The moderating and mediating effects on the relationship between financial advisory and financial literacy

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ABSTRACT

This paper looks at the antecedents that foster the 'educational role' of independent financial advisors. To this purpose, a detailed questionnaire was designed and administered to a sample of Italian investors in 2015. Empirical results confirm that being assisted by a financial advisor significantly increases the literacy degree of the clients. They also provide evidence of the role played by cognitive trust, willingness to learn and length of the relationship between investor and advisor in enhancing the knowledge transfer. We check these mediation and moderation effects for three different measures of financial literacy, identified using Van Rooij et al., (2011)'s methodology. The study has potentially important policy implications, given the social impact a poor financial literacy has proven to have on retail investors.

1. Introduction

The stream of literature that provides insights on the determinants of financial literacy (FL) is particularly rich (e.g. Lusardi, 2008; Lusardi and Mitchell, 2008; Meier and Sprenger, 2008; Monticone, 2010; Sucuahi, 2013); to the best of our knowledge, however, little attention has been devoted to the role that financial advisors play in their clients' financial literacy and overall the results appear mixed (Calcagno and Monticone, 2014; Dhar and Zhu, 2006; Kramer, 2016). Moreover, the studies supporting the hypothesis that the presence of a financial advisor increases the financial literacy level of their clients, do not provide evidence of *the way* this educational role is exerted. Understanding the channels that enhance the knowledge transfer from advisor to client may provide more awareness of the financial advisors' relevance to the industry. Moreover,

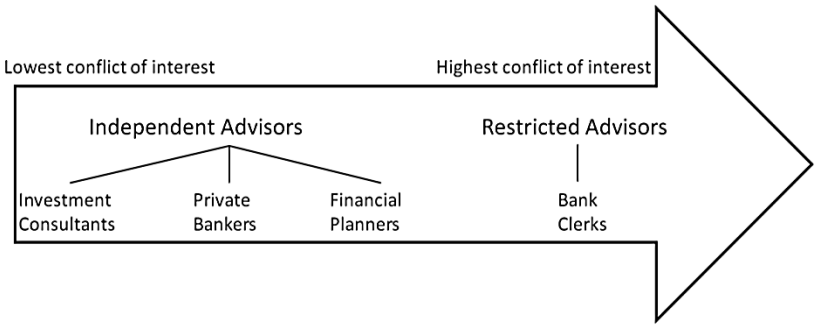
understanding how financial advisors succeed where most structured financial education programmes failed, may provide useful suggestions on how to improve such interventions. For the sake of this analysis, two main categories of advisors have been considered: independent (IFAs) and restricted advisors. The first category comprises investment consultants (ICs), private bankers (PBs)and financial planners (FPs), whereas the second category identifies bank clerks (BCs). The four different typologies of advisors – even though bank clerks cannot truly be referred to as financial advisors – have been ordered according to the conflicts of interest they might face while advising for and selling financial products (see Figure 1).

Bank clerks work for proprietary institutions and only recommend the products provided by their firm, so they have the maximum "selling incentive" possible towards in-house products. On the other hand, investment consultants do not belong to a banking or insurance group and do not have in-house products. They work in perfectly open-architecture, in other words they can virtually advise for and sell any financial product present in the market. Open architecture ensures that the financial advisors pursue their client's best interests, disregarding the provider of the financial products and avoids the conflict of interest that would exist if the firm only recommended its own products. Private bankers (PBs) and financial promoters (FPs) constitute a sort of 'hybrid profile', their offer includes both non-independent and independent advice, so their clients can invest in their firm's financial products and in third-parties' financial products, as well and are still considered IFAs[1]. We focus our analysis on the clients supported by financial advisors who offers a consultancy service (ICs, PBs ad FPs) and not purely financial products, as restricted advisors (BCs) do, because the discontinuity that characterizes the interaction between bank clerks and the clients they deal with combined with the lack of incentives to invest time and effort in their relation

[1] "Legally, like the British IFA, the *promotore finanziario* is trained to advise on third-party products and obliged to serve the client's best interests." *Promotori finanziari* "are bank representatives that offer a wide range of advice. In essence, they are trained financial advisors employed to offer whole-of-market solutions and their duties go well beyond the internal bank adviser (or restricted advisor), who generally just sells and advises on the bank's own products." (D. Liberto, "Advice the Italian way, Adviser, Oct 16, 2013").

(Hausman, 2001) do not allow the two parties to have a stable relationship on which to investigate, in order to understand the relational antecedents of the advisors' educational role.

Figure 1: Financial Advisors Typologies



Notes: financial advisors are ordered from investment consultants with the lowest conflict of interest with the clients to restricted advisors with the strongest "selling incentives"; private bankers and financial promoters stand in between with an hybrid offer of in house and third-parties' products.

The main objective of this study is to shed light on *the way* the presence of an IFA improves her clients financial literacy; it investigates the mechanisms that enable these clients to have a higher financial literacy, compared to the respondents who do not benefit from a systematic consultancy service, *ceteris paribus*. To this purpose, a detailed questionnaire was designed and administered to a representative sample of Italian investors between September 2014 and February, 2015 and an articulated empirical analysis has been carried out.

Our empirical findings highlight that the effect of the presence of an IFA on their clients' financial literacy is driven by the degree of knowledge transfer (KT) between them (Argote & Ingram, 2000). The extent of the knowledge transfer's effect on the clients' FL degree, though, is moderated by the investors' trust towards their advisors' competences (as in Johnson and Grayson, 2005) and the investors' willingness to learn (thereby confirming Mandell and Klein, 2007's prediction). Furthermore, this study evaluates whether the financial literacy degree of the clients supported by IFAs increases over time and, if so, to what extent. As any educational path, the increase in financial literacy degree due to the presence of an IFA is expected to marginally decrease over time.

This research enriches the stream of existing literature on the determinants of financial literacy, by testing the impact of three typologies of IFAs as possible antecedent of their clients' financial knowledge. Furthermore, the analysis attempts to determine the channels through which the presence of an IFA affects the financial literacy of her clients. To this purpose, for the first time, the role of knowledge transfer, cognitive and affective trust and willingness to learn – jointly referred to as "*relational determinants*" – has been applied to this stream of literature, looking at their effect on FL individually and in an integrated framework, in which the variables of interest are interconnected through mediation/moderation effects.

The research findings have meaningful managerial and policy implications, as well. The empirical evidence of this paper, provides practitioners with precise recommendations on the relational features that optimise their educational role. Moreover, traditional educational interventions aimed at improving financial literacy around the world have proven to be extremely costly and poorly effective, especially in the medium-long term (Lusardi, 2003; Meier and Sprenger, 2013; Fernandes et al. 2014). Therefore, being aware of the relational determinants that enhance the IFAs' educational role, may help to orient and better target future educational treatments.

The paper is organized as follows: section 2 provides a review of the current literature on financial literacy, Section 3 describes the survey data, defines the variables and present the methodology. Section 4 presents and discusses the empirical results and Section 5 concludes.

2. Literature Review

The term financial literacy encompasses a wide range of meanings from financial knowledge (e.g. Kim, 2001; Courchane and Zorn, 2005; Van Rooij et al., 2011) to more complex definitions that include the ability to successfully put into practice the acquired theoretical proficiency or even adding a behavioural facet its connotation (Noctor, et al., 1992; Beal and Delpachitra, 2003; Jumpstart Coalition, 2007; Servon and Kaestner, 2008; Huston, 2010; OECD, 2016). The social context may influence the understanding of financial literacy, as well; for instance, Xu and Zia,

(2012) highlight that the amount of financial knowledge required to be financially-literate in developing countries is lower compared to developed countries, depending on the complexity of the financial environment. Regardless of the exact definition, financial literacy is assessed via surveys typically at national level (for instance, Beal and Delpachitra, 2003 and Nielsen, 2008 for Australia; Van Rooij et al., 2011 for The Netherlands; Bankrate, 2003; US Health and Retirement Study (HRS), 2004 and Lusardi and Mitchell, 2007a for the USA; Monticone, 2010 for Italy) with the exception of a couple of meaningful effort to create a more extended database on financial literacy (Lusardi and Mitchell, 2011; Klapper et al.,2014; OECD/INFE, 2015). In order to be able to use compact and objective measurement scales, we opt for the most straightforward definition of financial literacy that mainly focuses on the theoretical knowledge displayed by the respondents. The extant literature provides a wide array of scales and tools to measure financial literacy, as well. Bowen, (2002), Courchane and Zorn, (2005) and Stango and Zinman, (2009), among others, rely just on one question, whereas Lusardi (2008) and Lusardi and Mitchell (2007, 2007b,) operationalize the financial literacy construct with three items. At the other extreme, there are long complex scales exceeding thirty items, such as the one used by the OECD surveys, Tennyson and Nguyen (2001), Volpe et al., (1996, 2002, 2006). We adopted a rather compact one, in line with the vast majority of the authors (e.g. Kim, 2001; Volpe et al., 2002; Lusardi and Mitchell, 2007; Servon and Kaestner, 2008; Van Rooij et al., 2012) that has the additional advantage to distinguish between basic and advanced financial literacy (Van Rooij et al., 2011).

