of very large datasets, applied in different contexts and countries, with the same key concepts. This makes results very robust and credible.

INSERT TABLE 6

The selected studies present, however, a logical connection and continuity with the analysis performed in the previous five steps with the SES dataset. This is mostly because the impact of religion(s) is ambivalent vis-à-vis development and growth: although religious ideas can foster certain forms of human capital acquisition and labor market participation, studies have found a negative relationship between religious dimensions and both income and gender equality as well as innovation activities. Religious identity has ambivalent effects on economic growth and social cohesion, including institutional trust, depending on the country of application, the structure of the economy, religious adherence, and the way religiosity is measured.

[9] Studies were selected through a thorough google scholar search in November 2024-January 2025. The inputted search insights were “spiritual capital and economic impacts”, “spiritual capital”, “economic valuation of the impacts of religion”, “economic valuation of the impacts of religion(s) and spiritual capital on the economy and economic growth”; “economic performance and religion”. The search produced around 80K results that were obviously screened by selecting the most significative papers (the first and more recent entries), by reading the paper/abstract and by retrieving the significant references signaled by those papers. Selection criteria are mostly based on (1) the capability of the paper to convey an answer to the key question (mostly producing empirical results); (2) with some exception, the scientific relevance of the journal and (3) a relatively recent publication date that covers a sufficient long time to understand research trends (from 1997). This has been a very time-consuming activity since the topic is orthogonal to many scientific disciplines, spanning from economics to psychology, from medicine to ecology, sociology and so on. However, a bulk of 29 papers producing estimates, (therefore values), has been identified. The papers were scrutinized, read, included or selected according to the criteria explained above. Given the heterogeneity of the material, the organization of information followed the papers (comparable) main core: (1) the study identification (2) the topic and assessment method and (3) the empirical findings

Such empirically tested ambivalence may reflect and be reflected in the meta-analysis performed so far. Therefore, we attempt to cross main findings for validation. In fact, also in the case of the spiritual capital and its impact on growth and economies it is possible to highlight the main categories of spiritual values, as elicited in Table 4. This is synthesized in Table 7

Table 7. Validating the Qualitative Meta analysis with Studies on Spiritual Capital and Economic Performance

	Non-Use Value		**Use Value**	
Study identification and data	**Connection**	**Responsibility**	**Instinctual Feedback**	**Nature**
Barro, R.J. and McCleary, R.M. (2003) 81 Country Surveys, 1981 to 1999	Economic growth negatively responds to church attendance (-1,4% of growth rates of real per capita GDP).	-	Economic growth responds positively to religious beliefs, notably beliefs in hell and heaven (+1.7% and + 0.3% of growth rates of real per capita GDP respectively	-
Elgin, C., Goksel, T., Gurdal, M. Y., & Orman, C. (2013). 57 countries	-	-	Negative link between belief in afterlife and the level of government spending to GDP ratio across countries (up to 8%).	-
Kirchmaier, I., Prüfer, J., & Trautmann, S. T. (2018). sample (7000 observations gathered between 2008 and 2012) of the Dutch population	. -	Religious people are less accepting of unethical economic behavior (e.g., tax evasion, bribery)	-	-
Bénabou, R., Ticchi, D. a nd Vindigni, A. (2015). Religion and innovation. American Economic Review 105(5), 346–351. Use of five waves (1980, 1990, 1995, 2000, and 2005) of the World Values Survey. Aound 90K observations.	Regularly attending services negatively affects the respondent attitude towards the statement on predominance of science of faith and the attitude towards the statement that science and innovation make the worlds better off	-	-	-
Fungáčová, Z., Hasan, I., & Weill, L. (2019). Organization, 157, 452-476. Using World Values Survey data covering 52	Religious individuals tend to put greater trust in banks	-	-	-

countries during the period 2010–2014				
Rossi, M., Brañas, P., & Zaclicever, D. (2008). A Latin American database of twenty thousand respondents from 2004	Trust toward others is positively correlated with religious observance and with Catholic affiliation.. Catholicism encourages both trust in institutions and towards others.	-	-	-
Schaltegger, C.A. and Torgler, B. (2010) Dataset with more than 17k observations, with European Values Surveys, for 16 countries, third wave	-	Work ethic is influenced by protestant education Protestants, education and religiosity explain hard work.	-	-
Neustadt, I. (2011). Sample of around 7000 Suisse respondents in 2008)	-	Estimated marginal willingness to pay for redistribution (WTP) is shown to increase with a higher degree of religiosity (12.83 CHF).	-	-
Deller, S.C., Conroy, T. an d Markeson, B. (2018) US (county data)	Communities with a large concentration of religious congregations (spirituality measured as frequency to church services) have a correspondingly higher level (10%) of small business activity	-	-	-
Bénabou, Roland, Davide Ticchi and Andrea Vindigni (2013) World Value Surveys, around 100K observations	-	-	For US, believing in God is associated to a decrease in per capita patents number equal to 10.16%. For the other 152 countries, believing in God is associated to a decrease in (log) per capita patents number equal to 5.56%.	-

Source: our elaboration

When spiritual values are expressed as nature or instinctual feedback from nature they seem to have a use value at personal level and a negative impact at social level (economies and institutions). When spiritual values are expressed as responsibility and connection through nature they have a non-use value at personal level and a positive impact at social level (economies and institutions.