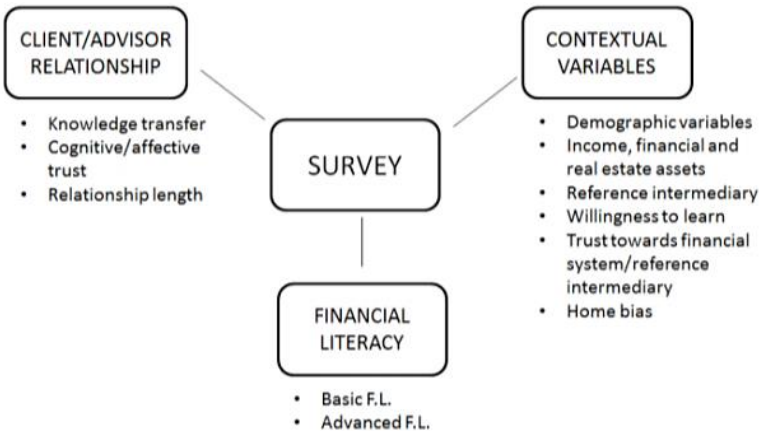
3 Data and Methodology

3.1 Survey data and variables description

Coherently with the extant financial literacy literature (Lusardi, Van Rooij et al., 2011, Calcagno and Monticone, 2014), we designed a survey in order to gather the information we need to address our research question. In particular, a three-module multiple-choice questionnaire (see Figure 2) was designed and targeted towards Italian account-holders. The survey first circulated in a pilot version and was then administered in its final version between September 2014 and February 2015,

mainly on-line using QuestionPro™ platform but hard copies to be filled in and returned in a sealed envelope were sent, as well to avoid the potential sample selection bias found in surveys, which include only computer users (Volpe et al., 2002).

Figure 2: Survey Design



Notes: For the sake of this study, we used three sections of a more comprehensive survey carried out among Italian account holders between September 2014 and February 2015. The sections assess respectively the financial literacy of the respondents, the variables we referred to as 'relational antecedents' (knowledge transfer, cognitive and affective trust, relationship length) and the demographic and patrimonial variables we controlled for in the empirical models.

In order to guarantee the sample representativeness of the Italian account-holder population, the 3427 members of the European Financial Planning Association (€FPA[2]) were contacted and briefed on the project; they in turn sent the link to the questionnaire to their clients or delivered them a hard copy of it[3].To be able to reach account-holders who only rely on restricted advisory, instead, we involved four out of the ten main Italian banks, according to Mediobanca, (2014) report. A stringent privacy statement ensures the respondents' anonymity. Instead of a monetary compensation, a report with specific profiling of the Italian account-holders population, their characteristics and the main drivers identified in order to improve one's financial literacy is given to the participants at the end of the data collection.

[2] EFPA is the largest certification body for financial planners and financial advisors in Europe and was the first European financial standards association created for the purpose of increasing professionalism in the European financial services sector.

[3] Around 14% of the overall respondents filled in a hard copy of the questionnaire and delivered it; the response rate of the on-line questionnaire is 23%.

The final sample consists of 552 retail and private banking clients, who fully filled in the survey questionnaire. The survey gathers three sets of information: the first one (see Appendix I-A) includes detailed demographic questions employed in our empirical model as control variables (gender, age, marital status, number of children, if any, education attainment, typology of degree, if any, job, region of origin, income and financial assets). Summary statistics on individuals' demographic and socioeconomic characteristics are reported in Table 1. The data shows that more than half of the sample (55%) has an IFA and more than 60% of respondents are middle-aged married men. The median income, is between € 25,000 and € 50,000 and 14% of the sample has financial assets are over € 500,000, the threshold to be considered a private banking client in Italy. The sample is fairly representative of the Italian population, as the mean composition is in line with the results of the quinquennial Istat Multipurpose Survey on Households (2011)[4].

Table 1: Summary Statistics

	Mean %	Median	SD
Financial Advisor	55	1	0.5
Gender (men percentage)	66	1	0.47
Age	43	49	1.34
Married	63	1	0.48
Single	15	0	0.36
Divorced	12	0	0.32
Cohabitee	10	0	0.3
Children (nr. of)	1.05	1	1.06
Primary/Secondary ed.	1	0	0.12
High School	46	0	0.5
College/Above	52	1	0.5
Employee	30	0	0.44
Manager	16	0	0.37
Self-Employed	34	0	0.47
Pensioner	08	0	0.27
Out of Labour Market	11	0	0.29
Income (thousands €s)	36.45	32.50	1.12
Italian private	14	0	0.25
Obs. N	*552*		

Notes: Respondents' distribution among demographic control variables

[4] The Istat annual household surveys shows that men are predominantly heads of household and financial decision makers in around 70% of cases (Istat 2011). In 2013, the mean household income of families, whose main earner is a person between 55 and 64 years old is € 35.414 (Istat 2014).

Among the controls we introduced a new variable, *Economic Grip*, which detects the presence of a basic logical financial reasoning (see Appendix I-A); the respondent is shown a graph and asked to determine whether the payoff of the investment is positive, negative or even. In this particular case, the perception of the investment to be successful or not is due to a mix of cognitive biases (or lack thereof), but not being able to answer the question or perceiving the payoff as even implies lack of basic economic grip, and in this case the dummy variable takes the value of zero.

The second section of the survey assesses the degree of both *basic* and *advanced financial literacy*, the dependent variables of our models. We employ the scale devised by Van Rooji, Lusardi and Alessie (2011), comprised of five items to measure basic financial literacy and eleven items to assess advanced financial literacy (see Appendix I-B for the exact wording of the questions). The answers to the two financial literacy sections are linearly combined in a basic financial literacy index (BFL Index), an advanced financial literacy index (AFL Index) and an overall financial index (OFL Index), which weights the correct answers to advanced financial literacy questions twice as much as the basic ones. For the sake of a more straightforward interpretation and as the empirical results were only marginally sensitive to other specifications, unweighted scores are used and reported in the descriptive and empirical evidence provided below.

On average, respondents answered to 68% of the basic financial literacy questions correctly, the percentage decreases to 65.46 for advanced financial literacy, so an overall 66.2% of the questions assessing financial literacy were correctly answered. The scores vary less between basic and advanced financial literacy, compared to those in Van Rooij et al., (2011, 2012); in their study on financial literacy and stock market participation in the Netherlands, the authors find that 75.97% of the four basic financial literacy questions used in this study were correctly answered, percentage that decreases sharply to 53.94% for advanced financial literacy. For the sake of anonymity of the respondents, it was not feasible for us to check the literacy of the financial advisors, which, though, might influence the knowledge transfer between advisor and client. In order to – at least partially – control for this possible distortion, we decided to involve only EFPA certified financial advisors

because the degree of difficulty of the certification allows us to give it for granted that the certified advisors' financial literacy exceeds the level tested in the present study. As the respondents were asked which typology of financial advisors supports them, we were able to distinguish the educational role of ICs, PBs and FPs against restricted advisors (BCs) and test the first set of three hypotheses H1:

- **H1a**: Investment Consultants have a more pronounced educational role than restricted advisors
- **H1b**: Private bankers have a more pronounced educational role than restricted advisors
- **H1c**: Financial promoters have a more pronounced educational role than restricted advisors

The third section of the survey (see Appendix I-C for the exact wording of the questions) collects information regarding a set of variables that, to the best of our knowledge, has not been tested in the context of financial literacy literature before, as they are usually employed in psychology and management studies. We hypothesised that the educational role of IFAs stems from the flow of information between advisor and client, which is formalized by the variable *knowledge transfer* (KT). Ko et al., (2005) define it as "the communication of knowledge from a source so that it is learned and applied by a recipient"; this variable fits particularly well our analysis, because the authors focus on the KT from consultants to clients, even though in a slightly different context from ours. Further studies (e.g. Modi and Mabert, 2007; Easterby-Smith et al., 2008; Li et al., 2012) analyse the same bilateral dynamic in supplier-customer relationship and provide empirical evidence that a successful transfer of knowledge between the two parties leads to improved suppliers' performance. Building on this stream of literature, we formulate hypothesis 2 as follows.

- **H2**: The Knowledge Transfer between IFA and client increases the clients' financial literacy

The second variable of this set is the trust between advisor and client, identified in the extant literature as a catalyst of the KT (e.g. Kaye and Hamilton, 2004; Ko et al., 2005). Within the supplier/customer trust literature, there is a limited number of studies that focus on individual client/financial advisor relationship (Kaye, and Hamilton,2004; Barnette-White, 2005; Ennew and Sekhon, 2007; Heffernan et al., 2008; Roberts-Lombard et al., 2014) and none of them differentiate

between *cognitive* and *affective trust*, as we decided to do. Cognitive trust (CT) is the customer's confidence on a service provider's technical skills and competence (Rempel et al., 1985; Moorman et al., 1992, Johnson, D., & Grayson, K. (2005). This typology of trust is salient within the investor/advisor relationship, as it has often been pointed out that the current complexity of financial products and market dynamics reduce the ability of customers to objectively assess the quality of the service received (Alford and Sherrell, 1996; Monticone, 2010). In contrast, the affective trust (AT) is fuelled by the level of care and concern the advisor demonstrates towards the client. Affective trust may play an important role in the financial context as well, as the rather low degree of financial literacy displayed by the investors and the opaqueness, risk and complexity of the financial environment prevent them from knowingly assessing from a technical point of view the decisions taken by their advisor. For this reason, financial advisors, also referred to as "relationship managers" (Gronros, 1996; Ravald and Grönroos, 1996; Hefferman et al., 2008), often turn to relationship marketing in order to ensure a long-lasting relationship with their customers, rather than relying solely on their technical skills. Differentiating between affective and cognitive trust (Johnson and Grayson, 2005), we test for hypotheses 3a and 3b:

- **H3a**: The Cognitive Trust between IFA and client increases the clients' financial literacy
- **H3b**: The Affective Trust between IFA and client increases the clients' financial literacy

We furthermore test whether the investors' motivation (Mandell and Klein, 2007) plays a role in the knowledge transfer; to this end, the self-reported interest towards economic and financial subjects is used as a proxy of the client's willingness to learn (WtL), as in Bowman and Herzog, (2014).

- **H4**: The Willingness to learn displayed by the respondent increases her financial literacy

Furthermore, this study evaluates whether the financial literacy degree of the clients supported by IFAs increases over time and, if so, to what extent.

- **H5**: The length of the relationship between IFA and client increases the clients' financial literacy

The Table 2.A.1 (Appendix 2) summarizes the variables described in section 3.1., whereas the exact wording of the survey questions can be found in Appendix I.

3.2. Methodology

In order to provide empirical evidence of the dynamics underlying the educational role of financial advisors, we proceed as follows. The first model upholds the presence of such a role and assesses the educational role of the three different categories of IFAs considered (see Figure 1), compared to BCs. The second model deepens the analysis and looks at the psychological channel that allows IFAs' clients to have a higher financial literacy, *ceteris paribus* compared to investors supported only by restricted advisors. Finally we look at the joint effect of the "relational drivers" on financial literacy by assessing the mediation and moderation interactions among the variables.

In order to test hypotheses 1 to 5 and in line with the most recent stream of literature (e.g. Lusardi and Mitchell, 2007; Lusardi, 2008; Monticone, 2010; Calcagno and Monticone, 2014), a multivariate empirical analysis has been performed.

Different specifications of ordered probit models, as generalised in equation 1, are employed to determine the impact of the set of relevant independent variables on the level of financial literacy displayed by the respondents.

$$Pr(yi = 1) = 1 - \Phi[\beta X_i - u_1]$$
$$Pr(yi = 2) = \Phi[\beta X_i - u_1] - \Phi[\beta X_i - u_2]$$
$$Pr(yi = n) = \Phi[\beta X_i - u_{n-1}] \quad (1)$$

$Pr(y_i=j)$ represents the probability of each financial literacy index to have *j* right questions out of the total. Φ [·] is the joint cumulative distribution of the bivariate normal and $u_1, u_2, \ldots, u_n$ are the cut-points that divide up the probability distribution. In order to be able to interpret the coefficients, the marginal effects of the explanatory variables (equation 2) have been assessed[5] (see Table 5 in the result section).

[5] The marginal effect is an approximation of how much the dependent variable is expected to increase or decrease for a unit change in an explanatory variable. Equation (2) describes the marginal effect on the jth category of the dependent

$$\Delta Pr(y_i = j) = \Phi[\beta_0 + \beta_1 + \beta_2 X_{2i} + \ldots \beta_k X_{ki}] - \Phi[\beta_0 + \beta_2 X_{2i} \ldots \beta_k X_{ki}] \quad (2)$$

In order to rule out any possibility for the results obtained to be affected by reverse causality, the variables of interest have been instrumented and model (1) is estimated again by GMM (see Appendix II-B). The GMM is a method to obtain parameter estimates when one or more regressors might be endogenous. In the linear two-step efficient GMM[6] presented in Table 6, L (L>K) variables were used to instrument the presence of a financial advisor, the typology of financial advisor and the financial literacy degree of the clients.

The second part of the empirical analysis describes the mediation (Baron and Kenny, 1986), moderation, mediated moderation (Muller et al., 2005) and moderated mediation (Muller et al., 2005 and Preacher et al., 2007) framework developed in order to get a better grip of the role played by the "relational drivers" on financial literacy displayed by the respondents (see Table 3).

A mediator is a variable that interacts with an independent variable, such that it absorbs part of or its entire effect on the dependent variable; in other words, the independent variable affects the dependent one partially (partial mediation) or exclusively (total mediation) because it affects the mediator, and the mediator, in turn, affects the dependent variable. According to the most stringent definition (Baron and Kenny, 1986), four conditions are necessary to establish mediation: (1) the independent and dependent variables must be significantly related; (2) the independent variable and the mediator must be significantly related; (3) the mediator and dependent variable must be significantly related; and (4) the relationship between the independent variable and dependent variable should be non-significant or weaker when the mediator is added to the model, as illustrated in Figure 3. A moderator, instead, is a variable involved in an interaction with an independent variable, such that the effect of the independent variable on the dependent variable depends upon the value of the moderator. Muller et al. (2005)'s define the moderational analyses as an "attempt to

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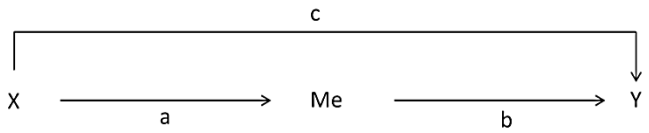
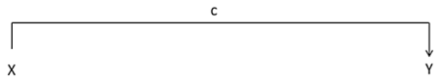
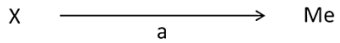
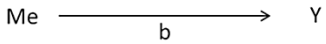
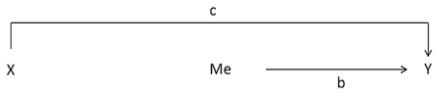
variable when a discrete covariate value changes from X1i=1 to X1i=0, keeping the other independent variables constant. The marginal effects presented have been assessed assuming that the factor variables are accumulated by weighting them by the number of observations in each category.

[6] When estimating a model of the kind of $y = X\beta + u$, the GMM allows to find a vector β that solves the moment condition $E\left[Z'(y - X\beta)\right] = 0$ where Z is a matrix of L instruments and $E\left[Z'u\right] = 0$.

identify individual difference or contextual variables that strengthen and/or change the direction of the relationship between the treatment variable and the dependent variable".