It seems that the step from personal spiritual consumption of SES to a social dimension embodies the concept of religion (that is a more structured and social concept than spirituality) and this has an impact on society through economic performance indicators.

At social level, spiritual values affect economic dimension aspects and can be measured in quantitative economic and monetary terms. For example, the use value, expressed of spiritual value is evident in the religious markets, where the preferences for the "use" the religious facilities (normally sanctuaries and pilgrimage sites) are revealed through the purchase of the travel, as shortly reported in Box 1.

Box 1. Spiritual Values and Religious Tourism Markets

According to the World Tourism Organization, one in three travelers are religious tourists, and between 300 and 350 million pilgrims visit the most important religious sites in the world annually. Religious tourism is one of the most significant travel markets. Even though they only make up one-third of all tourists, religious tourists appear to have a considerable impact on the GDP and the creation of jobs. According to Oxford Business Group's "*The growth trajectory of religious tourism in key markets*," religious tourism is expected to generate worldwide revenue earnings of up $41 billion by 2033. Thus, religious tourism is a vital component of a country's economy. The creation of jobs at the location and the expansion of related businesses related to religions contribute to the overall improvement of the religious site's economy. Religious tourism centered on a nation's historical and religious legacy accounts for a sizeable portion of its overall tourism industry in many nations. Religious tourism is boosting investment in logistics infrastructure, preservation, and wider recreational opportunities globally in addition to boosting local economies and employment creation.

Sources: our elaboration from Mahanti (2022)

3. Discussion

Results show, among other insights, that the step from personal spiritual consumption of SES to a social dimension embodies the concept of religion (that is a more structured and social concept than spirituality) and this has an impact on society through economic performance indicators. In particular, at social level, spiritual values affect economic dimension aspects and can be measured in quantitative economic and monetary terms.

Value in spirituality is not solely consequentialist but includes duties and mostly shared values (Cooper *et al,* 2016). This point is verified by the metanalysis results, despite the careful conceptual and methodological caveat expressed in the performance of the metanalytical study. This includes the existence of a high level of complexity in a commonly recognized definition of SES.

The SES values, in fact, even at the most primordial level, nature/based/spirituality, consumed and performed without social substrates, already contain use and non-use elements. Nonuse dimensions of SES refer to responsibility and connection, not only to and towards nature and ecosystems but also to and towards the communities populating those ecosystems. When spirituality becomes religious, both duality and value sharing remain. For instance, religion is good for the development of attitudes that are conducive to economic growth, and, in particular Christian religions are more positively associated with attitudes that are conducive to economic growth, as a responsibility and connection to society and communities. On the other hand, Islam has relatively little influence on most economic or social performance indicators. For Muslim economies, religion does not appear to be a useful explanatory variable on economic growth. Such evidence should be explained by further multidisciplinary research. However, this might signal a different approach to spirituality as synthesized in Islam religion than Catholics. Spirituality inspiring Islam may be more driven by personal use values (as instinctual or nature based), as highlighted in the metanalysis. The literature surveys present heterogeneity between low- and high-income countries as an important effect of religion on income. In fact, authors find a positive effect of religion on income for high-income countries, and a negative effect for low-income countries.

The qualitative meta-analysis offers an explanatory conceptual framework and value definition to such evidence. The role of spiritual values in indigenous communities' relationships with the environment, for instance, may differ from the role of spiritual values in Western society. In this perspective, monetary valuation may not be the most accurate valuation method, since it may not capture fundamental dimensions of such benefit or only capture it partially (e.g. travel costs towards a religious site in the wilderness/nature). Monetary measurement of (revealed and/or declared) preferences for spiritual ES and values might not conceptually (and therefore methodologically) consider that preferences for spirituality are quite complex to retrieve, elicit, describe and cover multifaceted dimensions. It is not a case that the world ES database only contains a study with monetary valuation of SES (Brander et. al, 2024). In this perspective, qualitative meta-analysis may offer a preliminary support for a better understanding, design and implementation of quantitative and monetary valuation methods of spiritual values, including SES[10]. The differentiated values and concepts elicited from the quantitative meta-analysis highlight the need to find a common semantic on what we are valuing and on how we apply those assessments for policy conservation and resource management[11].

[10] Economic and monetary valuation of spiritual values, in fact, is a complex challenge. Spiritual ES, for instance, refer to the intangible benefits that humans derive from ecosystems, often related to cultural, religious, or spiritual beliefs. Spiritual services are often not traded in markets, making it challenging to use traditional economic valuation methods like market prices. Assigning monetary value to spiritual experiences can be considered disrespectful or exploitative, as it can reduce them to mere commodities. In addition, quantifying the benefits of spiritual experiences can be difficult, as they may involve intangible outcomes like peace, tranquility, or a sense of connection to nature. Attempts to apply contingent valuation for assessing the WTP to protect sacred areas not necessarily capture the spiritual ES values, expressed in economic terms, since the WTP can be motivated by cultural, existence or bequest inspiration. Moreover, the value of ES often extends beyond immediate economic benefits. They provide long-term ecological, cultural, and spiritual services that are essential for the well-being of future generations and may differ across time and space.