Figure 3: Mediation effect



Step	Analysis	Visual description
1	The independent and dependent variables must be significantly related	
2	The independent and mediating variables are significantly related	
3	The mediator and dependent variable must be significantly related	
4	The relationship between the independent variable and dependent variable is non-significant or weaker when the mediator is added to the model	

Notes: Figure 3 shows a step-by-step representation of the mediation effect, as defined by Baron and Kenny, 1986.

A mediated moderation takes place whenever the moderator does not affect directly the effect of an independent variable on the dependent one, but only indirectly via a third variable (the mediator of the moderation).

Lastly, moderated mediation is present when the indirect effect of the independent variable on the dependent one via the mediator, differs in strength across different levels of the moderating variable. This is known as a conditional indirect effect, as the value of the indirect effect (the mediation effect) is conditional upon the value of the moderator variable. The core condition to assess moderate mediation requires that the strength of the mediation effect differs across the levels of the moderator (Preacher et al., 2007).

4. Empirical Evidence

4.1 Financial literacy, Financial advisors and relational drivers: baseline model

The first specification of the model outlined in equation 1 tests the first set of hypotheses (1a, 1b, 1c). The results reported in Table 2, models 1-3 allow ordering the magnitude of the educational

role of investment consultants, private bankers and financial promoters against bank clerks with regard to basic (1), advanced (2) and overall (3) financial literacy.

The results of the second set of hypotheses (2, 3a, 3b, 4 and 5) are reported in Table 2 specifications 1a-3a, which introduce the role of the relational drivers of the advisors' educational role. The main results of the first set of hypotheses (columns 1-3) are strongly consistent among the specifications; coherently with the conflict of interests theory introduced in Section 1, CIs PBs and FPs have a higher educational role than restricted advisors (the reference category, dropped in the regression). This result can be explained by the higher conflict of interest bank clerks might have, compared to independent financial advisors. A more careful analysis among the three categories of IFAs shows different results for basic and advanced financial literacy: any typology of advisor, without strong distinctions, increases the level of basic financial literacy. On the contrary, investment consultants have a significant role on advanced financial literacy, which sensibly decreases for private bankers and financial promoters. The fee-only remuneration scheme of fully-independent consultants may provide them with higher incentives to build long-lasting relationships with their clients; for instance, they need to demonstrate to their clients that their advice is of added value and worth the fee. On the other hand, the main difference between PBs and FPs may lie on the minimum threshold of acceptance for new portfolios, considerably higher for private bankers; the marginal cost of a dissatisfied private banking client is higher and so is the incentive for the advisor not to let technical misunderstandings undermine their relationship.

Consistently with the extant literature (among others, Lusardi, 2003; Monticone, 2010; Van Rooij et al., 2011), although not for basic financial literacy, being a man appears to be associated with a higher level of financial literacy. A degree in the economic area, whose coefficient is always strongly positive and significant, seems to be the real education-related determinant of a high financial literacy. Alongside with a degree in economics, the economic grip displayed by the respondents has a strong impact on the three financial literacy indexes. Being self-employed

increases the probability of having a high score in all the financial literacy indexes, compared to be out of the labour market, whereas being a manager has a positive impact on basic financial literacy,

Table 2: Financial literacy, financial advisors and relational drivers

	Basic Financial Literacy (1)	Advanced Financial Literacy (2)	Overall Financial Literacy (3)	Basic Financial Literacy (1a)	Advanced Financial Literacy (2a)	Overall Financial Literacy (3a)
IC	0.208***	0.213***	0.156***			
	(0.061)	(0.047)	(0.034)			
PB	0.232***	0.112***	0.097***			
	(0.050)	(0.035)	(0.026)			
FP	0.165***	0.103***	0.084***			
	(0.037)	(0.024)	(0.018)			
Consultant				0.018	0.042	0.032
				(0.035)	(0.026)	(0.020)
Relationship Length				0.009	0.034**	0.025*
				(0.024)	(0.017)	(0.014)
Knowledge Transfer				0.004	0.053***	0.034**
				(0.028)	(0.021)	(0.016)
Willingness to Learn				-0.010	0.019	0.010
				(0.024)	(0.023)	(0.019)
Affective Trust				-0.060*	-0.028	-0.026
				(0.032)	(0.024)	(0.020)
Cognitive Trust				0.047	0.067***	0.057***
				(0.031)	(0.024)	(0.019)
Gender	0.015	0.053**	0.037**	0.016	0.076**	0.063**
	(0.032)	(0.022)	(0.016)	(0.053)	(0.038)	(0.030)
Age	-0.045	-0.022	-0.018	0.032	0.032	0.023
	(0.059)	(0.039)	(0.029)	(0.091)	(0.062)	(0.049)
Age squared	0.020	0.013	0.011	0.002	0.000	0.001
	(0.015)	(0.010)	(0.008)	(0.022)	(0.016)	(0.013)
Marital status	-0.018	-0.003	-0.004	-0.036	-0.028*	-0.027**
	(0.017)	(0.011)	(0.008)	(0.026)	(0.017)	(0.013)
Children	0.020	0.011	0.009	0.046**	0.006	0.009
	(0.016)	(0.010)	(0.007)	(0.022)	(0.017)	(0.013)
Education	-0.000	0.024	0.019	-0.062	0.031	0.018
	(0.035)	(0.023)	(0.017)	(0.053)	(0.040)	(0.032)
Eco degree	0.171***	0.143***	0.109***	0.239***	0.096**	0.094**
	(0.037)	(0.029)	(0.022)	(0.064)	(0.047)	(0.037)
Eco. Grip	0.109***	0.116***	0.089***	0.142***	0.114***	0.099***
	(0.037)	(0.027)	(0.021)	(0.048)	(0.040)	(0.032)
Employee	0.045	0.011***	0.010	-0.171	-0.048	-0.044
	(0.065)	(0.039)	(0.029)	(0.134)	(0.090)	(0.072)
Manager	0.123*	-0.054	-0.026	-0.016	-0.086	-0.058
	(0.073)	(0.044)	(0.033)	(0.141)	(0.096)	(0.077)
Self-Employed	0.122*	0.079**	0.063**	-0.057	0.036	0.025
	(0.066)	(0.040)	(0.030)	(0.131)	(0.087)	(0.069)
Pensioner	-0.121	-0.096	-0.077	-0.191	-0.068	-0.065
	(0.096)	(0.062)	(0.047)	(0.165)	(0.111)	(0.090)
Professional Expertise	0.181***	0.179***	0.138***	0.216***	0.141***	0.130***
	(0.033)	(0.023)	(0.019)	(0.052)	(0.038)	(0.032)
Private	0.061	0.057	0.047*	0.025	0.006	0.019
	(0.047)	(0.036)	(0.027)	(0.060)	(0.047)	(0.038)
Geographical controls	Yes	Yes	Yes	Yes	Yes	Yes
N Obs	552	552	552	302	302	302

Pseudo R squared	0.1148	0.1075	0.08/7	0.1255	0.1369	0.1056
Wald test	178.97	283.71	309.57	101.89	212.54	225.54
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ReSET test	Yes	Yes	Yes	Yes	Yes	Yes

Model: Ordered Probit, marginal effects on conditional probabilities are reported. Specification 1-3 are run on the whole sample, specifications 1—3a are referred to the subsample of respondents supported by an IFA; the variable Consultant orders the three typologies of IFAs according to the magnitude of their coefficients in Specification 2. Standard errors reported in brackets are robust to heteroskedasticity. The ReSET tests do not reject the null hypothesis for correct model specification.
** statistical significance at 10% level, ** statistical significance at 5% level, *** statistical significance at 1%.*

only. Aside from the specific occupation, though, the financial vocation of the respondents' job proved to have a very strong, positive, consistent effect on the three indexes. The geographical controls do not seem to have a sizable impact on the financial literacy degree, consistently with the most recent literature dealing with an Italian sample (Calcagno and Monticone, 2014). The debate on the direction of the causality between personal wealth and financial literacy of account holders is still open (Bernheim and Garrett, 2003; Lusardi and Mitchell, 2007; Delavande et al., 2008; Van Rooij et al., 2011); the results in Table 2 only marginally contribute to this stream of literature, as being private banking clients has a positive impact on overall financial literacy only.