[11] Given the qualitative nature of the evidence, the lack of a single definition for spiritual well-being, small sample sizes and the limited number of studies, the evidence for spiritual benefits of nature experiences is not conclusive. There is a cultural bias towards Western society among the reviewed studies, despite the likelihood that the spiritual benefits of interacting with nature will vary significantly between cultures. Also, the evidence for spiritual benefits is thus far largely limited to wilderness settings, which may have narrowed the range of benefits that have been studied

5. Conclusion

The study as performed a qualitative meta-analysis of literature on economic valuation of spiritual values, to possibly assess and attach them a common meaning and content. We have applied he qualitative meta-analysis procedure, developed by Atkins et al. (2008), and validated by econometric analysis, to (1) literature on spiritual ecosystem services valuations studies and to (2) literature on measurement of spiritual capital impacts on economies and markets, with a focus on religious markets. Markets and economies, in fact, are complex social structures, where the spiritual values originated in environmental and ecosystem contexts might change connotation and significance. Results have shown that when spiritual values are expressed as nature direct consumption or instinctual feedback from nature, they seem to have a use value at personal level and a negative impact at social level (economies and institutions). When spiritual values are expressed as responsibility and connection through nature they have a non-use value at personal level and a positive impact at social level (economies and institutions).

In this perspective, qualitative meta-analysis results may offer a preliminary support for a better understanding, design and implementation of quantitative and monetary valuation methods for SES and other spiritual values. Further research would involve a follow up of the quantitative meta-analysis, with econometric analysis of the relevant key variables, selected case-by-case. More in general, further research should aim at investigating the boundaries and insights that are fundamental to define and measure spiritual values. The definitory variances and differences highlight the difficulties to understand what to measure, since it is difficult even to define the object of measurement. This stresses the very personal and experiential content of the spiritual values, and beyond limitations and technical assessment difficulties, stimulates to pursue multidisciplinary approaches for the assessment (in quantitative and monetary ways) of ES spiritual values. In this perspective, the paper aims at supporting and frame the above, aware that much work has still to be done along those lines

This is fundamental for efficient management of natural resources, as the importance of nature-based solutions for addressing social challenges becomes increasingly recognized and the need for a comprehensive understanding of SES has grown.

Governments and organizations are increasingly recognizing the importance of incorporating spiritual values into decision-making processes Incorporating spiritual values into conservation planning can help ensure that ecosystems are protected and managed in a way that respects cultural and spiritual needs. Economic assessments can assist in making informed decisions about land use, development, and resource allocation. Recognizing the importance of spiritual values can foster greater public engagement in environmental issues. Incorporating spiritual values into policies can provide a more comprehensive assessment of the costs and benefits of development projects. Spiritual values can play a crucial role in fostering community involvement in conservation efforts

Ecosystem spiritual and religious services are hard to quantify in monetary or economic terms and do not translate well between communities. There are, nevertheless, more thorough approaches to researching spiritual and religious ES, their construction and perception, and their connection to resource management and land use. The need of taking into account intangible advantages while making decisions is emphasized by the literature on the economics of spiritual values of ecosystem services. Even while there are still obstacles to overcome, new approaches and a greater

understanding of the importance of spiritual experiences present chances for more thorough and inclusive evaluations of ecosystem services. We can better preserve and manage the natural resources and natural heritage for future generations if we recognize and appreciate the spiritual aspects of nature.

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ANNEX 1.

Table 2. Synthesis of the Literature Review

Study	Ecosystem Type	Assessment Method	Value definition and (qualitative and quantitative) assessment
Brander et al. (2024)	Lakes and rivers	Literature review of the Ecosystem Services Valuation Database (ESVD)	**80 USD** Retrieved Mean values (int$ 2020/ha/year) per ecosystem service – biome combination Under-representation of spiritual services valuation studies and estimated values
Nevzati et al. (2023)	Marine and Terrestrial	Panel of local experts in a case study	Spiritual values as symbolic values associated to gardens and green spaces
Duha et al. (2023)	All ecosystems	Literature review	Spiritual values as religious beliefs and practices, particularly through Christian education, shape environmental awareness and responsibility within communities by instilling values of nature preservation and involving the younger generation in conservation efforts.
Onofri and Boatto (2020)	Terrestrial/vine	Anthropological search and statistical analysis	Spiritual value is the sense of symbolic ancestral origin of humanity and belonging to humanity, synthesized by the myth
Cheng et al (2019)	All ecosystems	Literature review of assessment methods	Spiritual values as religious induced beliefs to nature assessed by questionnaires and Interview, questionnaire, expert-based and PGIS methods
Sangha et al (2019)	Coastal and Marine ecosystems	Conceptualizing Value Transfer (North Australia area)	Spiritual values defined as well-being benefits that indigenous derive from ES. Measured as replacement costs for the benefits that indigenous communities drive from accessing the coastal and marine resources.
Bullock et al. (2018)	Coastal ecosystems	Stakeholders involvement in three workshops, including round table discussions preceded by short presentations by the research team, and followed by participatory mapping and attribute rating exercises. Surveys and Factor Analysis. Case study in Ireland (Balbriggan, Skerries, Donabate, Rush and Malahide)	Spiritual values as intangible values, whose importance is measures as a mean value of 5.3 on a 1 to 6 Likert scale (where 1 = ”not important/not relevant to me” and 6 = “extremely important/relevant to me”).
Sangha et al (2018)	All ecosystems	Six illustrations/Case studies on ES valued by indigenous people in their sites	Spiritual values as derived from a holistic vision of indigenous and local peoples living with nature and containing spiritual basis including capabilities. Spiritual values as opportunities that nature offers to people, and the capabilities

			people develop and maintain through their relationships with nature, allowing to mainstreaming people-nature relationships.
Lowman and Sinu (2017)	Forest	Case Studies	Spiritual values as drivers for conservation
De Lacy and Shackelton (2017)	Urban sacred sites	Case studies	Spiritual values as a sense of transcendence
Rodrigues et al. (2017)	Marine and coastal ecosystems	Systematic Literature Review	Spiritual values measured and mapped by counting spiritual, sacred and/or religious areas – number of religious facilities/areas.
Brown and Hausner (2017)	Coastal ecosystems	Participatory mapping data from five studies conducted between 2011 and 2015 in the countries of Australia, New Zealand, Malaysia, Norway, and the U.S. (Alaska)	Spiritual values as values identified through participative mapping. The coastal areas contain a large share of spiritual ecosystem values, as compared to non-coastal areas across a diverse range of geographic locations, from natural landscapes (Alaska, Norway), to heavily human-modified (Malaysia), to mixed landscapes (Australia, New Zealand).
Pascua et al (2017)	All ecosystems	Place-based, participatory approach (workshops and questionnaires) with indigenous communities in Hawaii	Spiritual values as the benefits derived from sense of connection with the natural world. Spiritual beliefs and practices that allow people to interact with the "mana" (spirituality) of a landscape. Measured as formal ceremonial practices, informal interactions, perpetuation of songs, chants, dances, and prayers of/for place
Small et al (2017)	All ecosystems	Argumentative, discussion paper, critical literature survey. Multi-scalar valuation perspective.	Spiritual values, as other n*on-material ecosystem services*, should be assessed though a focus on *changes* in the ES delivery, thereby reducing the need for a full understanding of what are otherwise extremely complex dynamic socio-ecological systems. Scenarios, which provide narrated and mapped understanding of the future, coupled with dynamic landscape – ecosystem models, offer straightforward means within geographic information systems to achieve this goal.
Cooper et al. (2016)	All ecosystems	Argumentative paper with illustrations on indigenous and rural contexts. Conceptual analysis.	Spiritual values as transcendental values, in that they are fundamental conceptions of the relationships of humans and nature. Sometimes people may not be aware that they hold these values until they are evoked by an apparent threat or until they are elicited by sensitive group work. People may also be reluctant to express them for fear of social embarrassment or shame in talking about religion in public or of ridicule for holding such views in an increasingly secularist society.

			They are revealed by the interpretation of people spiritual evidence and experience, encompassing the ES matrix framework[12].
Bryce et al. (2016)	Marine	Interviews, participatory analysis, factor analysis	3.85±0.95 on a Likert scale (0 = strongly disagree, 5 = strongly agree), where spiritual values are a sense of belonging to something greater than the self
Chan et al. (2016)	All ecosystems	Discussion, argumentative paper	Spiritual values as relational values, that are the connections between humans and nature, emphasizing the cultural, spiritual, and emotional significance of the natural world per se and not as instrumental to humans.
Ranger et al. (2016)	Marine protected areas	Multi-Criteria Approaches (MCA) and Community Voice Method (CVM), (interviews, stakeholder analysis)	Spiritual values as paper of community views, values and knowledge
Fish et al (2016)	Marine ecosystems	Mixed approach (questionnaire survey, qualitative mapping, group discussion and a participatory arts-based research process, application in Devon)	Spirituality as derived from experiencing nature (a "consumption" experience), measured as 2.52 (on a 5 points Likert scale, where 1 is I strongly agree
Irvine et al (2016)	All ecosystems	Argumentative paper, discussion paper	Spiritual values as shared values, where shared values as normative constructs are unlikely to equal the sum of individual preference. Spiritual values as a collective experience, independent from the individual preference for spirituality
Pike et al (2015)	Marine ecosystems	Q-methodology Application in Pacific Rim National Park, Vancouver Island, Canada and an Area of Outstanding Natural Beauty in Chichester Harbour, UK.	Spiritual values relate to a narrative of seeing the natural world as a space for spiritual life as a form of life quality; be that a religious experience, or psychological growth. Sometimes these thoughts are centered upon more recognizable concepts such as worship and God, but these are less important than the purely spiritual strength this viewpoint contends comes from the natural world.
Gould et al (2015)	All ecosystems	Interview Protocol design for CES valuation. Applications pilots in Hawai and Canada, British Columbia. Specific question definition for spiritual	Spiritual values as peculiar inspirational elements retrieved in areas and places. Hawaii: a diversity of respondents recognizes spiritual and cultural heritage values inextricably linked to upland forests.