In order to address the second set of hypotheses, we focused the analysis on the subsample of clients supported by IFAs. As bank clerks do not nurture a long-term relationship with their clients, it would have not been possible to assess the drivers that qualify the relationship with their clients. This further analysis is aimed at understanding the mechanisms through which the presence of investment consultant, private bankers and financial promoters improves their clients' literacy.

The ordered probit model devised for these purposes includes a set of variables (relationship length, knowledge transfer, client's willingness to learn and two qualitatively different measures of trust) never tested before, specifically aimed at shedding light on the features of the relationship between advisor and client that allow the latter to have higher financial literacy than the investors only supported by restricted advisors (see Table 2.A.1 for a brief definition of the variables and Appendix I-C for the exact wording of the questions).

The variable "Consultant" used in the specifications 1a-3a, Table 2 is obtained by ordering the three typologies of IFAs according to the magnitude of their educational role, as in specification 2. Once

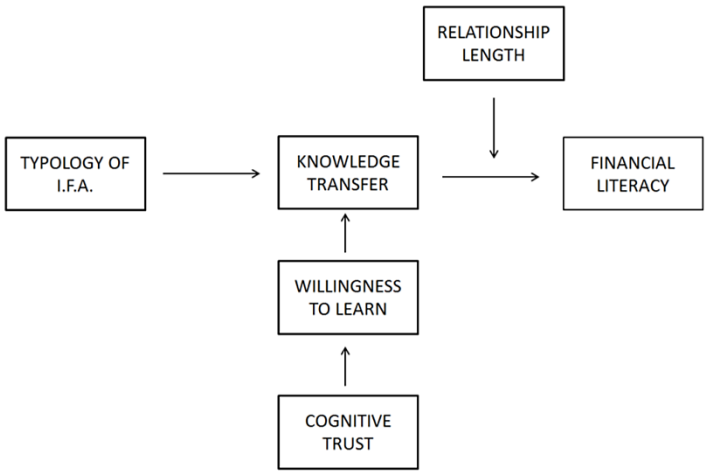
the set of relational drivers is taken into account, the variable *consultant* loses its significance; this implies that one or more "relational drivers" fully absorb the effect of this variable, acting as a full mediator. The knowledge transfer is positive and strongly significant with regard to advanced financial literacy. The degree of knowledge transfer loses gradually power and significance when it comes to overall and basic financial literacy. This result can be interpreted as follows: the support of a financial expert is not required to achieve basic financial literacy, as it is mostly based on mathematical and logical questions. Whereas, the technical knowledge necessary to attain the highest degree of advanced financial literacy requires expertise and possibly the presence of a financial expert, who can explain and provide support while dealing with topics such as the role of the secondary market, basic portfolio diversification, the characteristics of bonds, stocks, investment funds and so on (see Appendix I-B). Two different measures of trust, the cognitive and the affective one, have been evaluated. They have completely different impact on the indexes of financial literacy: cognitive trust has a strong, statistically significant effect on advanced and overall financial literacy. Affective trust, on the other hand, takes an unexpected negative sign, rather weak both in magnitude and significance, as if they were substitute goods; in other words, investors who have mainly trust in the "good faith" of their advisors but not necessarily in their technical expertise, do not have any incentive or possibility to improve their own financial knowledge, as well. In line with this interpretation, it does not even affect advanced financial literacy. The length of the relationship between advisor and client positively affects advanced financial literacy and provides partial further evidence of the causal direction between the presence of an independent financial advisor and the degree of financial literacy displayed by the clients. The variable is clearly cross-sectional, but still points out that the longer the relationship between the advisor and the client, the higher her degree of advanced financial literacy, keeping all other controls constant. So, no matter the initial level of financial literacy of the client, it grows in time in its advanced component, if there is the support of a professional financial advisor. The set of control variables is the same as

the one employed in the previous specification of the model (columns 1-3) and leads qualitatively to the same conclusions.

4.2 Financial literacy, financial advisors and relational drivers: interactive model

As the variable *Consultant* in specifications 1a-3a (Table 2) is no longer significant, once the "relational drivers" are taken into account, instead of assessing the effect of the single variables, keeping all the others constant, we proceed with a mediation/moderation framework that allows us to have an overall picture of the interactions among the relational variables. Figure 4 sketches the way the relation between *Consultant* (main explanatory variable) and *Financial literacy* (the dependent variable) is mediated by the *Knowledge transfer* (Mediator) between advisor and client. The effect of the knowledge transfer on the respondents' financial literacy degree grows over time (Moderator of the mediation) and for increasing degree of *Cognitive trust* (Moderation). Finally, the cognitive trust positively affects the knowledge transfer because it increases the *Willingness to learn* (Mediator of the moderation) of the clients, which in turn positively affects the knowledge transfer. Empirical evidence of the interactions reported in Figure 4 is given in Tables 3 to 6.

Figure 4: The relational drivers of IFAs' educational role



The model illustrated in Figure 4 hypothesizes that "knowledge transfer" mediates the relationship between the typology of independent advisor and the financial literacy displayed by the client (see Table 3) and that this indirect effect is in turn moderated by the length of the relationship between advisor and client (see Table 4). The level of cognitive trust the client feels towards her advisor mediates the effect of knowledge transfer on the degree of financial literacy (see Table 5), but this moderating effect is partially mediated by the client's willingness to learn (see Table 6).

In order to empirically test the model sketched in Figure 4, the four effects – mediation, moderated mediation, moderation and mediated moderation – are separately tested. Table 3 shows the mediating effect of knowledge transfer on the relationship between the variable *Consultant* and the level of basic, advanced and overall financial literacy displayed by the clients, according to the four steps identified by Baron and Kenny, 1986 (see Figure 3)[7].

Table 3: Mediation: Knowledge Transfer

		Basic Financial Literacy	Advanced Financial Literacy	Overall Financial Literacy	Knowledge Transfer
(1)	Consultant	0 .018 (0.035)	0 .048* (0.026)	0. 035* (0.020)	
(2)	Consultant				0.018* (0.009)
(3)	Knowledge Transfer	0.006 (0.030)	0.056*** (0.021)	0.037** (0.016)	
(4)	Consultant	0.018 (0.035)	0.042 (0.026)	0.032 (0.020)	
	Knowledge Transfer	0.004 (0.028)	0.053*** (0.021)	0.034** (0.016)	
	Controls	Yes	Yes	Yes	Yes

Model: Ordered Probit. The results should be read horizontally, each row reports the result of the corresponding step devised by Baron and Kenny, (1986) which tests the significance of the relation respectively between: (1) independent and dependent variable, (2) independent variable and mediator, (3) mediator and dependent variable. Step 4 verifies that the relation tested in step (1) is weaker or no longer significant, once the mediator is included in the equation.
The regressors and control variables not reported are the same as in table 2(1a-3a).
Standard errors in brackets are robust to heteroskedasticity.
** statistical significance at 10% level, ** statistical significance at 5% level, *** statistical significance at 1% level.*

As anticipated by the results shown in Table 2 (columns 1a-3c), the basic financial literacy degree of the clients does not seem to be affected by the knowledge transfer. More relevant conclusions can be drawn, however, by looking at the advanced and overall level of financial literacy. The results reported in Table 3 show that the typology of consultant (1) and the knowledge transfer (3) separately tested increase the clients' advanced and overall financial literacy. The typology of advisor affects the amount of knowledge transferred (2), but does not seem to have a role in the literacy displayed by the respondents after controlling for the knowledge transfer (4). This indicates a total mediation; in other words, the typology of IFA affects the clients' advanced and overall

[7] Robustness checks have been run using Structural Equation Modelling and the KHB method

financial literacy because it affects the presence and the magnitude of the knowledge transfer between advisor and client, which in turn increases the clients' financial literacy. In a nutshell, the presence of an advisor increases the financial literacy of the client not *per se*, but via the knowledge transfer. The relation above identified is globally moderated by the length of the relationship between financial advisor and client, which means that the longer the relationship is, the more intense the effect of the knowledge transfer is, as reported in Table 4.