[12] Example: *"I value this place because …", the 'becauses' covering a diversity of potential values. Under the category of spiritual, a sample of texts of such sentences include: "I feel part of something that is greater than myself; feel more connected to nature; I gain perspective on life"*

		values qualitative assessment[13].	
Onofri and Nunes (2014)	Marine Protected Area	Surveys, factor analysis econometric analysis	49 Euro is the WTP for nature conservation. The WTP is disentangled in many motivational components, including " warm glow". Catholics present negative estimated coefficients for warm glow (-0.06), signaling that the conservation of nature is not subject to "nature purchase for moral satisfaction". Spiritual values as categoric imperative to nature conservation.
Fletcher et al. (2014)	Marine ecosystems	Surveys, work focus content analysis (application in the Black Sea)	Spiritual values as informal spirituality associated to informal spiritual connection with the sea. Separate from formal religious experience. (spiritual values expressed by words such as 'infinity', 'peace', 'passion' and 'freedom').
Klain et al (2014)	Coastal ecosystems	Semi structured Interviews to people who play an active role in marine resource management and/or have livelihoods that rely on the ocean (application in British Columbia)	Spiritual values are defined by 80% of respondents as a strong interconnection with the ocean.
Poe et al. (2014)	Coastal ecosystems	Literature Review	Spiritual values as integrated cultural dimensions of human wellbeing in socioecological systems.
Keniger et al. (2013)	All ecosystems	Literature review	Spiritual value as a benefit of interacting with nature
Van Riper et al (2012)	Marine PA	On-site and mailback survey data, analyzed using the Social Values for Ecosystem Services (SolVES) GIS application to incorporate measures of social value and natural resource conditions (Application in Hinchinbrook Island National Park, Australia)	Spiritual values as preferences rank. Spiritual values are defined ex ante in the surveys as "I value these places because they are sacred, religious, or spiritually special to me or because I feel reverence and respect for nature there." Respondents must rank spiritual values with 11 other values attributed to ES (i.e. economic, therapeutic, intrinsic, learning, recreation and so on). Spiritual values are ranked 11 on 12 values.
Tengberg et al (2012)	Marine ecosystems	Discussion paper, case studies (Sweden, Arafura–Timor Seas) where ES are assessed through Cultural Values Model (CVM)and DIVE methodology	Spiritual values as values interconnected with other cultural values and the landscape, biodiversity and traditional practices (like burying in the mangroves).

[13]"*Spiritual value of a place is difficult to define, but generally captures places that are powerful because they inspire you to be aware of forces or entities larger than yourself. This can be the basis for both negative and positive feelings, including things like awe, reverence, humility, and even fear. I know this is a personal question, but if you feel comfortable and would like to, can you speak about experiences of this kind that might be associated with this area?"*

Klain and Chan (2012)	Marine ecosystems	In-person interviews with narrative-based methods and appropriate probes, spatial analysis (Application in Vancouver Island in British Columbia, Canada)	Spiritual value as an intangible-nonmonetary benefit to be elicited in well identified geographical areas
Burger, (2011)	All ecosystems	Interviews of Native American and Caucasian, case study at Pow Wow at Post Falls, Idaho	Number of people participating in sacred activities in nature. Native Americans were more likely to value aspects of the environment that are culturally significant to them, such as sacred sites, traditional foods, and cultural practices.
Gee and Burkhard (2010)	Coastal ecosystems	Semi-structured interviews eliciting the tradeoff between intangible ES and local offshore wind farming, perceived as a significant threat to ES ((German North Sea coast)	Spiritual values as intangible values linked to the sea and the concept of "creation".
Ceperley et al., 2010)	Riparian forest	Ethnographic surveys, vegetation analysis, qualitative statistics	Spiritual values as quantitatively measured by the number of sacred sites in riparian forests in Benin
Curtin (2009)	Wildlife	Qualitative Interviews	Spiritual value as spiritual fulfilment
Warberl and Irvine (2008)	All ecosystems	Argumentative illustrations	Spiritual value as sense of connectedness, a sense of purpose, a sense of awe and inspiration and faith in a larger reality
Burger et al., (2008)	Riparian	Argumentative paper, discussion paper (Illustration at Klamath River Basin)	Traditional ecological knowledge as the instruments to identify and assess the native sense of spiritual insights when in the nature.
Miller (2005)	Gardens in urban landscape	Argumentative illustrations	Spiritual value as values positively influencing how people value natural environments
Omura (2004).	Forest	Argumentative paper, discussion paper with case studies in Japan	Spiritual values as related to the existence of the forest. In Japan more than 15 tree species are related to the Shinto and Buddhist religions. Religious uses of special trees, to summon the gods and identify sacred areas, are also found in other countries. Such forests and large trees have preserved a solemn atmosphere and conserved parts of the natural environment,
Orams (2002)	Wildlife	Argumentative illustrations	Spiritual value as inspiring a broader responsibility for the natural world
Irvine and Warber (2002)	Gardens	Literature review	Spiritual value as spiritual well-being
Williams and Harvey (2001)	Forest	Written responses to open ended questions regarding the cause, thoughts, and behavior associated with the visit.	Spiritual value as increased spiritual well-being Transcendent experiences Feelings of connectedness to a broader reality

Frederikson and Anderson (1999)	Terrestrial, rivers	On-site observations, personal field journals, and in-depth interviews	Spiritual value as increased inspiration

Source: our elaboration

Table 6. Synthesis of the Surveyed Literature

Economic Valuation of the Impacts of Religion(s) and Spiritual Capital on Economic Performance and Growth		
Study	**What is valued and how**	**Empirical Findings/Values**
Davis, L., & Rodriguez, Z. (2024). .	The study adopts data from the World Values Survey (see below).on a sample of 87,613 surveys from waves 2–4 (1989–2004), to estimates the roles of religious beliefs and attendance in determining economic values related to cooperation, patriarchy, institutional trust, lawfulness, thrift, markets, and market fairness	Religious beliefs matter for influencing a pro-market attitude (that is *values* based on three variables reflecting an individual's beliefs about the benefits of competition, the private ownership of business, and income differentials) In particular, OLS estimated coefficients for Protestants, Catholic, ***Orthodox Christians, Muslims and Hindu (0.03, 0,01, 0.04, 0.05, 0.04 respectively) are positive. Estimated coefficients for Buddhists (-0.04) are negative.
Molteni, F., & Biolcati, F. (2023).	Drawing on CARPE, a harmonized dataset concerning church attendance with almost 2 million observations spanning over 40 years in 39 European countries, this article disentangles the contributions of period change and cohort replacement to the general religious decline.	The decline reflects a real population dynamic based on generational replacement. It is not historical events or developments affecting everyone that undermine religion: new and less religious cohorts are replacing old and more religious ones. Like many other population dynamics, this process is described by an S-shaped curve and applies—with different speeds and levels—to almost all the European countries considered herein.
Lata, L.N., Walters, P. and Roitman, S. (2021). .	Drawing on interview data with female street vendors from a slum in Dhaka, the article explores the dynamics of social and religious norms that constrain poor Muslim women's access to public space to earn income, therefore access to job market.	The parochial realm offers a safer space for operating businesses without breaking social norms. Poor Muslim women experience social and religious barriers rather than legal ones.
Davis, L., & Gao, J. (2020).	Econometric analysis of the motivations why religious women works less than their non-religious counterparts. Estimation of the employment happiness premium, which is defined as the happiness gain associated with being employed, for men and women belonging to six world religions and for the non-religious.	Results indicate that the employment happiness premium is higher for men than for women for every world religion and that the gender gap in the employment happiness premium varies significantly across religions. The gender employment gap is 16.5% higher in Catholic societies, 23.8% higher in Muslim societies, and 24.9% higher in Hindu societies.
Fungáčová, Z., Hasan, I., & Weill, L. (2019)	Using World Values Survey data covering 52 countries during the period 2010–2014, the study analyses the cross-country differences in trust in banks and confirms the influence of several sociodemographic indicators, including religious.	Religious individuals tend to put greater trust in banks. denominations. Being religious increases the average probability of response in the category “having a great deal of trust” by 5%. When analyzing different religions, the highest positive effect is found for Hindu (9.9%) and Buddhist (6.8%) and the largest negative effect for orthodox religion (-5.6%) and. Catholics (-3.7%)
Basedau, M., Gobien, S. an d Prediger, S. (2018)..	Survey on the causal mechanisms between religion and economic development. Reviews quantitative empirical evidence on	Religion is ambivalent vis-à-vis development: although religious ideas can foster certain forms of human capital acquisition and labor market participation,

	the actual effects of religion on economic and social dimensions of development.	scholars have found a negative relationship between religious dimensions and both income and gender equality as well as innovation activities. Religious identity is also a source of labor market discrimination and has ambivalent effects on economic growth and social cohesion
Deller, S.C., Conroy, T. an d Markeson, B. (2018).	Link between religious institutions and traditions and levels of entrepreneurial activity in US (county data) Spirituality measured as frequency to church services.	Communities with a large concentration of religious congregations have a correspondingly higher level (10%) of small business activity.
Kirchmaier, I., Prüfer, J., & Trautmann, S. T. (2018).	Link between religion and moral behavior and attitudes, including economic, with data for a representative sample (7000 observations gathered between 2008 and 2012) of the Dutch population. Variables based on factor analysis, just attributing factor scores.	Religious people are less accepting of unethical economic behavior (e.g., tax evasion, bribery) and report more volunteering. Religious people also report lower preference for redistribution of income.
Neubert, M. J., Bradley, S. W., Ardianti, R., & Simiyu, E. M. (2017).	The study proposes spiritual capital as an influence on economic performance, using factor analysis and fixed effect regression, with an application to the microcredit sector (interviewing 276 entrepreneurs) in Kenya and Indonesia.	Results indicate significant relationships between entrepreneurs' spiritual capital and business innovation and performance. Results indicate that spiritual capital is positively related to sales (around a 40% increase) and number of employees (around 31% increase).
Campante, F. and Yanagizawa-Drott, D. (2015)	The paper studies the economic effects of religious practices in the context of the observance of Ramadan fasting, one of the central tenets of Islam, by using an enriched dataset that combines several sources of information. The full sample consists of 166 countries, of which 26 are Muslim countries	Two key quantitatively meaningful results: (i) longer Ramadan fasting has a negative effect on output growth in Muslim countries (about 9,1% of real GDP growth), and (ii) it increases subjective well-being among Muslims. performance but that increases subjective well-being among followers. (around 13%),
Bénabou, R., Ticchi, D. an d Vindigni, A. (2015).	Econometrics of the link between innovation and religiosity. 11 indicators of individual openness to innovation (attitudes towards science and technology) are related to 5 measures of religiosity, including beliefs and attendance. Use of five waves (1980, 1990, 1995, 2000, and 2005) of the World Values Survey and control for sociodemographic, country and year fixed effects.	Greater religiosity is almost uniformly associated to less favorable views of innovation, with high significance. In particular, regularly attending services negatively affects the respondent attitude towards the statement on predominance of science of faith (-0.046) and the attitude towards the statement that science and innovation make the worlds better off (-0.002)
Dildar, Y. (2015).	The paper examines the correlates of women's labor force participation using probit regression analysis with data from the Turkey Demographic and Health Surveys (TDHS). The dataset allows to analyze social and cultural determinants together with the traditional supply side variables, including the role of religion using a religiosity variable based on the	A religious woman (e.g. a woman who regularly practices namaz and fasts) is 6% less likely to be in the labor force in comparison to a woman who does not fast or pray at all.