Table 4: Moderated Mediation: Relationship Length

Relationship length	Basic Financial Literacy (1)	Advanced Financial Literacy (2)	Overall Financial Literacy (3)
Low level	0.036	0.127*	0.290
	(0.027)	(0.076)	(0.178)
Mean level	0.027	0.147**	0.322*
	(0.018)	(0.073)	(0.162)
High level	0.019	0.168**	0.354**
	(0.017)	(0.081)	(0.176)
Controls	Yes	Yes	Yes

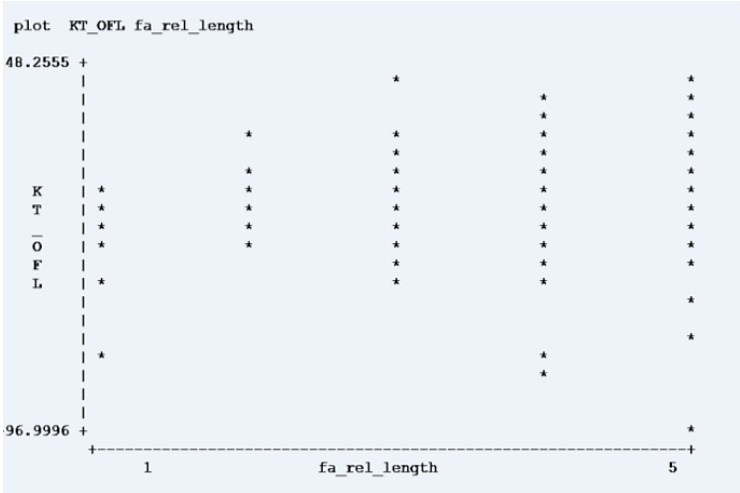
Model: linear structural equation modelling. The control variables not reported are the same as in table 2(1a-3a).
The mean level of the variable relationship length is 4 years, low and high level are obtained respectively by subtracting and adding a standard deviation (1.08 years) to the mean value.
Standard errors in brackets are robust to heteroskedasticity.
** statistical significance at 10% level, ** statistical significance at 5% level, *** statistical significance at 1% level.*

The moderated mediation affects the indirect effect of the knowledge transfer in mediating the relationship between the typology of advisor and the level of financial literacy displayed by the client. Keeping in mind that the data are cross-sectional, this moderated mediation can be interpreted as follows: the advanced and overall financial literacy of the clients grow over time because the importance of the knowledge transfer between advisor and client increases. This is a further indirect proof of the causality direction between the presence of an advisor and the financial literacy of the client: if no educational role was exerted by the advisor, the financial literacy of the client - no matter its initial level was - would not increase over time.

It is, furthermore, interesting to investigate the shape of the moderated mediation role exerted by the length of the relationship, as shown in Figure 5. As in any learning process, the effect of the knowledge transfer on the financial literacy – always positive *per se* – grows during the first phases

of the relationship and then settles when the maximum level of knowledge has been transferred. In this specific case, the indirect effect of the knowledge transfer on the relationship between the typology of advisor and the client's financial literacy seems to rapidly grow at the beginning of the relationship between client and advisor and then it settles between the fourth and the fifth year.

Figure 5: Moderated Mediation growth pace



Source: STATA elaboration. Figure 5 reports the dynamics between the indirect effect of knowledge transfer on overall financial literacy and the length of the relationship between advisor and client, expressed in years.

Table 5 shows the positive moderating effect exerted by the cognitive trust; the higher the cognitive trust between client and advisor, the higher the effect of knowledge transfer on the advanced and overall financial literacy degree displayed by the client. The more the client trusts the professional expertise of her financial advisor, the more effective the knowledge transfer among the two seems to be. The link between the level of cognitive trust and the flow of knowledge is the willingness to learn of the client, as shown in Table 6. In other words, the more the clients trust their advisor, the more they are willing to learn from her and this positive predisposition enhances the flow of financial knowledge. The relationship among cognitive trust, willingness to learn and knowledge transfer described above is a mediated moderation. Table 6 shows a partial mediation of the willingness to learn towards the effect of the cognitive trust on the knowledge transfer; cognitive trust remains significant but loses magnitude when the willingness to learn of the client is accounted for (compare the coefficients of model (1) and (4) from Table 6).

Table 5: Moderation: Cognitive Trust

	Basic Financial Literacy (1)	Advanced Financial Literacy (2)	Overall Financial Literacy (3)
Consultant	0.020	0.044*	0.033*
	(0.035)	(0.026)	(0.020)
Knowledge Transfer	0.005	0.056***	0.036**
	(0.028)	(0.021)	(0.016)
Cognitive Trust	0.048	0.069***	0.059***
	(0.031)	(0.024)	(0.006)
K.T. * CT	0.009	0.018**	0.013**
	(0.015)	(0.008)	(0.006)
Controls	Yes	Yes	Yes
N Obs	302	302	302
Pseudo R squared	0.1259	0.1388	0.1071
Wald test	103.18	219.42	230.44
	(0.0000)	(0.0000)	(0.0000)
ReSET test	Yes	Yes	Yes

Model: Ordered Probit. Regressors and control variables not reported are the same as in table 2(1a-3a).
. Standard errors in brackets are robust to heteroskedasticity.
** statistical significance at 10% level, ** statistical significance at 5% level, *** statistical significance at 1% level.*

Table 6: Mediated Moderation: Willingness to Learn

		Knowledge Transfer	Willingness to Learn	N. Obs	Pseudo R2	Wald test
(1)	Cognitive trust	0 .046*** (0.010)		302	0.1117	152.97 (0.0000)
(2)	Cognitive trust		0.032*** (0.009)	302	0.1132	241.91 (0.0000)
(3)	Willingness to Learn	0.040*** (0.009)		302	0.1064	187.19 (0.0000)
(4)	Cognitive trust	0.035*** (0.010)		302	0.1169	185.53 (0.0000)
	Willingness to Learn	0.025*** (0.009)				
	Controls	Yes	Yes			

Model: Ordered Probit. The results should be read horizontally, each row reports the result of the corresponding step devised by Baron and Kenny, (1986), which tests the significance of the relation respectively between: (1) independent and dependent variable, (2) independent variable and mediator, (3) mediator and dependent variable. Step 4 verifies that the relation tested in step (1) is weaker or no longer significant once the mediator is included in the equation.
The regressors and control variables not reported in the table are the same as in table 5(1a-3a). Standard errors in brackets are robust to heteroskedasticity.
** statistical significance at 10% level, ** statistical significance at 5% level, *** statistical significance at 1% level. Robustness checks have been run using Structural Equation Modelling and the KHB method*

The same conclusions can be drawn with the KHB method or SEM[8]: according to the latter methodology, 22.89% of the effect of the global cognitive trust on the knowledge transfer is

[8] As robustness checks, we tested the same non-linear model with the KHB method (Karlson, Holm and Breen, 2010) and a linear relationship among the three variables with SEM (Structural equation modelling). KHB method allows

mediated by the client's willingness to learn.

The empirical evidence reported in Tables 2 to 6 proves that financial advisors exert an educational role towards their clients; as a matter of fact, the presence of a financial advisor increases the financial literacy of her clients via the knowledge transfer between them. This flow of information increases its effect on financial literacy over time up to a period of about four years. The more trustworthy the client is toward her advisor's technical skills, the higher the willingness to learn of the client is and consequently the higher the effectiveness of the knowledge transfer between them on the financial literacy degree becomes.