	frequency of religious practices of women, prayer (namaz), and fasting.	
Bénabou, Roland, Davide Ticchi and Andrea Vindigni (2013) .	Use of international data to analyze the relationship between religiosity and innovativeness. Authors use two main measures of religiosity, corresponding respectively to the answers to the World Values Survey (WVS) questions on (i) self-religious sense, independently of going to church or not, and (ii) believing in God. To measure innovation, (log-) patents per capita are used Available waves of the WVS (1980, 1990, 1995, 2000 and 2005), for selected countries and the U.S:	A robust negative association between religiosity and patents per capita, holding across countries as well as US states. In particular for the US 51 states, believing in God is associated to a decrease in (log) per capita patents number equal to 10.16%. For the other 152 countries, believing in God is associated to a decrease in (log) per capita patents number equal to 5.56%.
Elgin, C., Goksel, T., Gurdal, M. Y., & Orman, C. (2013).	Empirical research on the link between higher levels of religiosity and income inequality in 57 countries.	Findings corroborate the existence of the link. Authors argue that this is due to the lower level of government services demanded in more religious countries. For instance, countries with higher levels of belief in the afterlife tend to have lower levels of tax burden (up to 19%). The results also indicate a clear negative link between belief in afterlife and the level of government spending to GDP ratio across countries (up to 8%).
Kortt, M.A. and Dollery, B. (2012) Religion and the rate of return to human capital: Evidence from Australia. Applied Economics Letters 19(10): 943–946.	The study estimates the relationship between religion and the rate of return to human capital for Australia. Data from the Household Income Labour Dynamics Survey were analysed for men aged between 25 and 54 years. Conventional human capital functions were estimated using Ordinary Least Squares (OLS).	Results suggest that Catholic men benefit from a wage premium of 6.7%, controlling for an extensive range of controls.
Huber, J. D., & Stanig, P. (2011).	Empirical analysis on the way religion affects voting and redistribution, in particular how organized religion opens the door to standard group-based distributive politics for a sample of 35K observations.	The religious rich support parties that are more conservative than those supported by the secular rich (by 0.67). In a country with an average level of state support, the religious poor support parties that are more right-wing than those supported by the secular poor (i.e., the estimate is 0.94). The results also show that the difference between voting by the religious poor and the secular poor declines as state support increases (i.e., the estimate is −0.91). All else equal, Catholicism is significantly associated with more conservatism among poor religious voters and among rich religious voters. None of the other second-level coefficients are statistically significant
Neustadt, I. (2011).	Empirical analysis of the relationship between preferences for income redistribution (through a Discrete Choice Experiment performed in 2008 in Switzerland and administered to a sample of around 7000 respondents) and religious beliefs, measured in different matrices	The average Swiss citizen would have to be paid a compensation of CHF 11.78 (some US$ 9.40) per month (0.25 percent of monthly income) for an additional percentage point of GDP devoted to public redistribution. Estimated marginal willingness to pay (WTP) is shown to increase with a higher degree of religiosity (12.83 CHF).

Bettendorf, L. and Dijkgraaf, E. (2010)	The study uses data are from the European and World Values Survey to test a system of structural equations in the reduced form with a probit routine) whether the behavior of households in different countries is homogeneous/heterogenous with respect to the influence of religion on income	The main result is that heterogeneity between low- and high-income countries is very important for the effect of religion on income. In fact, authors find a positive effect of religion on income for high-income countries, and a negative effect for low-income countries.
Schaltegger, C.A. and Torgler, B. (2010)	Econometric (probit) analysis of the link between protestant education and work ethic (defines as a binary variable, according to the reply (yes or no) to the statement. "Work should always come first, even if it means less spare time. Use of a broad dataset with more than 17k observations, with European Values Surveys, for 16 countries, third wave.	Findings show that work ethic is influenced by protestant education (0.2% probability increase to answer yes to the statement related to work ethic) pointing to the important role of education not only for economic success but also for a commitment to work ethic. Protestants, education and religiosity explain hard work.
Rupasingha, A. and Chilton, Jb. (2009) .	Authors estimate a Barro-type conditional convergence model using religious county-level church adherence data (consisting of over 3000 observations) from the American Religious Data Archive. Authors study the effects of church adherence on economic growth, in particular independent effects of church adherence rates on economic growth in the United States at the county-level. Per capita income growth is modeled as a function of initial per capita income, initial human capital stock, and a set of control and related variables including religious adherence.	Results indicate that the religious adherence in general is significantly greater than zero and not beneficial for US county income growth (-0.4% per year)
Chiswick, B.R. and Huang, J. (2008)	This article analyzes the determinants of the earnings of American Jewish men using the 2000/2001 National Jewish Population Survey. Nonresponse to the question on earnings is analyzed. Earnings are related to conventional human capital variables, as well as Jewish-specific variables. Except for the size of place and region variables, the standard human capital variables have similar effects for Jewish men and the general male population. Jewish day schooling as a youth enhances earnings. Earnings vary by denomination, with Jewish men who identify their denomination as Conservative earning the most, with secular and Orthodox Jews earning less.	The effect on earnings of religiosity (measured by synagogue attendance) is not monotonic. Earnings are highest for those who attend about once a week, are lower for those who attend daily, and are lowest for those who never attend. The synagogue attendance data imply that men who are weekly attendees or about three-day-a-week attendees have higher earnings than those who attend less often, but that earnings decline with a greater frequency of attendance.
Rossi, M., Brañas, P., & Zaclicever, D. (2008).	Econometric analysis of the effect of religious observance and affiliation to the dominant religion (Catholicism) on trust in institutions, using a Latin American database of twenty thousand respondents from 2004, by means of ordered probit.	Trust toward others is positively correlated with religious observance and with Catholic affiliation. Being religious positively affects the probability of having trust in the government (0.073), in the police (0.076), in the armed forces (0.027), in the judiciary (0.06), and in the banking system (0.027). In particular, being Catholic positively affects the probability of having trust in the government (0.106), in the police

		(0.085), in the armed forces (0.098), in the judiciary (0.045), and in the banking system (0.098). An individual's level of religiosity crucially affects trust in institutions and toward peers. Catholicism encourages both trust in institutions and towards others.
Pryor, F.L. (2007)	This study analysis the impact of Islam on the economic and social performance of the Muslim countries, using a cluster analysis, a set of 22 indicators and regression analysis.	The presence of Islam has relatively little influence on most economic or social performance indicators. For Muslim economies, religion does not appear to be a useful explanatory variable.
McCleary, R.M. and Barro, R.J. (2006).	Econometrics of the relationship between religiosity and economic growth with a broad cross country data set in 81 countries Spirituality measured as frequency to church services, praying and fear of hell	Attending the service once a month negatively affects economic growth (-1.2%). Believing in hell positively affects economic growth (+1.2%)
Noland, M. (2005).	Econometric analysis of the impacts of religious belief on economic performance, for the 1913–98 period using per capita income data on 34 countries from. Spirituality measured as belonging to a religious group,	Being Muslim (0.5%), Hindu (1.4%), Buddhist (1.8%), Catholic (1%), Orthodox (1.4%) and Protestant (1.1.%) positively affect per capita GDP, of the values indicated in brackets. Being of Jewish belief negatively affects per capita income (-11%)
Guiso, L., Sapienza, P. and Zingales, L. (2003).	Econometrics of the relationship between religiosity and economic growth in 66 countries of the World Values Survey. Spirituality measured as frequency to church services	Religion is good for the development of attitudes that are conducive to economic growth On average, Christian religions are more positively associated with attitudes that are conducive to economic growth, while Islam is negatively associated.
Barro, R.J. and McCleary, R.M. (2003) .	The study uses international survey data on religiosity for a broad panel of countries to investigate the effects of church attendance and religious beliefs on economic growth. To isolate the direction of causation from religiosity to economic performance, the estimation relies on instrumental variables suggested by an analysis in which church attendance and religious beliefs are the dependent variables. The instruments are variables for the presence of state religion and for regulation of the religion market, the composition of religious adherence, and an indicator of religious pluralism.	Results show that economic growth responds positively to religious beliefs, notably beliefs in hell and heaven (+1.7% and + 0.3% of growth rates of real per capita GDP respectively)., but negatively to church attendance (-1,4% of growth rates of real per capita GDP). That is, growth depends on the extent of believing relative to belonging. These results accord with a model in which religious beliefs influence individual traits that enhance economic performance. The beliefs are an output of the religion sector, and church attendance is an input to this sector. For given beliefs, higher church attendance signifies more resources used up by the religion sector.
Sander, W. (2002). .	Econometrics of the link between education (dependent variable) and religious activity (measured as participation to services) in the U.S, as a way to estimate the impact of religion on human capital formation.	The results in this study suggest that education is not an exogenous determinant of attendance at weekly religious services and religious contributions. Positive correlation between education and attendance (and education and contributions), there is no causal effect. of education on religious activity is found when education is treated as endogenous.
Grier, R. (1997).	The paper tests whether Protestantism is positively related to economic growth and development and whether religion can help to explain why Spanish ex-colonies perform markedly worse than their British colonies..	A one standard deviation increase in the growth of Protestantism is associated with a 0.49 percentage point increase in 5 average growth'. Former French colonies perform, on average, 1.62 percentage points worse than former

	Pool data for the years 1961 -1990 for all of the major British, French, and Spanish ex-colonies are used to explain religion impact (variable religion = the growth rate of Protestant adherents during the 1970-1980 period) on average real GDP growth.	British colonies. Ex-Spanish colonies, while out-performing the French ex-colonial holdings, still do 0.83 percentage points worse than the mean growth rate of British colonial states.

Source: our elaboration