5 Conclusive remarks

Using a unique survey carried out in Italy between September 2014 and February 2015, this paper provides original evidence on the relational drivers of independent financial advisors' educational role. The presence of an IFA improves her clients' financial literacy, particularly their advanced financial literacy, which measures the knowledge degree of simple financial instruments and fundamentals of portfolio management theory and markets. The relational drivers of the IFAs' educational role do not seem to have a significant effect on the basic financial literacy; given the logical and mathematical nature of the questions included in the BFL index, basic financial literacy might reasonably work as a prerequisite for advanced literacy. Possibly schools and universities, might be more suitable to convey the basic financial skills, on which people can build more refined level of financial knowledge, whereas financial advisors are more likely to deal with technical issues. The empirical evidence presented in the paper, shows that IFAs' educational role is exerted via the knowledge transfer between advisor and investor. The degree of trust investors have towards the advisor's technical skills enhances the knowledge transfer between the parties, both directly and

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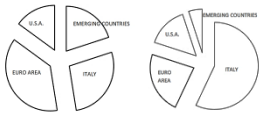
unbiased decompositions of the total effect of a variable into a direct and an indirect (spurious) effect; it is unaffected by the rescaling or attenuation bias that arises in cross-model comparisons in nonlinear models. It recovers the degree to which a variable, mediates or explains the relationship between an independent variable and a latent outcome variable, underlying a nonlinear probability model. SEM is a powerful and flexible multivariate statistical technique that allows the analysis of the network of relationships between one or more independent variables and one or more dependent variables (measured variables or latent constructs).

indirectly via the clients' willingness to learn. Finally, longer relations with an advisor lead to higher financial literacy, suggesting that the educational role of advisors increases over time.

The analysis carried out in this study is relevant to practitioners, policy makers and scholars. From the industry's perspective, knowing that the cognitive trust, the willingness to learn of the clients and the length of the relationship between client and advisor enhance the advisors' educational role may raise awareness about the IFA's educational role. This may help in better calibrating their approach to the clients and increase the overall added value of brokerage firms' advisory services. Moreover, this study addresses in a comprehensive way timely policy issues; the consequences of a poor level of financial literacy in Europe, became apparent after the burst of a number of financial scandals involving retail investors, who did not pay attention to and fully understand the actual composition of their portfolios, until they were hit by major financial damage. Traditional educational interventions aimed at improving financial literacy proved to be extremely costly and to have a worryingly short decay period worldwide (Lusardi, 2003; Meier and Sprenger, 2013; Fernandes et al. 2014), so a more gradual and constant form of financial education would be much needed. Being aware of the relational determinants that enhance the IFAs' educational role, may help to orient and better target future educational treatments.

From a technical point of view, this study contributes to the literature on the determinants of financial literacy by testing a novel set of variables, referred to as "*relational determinants*". Finally the paper presents an interactive framework, which better explains how these variables operate by applying the "moderation/mediation framework" to a stream of literature that does not usually look for the multiple interactions occurring among the variables of interest.

APPENDIX I

Section A: Independent and Control Variables	
Gender	Gender of the respondent
Marital Status	Marital Status of the respondent
Children	Number of children
Age	Age of the respondent [18-24; 25-34; 35-44; 45-54; 55-64; 65-75; >75]]
Job	[Employee; Manager; Professional; Entrepreneur; Out of labour market; Other (please specify]
Professional Expertise	Has your job somehow improved your financial skills/knowledge? [Yes=1; No=0]
Educational attainment	Highest Educational attainment of the respondent
Degree in economics/finance	[Economic sciences=1; Other=0]
Region of residence	Region of residence of the respondent
Total real estate assets	[€0-200,000; €200,000-350,000; €350,000-700,000; €700,000-1,5m; €1,5m-3m; €3m-5m; €5m-10m; >€10m]
Total financial assets	Total amount of liquidity, and financial assets (e.g. government bonds, bonds, stocks) [< €50,000; €50,000-100,000; €100,000-250,000; €250,000-500,000; €500,000-1m; €1m-5m; €5-10m; €10-30m; €30m-50m; > €50m]
Financial Advisor	Are you supported by a private banker, financial promoter or independent consultant?[No, I'm only supported by a bank clerk; Yes, by a financial promoter; Yes, by an independent consultant; Yes, by a private banker]
Advisor Rel. length	How long have you been assisted by your current advisor?[0 -6 m; 7 m-1 y, 1-3 y; 3-5 y; > 5 y]
Fin. Intermediary Rel.Length	How long is it that you have a bank account by your current financial intermediary? ?[0 -6 months; 7 months-1 year, 1-3 years; 3-5 years; > 5 years]
Fin. System Trust	*How trustworthy do you think the Italian banking system is?[*Not trustworthy at all; Slightly trustworthy; Neutral; Very trustworthy; Extremely trustworthy]
Willingness to Learn	How interested are you in economic and financial topics?[Not interested at all; Slightly interested; Somewhat interested; Moderately interested; Extremely interested]
Rating	Which is the most plausible combination of countries if you had to order Euro Area, Italy, Emerging Countries and U.S.A according to their rating? (from the highest to the lowest?) [Italy – Euro Area – U.S.A. – Developing C.; Developing C. – U.S.A – Euro Area – Italy; Euro Area – U.S.A. – Italy – Developing C.; U.S.A – Euro Area – Italy – Developing C.]
Home bias	Which of the two portfolio allocation is the safest in your opinion? Allocation 1 Allocation 2 
Economic Grip	Please consider the underlying scenario; say you invested your money in January and that the value of that investment have changed over time according to the graph. What would you say with regard to your investment on March?[I'm gaining; I'm losing; I'm at break-even; I don't know]
Section B: Trust and Knowledge transfer scales	
Cognitive trust Given by financial adviser's track record…	**CT1** … I have no reservations about acting on his or her advice; **CT2** … I have good reason to doubt his or her competence. (reversed); **CT3** … I can rely on my financial adviser to undertake a thorough analysis of the situation before advising me; **CT4** … I have to be cautious about acting on the advice of my financial adviser because his or her opinions are questionable. (reversed); … **CT5 …**I cannot confidently depend on my financial adviser since he/she may complicate my affairs by careless work. (reversed). [strongly agree; somewhat agree; neither agree nor disagree; somewhat disagree; strongly disagree]
Affective trust	**AT1** I would feel a sense of personal loss if I could no longer use my financial adviser; **AT2** I would feel a sense of personal loss if I could no longer use my financial adviser; **AT3** My financial adviser displays a warm and caring attitude towards me; **AT4** I can talk freely with my financial adviser about my problems at work and know that he or she will want to listen; **AT5** My financial adviser is only interested in selling me products (reversed). [strongly agree; somewhat agree; neither agree nor disagree; somewhat disagree; strongly disagree]
Knowledge transfer The interaction with my financial advisor has increased…	**KT1** … my understanding of the basic rational underlying the construction of a portfolio; **KT2** … my capability of asking coherent and constructive questions regarding the financial strategies my advisor suggests; **KT3**… my knowledge on financial instruments' characteristics; **KT4** … my understanding of diversification and relative implications; **KT5 ...** my understanding of compound interest rate; **KT6** … my awareness on the impact inflation has on the value of my portfolio. [strongly agree; somewhat agree; neither agree nor disagree; somewhat disagree; strongly disagree]
Section C:Financial Literacy: Basic and Advanced financial literacy; All questions included the options "All of the above" and "I don't know"	
BFL_1	Suppose you had €100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow? [More than

	€110; Exactly €110; Less than €110]
BFL_2	Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After one year, how much would you be able to buy with the money in this account? [More than today; Exactly the same; Less than today]
BFL_3	Assume a friend inherits h10,000 today and his sibling inherits h10,000 3 years from now. Who is richer because of the inheritance? [My friend; His sibling; They are equally rich]
BFL_4	Suppose that in the year 2010, your income has doubled and prices of all goods have doubled too. In 2010, how much will you be able to buy with your income? [More than today; The same as today; Less than today]
AFL_1	Which of the following statements describes the main function of the stock market?[The stock market helps to predict stock earnings; The stock market results in an increase in the prices; The stock market brings people who want to buy with people who wants to sell stocks]
AFL_2	Which of the following statements is correct? If somebody buys the stock of firm B in the stock market [He owns a part of firm B; He has lent money to firm B; He is liable for firm B's debts]
AFL_3	Which of the following statements is correct? [One cannot withdraw money invested in a mutual fund during the first year; Mutual funds can invest in several assets, for example invest in both stocks and bonds; Mutual funds pay a guaranteed rate of return which depends on the past performance]
AFL_4	Which of the following statements is correct? If somebody buys a bond of firm [He owns a part of firm B; He has lent money to firm B; He is liable for firm B's debts]
AFL_5	Consider a long time period (for example 10 or 20 years), which asset normally gives the highest return? [Saving accounts; Bonds; Stocks]
AFL_6	Normally, which asset displays the highest fluctuation over time?[Saving accounts; Bonds; Stocks]
AFL_7	When an investor spreads his money among different assets, does the risk of losing money [Increase; Decrease; Stay the same]
AFL_8	If you buy a 10-year bond, it means you cannot sell it after five years without incurring a major penalty, even with an efficient secondary market. [True; False]
AFL_9	Stocks are normally riskier than bonds [True; False]
AFL_10	Buying a company stock usually provides a safer return than a stock mutual fund [True; False]
AFL_11	If the interest rate falls, what should happen to bond prices? [Rise; Falls; Stay the same]

APPENDIX II

Section A _ Table 2.A.1: Variables definitions

Variable	Definition
Dependent Variables	
Basic Financial Literacy Index	Sum of the correct answers to four questions devised to measure BFL
Advanced Financial Literacy Index	Sum of the correct answers to eleven questions devised to measure AFL
Overall Financial Literacy	Sum of basic and advanced financial literacy indexes, with advanced financial literacy weighted twice as much as basic financial literacy scores.
Explanatory Variables	
Independent Financial Advisor (IFA)	Dummy variable taking the value of 1 if the respondent is assisted by an independent financial advisor, 0 otherwise
Restricted Advisor (RA)	Dummy variable taking the value of 1 if the respondent is assisted by a restricted advisor also referred to as Bank Clerk (BC), 0 otherwise
Investment Consultant (IC)	Dummy variable taking the value of 1 if the respondent is assisted by an investment consultant, 0 otherwise
Private Banker (PB)	Dummy variable taking the value of 1 if the respondent is assisted by a private banker, 0 otherwise
Financial Promoter (FP)	Dummy variable taking the value of 1 if the respondent is assisted by a financial promoter, 0 otherwise
Consultant	Categorical variable taking value of 0 if the respondent is assisted by a BC, 1 by a FP, 2 by a PB and 3 if she is assisted by an IC.
F.A. relationship length	See question C2, Appendix I-A
Professional Expertise	Dummy variable taking the value of 1 if the respondent's job has positively affected

	her financial knowledge, 0 otherwise
Economic Grip	A dummy variable that takes the value of 1 if the respondents chose either the first or the second answer to question C9 (see Appendix I-A), zero otherwise.
Affective Trust (AT)	Standardised level of care and concern perceived by the client on behalf of the advisor, measured on a 5-item Likert scale (see Appendix I-B).
Cognitive Trust (CT)	Standardised trust displayed towards the advisor's technical skills, measured on a 5-item Likert scale (see Appendix I-B).
Willingness to Learn (WtL)	Standardised self-reported interest towards financial and economics subjects (measured on a Likert scale from 1 -not interested at all- to 5 -extremely interested)
Knowledge transfer (KT)	Standardised Likert-scale measure of the perceived contribution on behalf of the financial advisor to the client's financial knowledge on six topics (see Appendix I-B)
Relational drivers	The way knowledge transfer, willingness to learn, relationship length and cognitive/affective trust are jointly referred to.
Control Variables	
Gender	Dummy variable taking the value of 1 for male 0 for female investors
Age	Seven age intervals covering from 18 to over 75 years old (see D2, Appendix I-A)
Marital status	Four dummy variables controlling for being married, separated/divorced, cohabitant and single (question D3 Appendix I-A)
Children	Number of dependent children
Residence area	Five dummy variables controlling for the respondent living in North-West, North-East, Centre and South (including Isles).
Education	Scale ranging from 1 Primary/Secondary education to 3 Degree or Postgraduate title
Economics degree	Dummy variable taking the value of 1 if the respondents has a degree in economics or finance, 0 otherwise.
Job	Eight dummy variables controlling for the respondent's job (see Appendix I-A)
Private	Dummy variable taking the value of 1 if the respondents has a financial patrimony over € 500,000, zero otherwise
Instrumental Variables	
Distrust System	Reverse coding of the answers to question C6, Appendix I-A
Fidelity	Dummy variable which takes the value of 1 if the customer has a longer relationship with the consultant, than with the financial institution the advisor currently works for
North-Educated	Dummy variable that takes the value of 1 if the respondent lives in northern Italy and has a higher education degree
Home Bias	Dummy variable that takes the value of 1 if the respondent does not choose option 1 in "Rating" question, but still prefers Allocation 2 in "Home Bias" question

Section B_ Financial advisors and financial literacy: causality tests

The evidence of a strong and significant impact of the presence of an independent advisor on the financial literacy scores does not necessarily provide evidence of the direction of the causality between the variable of interest. Furthermore, Calcagno and Monticone (2014) show that financially-literate investors tend to delegate more their financial decisions compared to individuals with a low degree of financial literacy [9]. In order to rule out any possibility of reverse causality

[9] Calcagno and Monticone (2014) findings should be compared with caution to the results presented in this paper because the authors assess the impact of financial literacy on the degree of delegation (no-delegation, advice and full-

between the presence of a financial advisor and financial literacy, the relationship is estimated by the Generalized Method of Moments (GMM). In order to do so, the four typologies of financial advisors have been ordered in the variable *consultant* (see Table 2) according to the degree of discretion they have while choosing the financial instruments that best suit a client's interest; in the case of advanced financial literacy, this order coincides with the magnitude of the educational role exerted by the advisors. The same model presented in table 2 is estimated instrumenting the variable consultant with the degree of distrust in the banking system and the dummy variable fidelity (see Table 2.B.1). This variable indicates that the client had followed the advisor when he or she moved from a financial institution to another one. The variables basic, advanced and overall financial literacy, dependent in the main model, are instrumented and tested as regressors of the variable consultant, in order to fully control for endogeneity. The financial literacy indexes are instrumented with two dummy variables: the first one detects the combination of living in northern Italy and being highly educated (college or above), the second one controls for home bias (see Table 2.A.1).

The gap between northern and southern regions in Italy involves financial literacy, but it is also captured by several economic indicators, such as per capita income, employment rates and overall education attainment. Whereas the lack of home bias, that is the tendency for investors to prefer domestic investments, despite no actual economic or financial considerations would lead to such a decision, proxies the respondents' financial knowledge (e.g. the benefits of diversifying) without correlating with the decision of relying on a financial advisor. The instruments of financial literacy have no statistically significant impact on the choice of being assisted by any of the four categories of financial advisors, combined in the categorical variable Consultant. The goodness of these instruments is supported by the results of the Hansen's test that do not reject the null of instrument validity (see Table **2.B.1**).

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delegation) of investors with risky assets only towards restricted advisors. Furthermore, a different financial literacy scale has been employed.

Table 2.B.1
Causality direction between the presence of an advisor and financial literacy

Basic Financial Literacy

	First stage Dependent: BFL		Second stage Dependent: Consultant
Consultant	0.267* (0.139)	Basic F. L.	-0.341 (0.289)
Controls	Yes	Controls	Yes
N Obs	552		552
Hansen J	0.807		1.599
Hansen J p value	0.3691		0.2061

Advanced Financial Literacy

	First stage Dependent: AFL		Second stage Dependent: Consultant
Consultant	0.700* (0.403)	Advanced F. L.	-0.232 (0.196)
Controls	Yes	Controls	Yes
N Obs	552		552
Hansen J	2.306		0.789
Hansen J p value	0.1289		0.3744

Overall Financial Literacy

	First stage Dependent: OFL		Second stage Dependent: Consultant
Consultant	1.691** (0.850)	Overall F. L.	-0.087 (0.072)
Controls	Yes	Controls	Yes
N Obs	552		552
Hansen J	1.5288		0.9747
Hansen J p value	0.2163		0.3235

Linear model estimated by GMM. The control variables not reported are the same as in table 5. Standard errors in brackets are robust to heteroskedasticity. The Hansen'J tests for over-identification does not reject the null hypothesis of instruments' validity.
** statistical significance at 10% level, ** statistical significance at 5% level, *** statistical significance at 1% level.*

Table 2.B.1 reports the estimates from a two-stage regression and provides evidence of the causal relationship between the presence of an independent advisor and the financial literacy indexes. In each table, the variable *Consultant* (duly instrumented) is significant and positive in explaining the degree of basic, advanced and overall financial literacy. On the contrary, neither basic, nor advanced or overall financial literacy have a significant impact on the choice among restricted advisors, financial planners, private bankers or independent consultant.

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