The Financial Wellbeing Index: "Donne al quadrato" and the relevant impact measurement

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1. Introduction

Financial well-being describes the condition in which a person can fully meet current financial obligations, feel secure in their financial future and is able to make autonomous choices. The expression itself, "financial well-being", underlines how the economic and financial aspects are inextricably linked to our individual and social well-being. Helping people to improve their financial well-being, in a broad sense, is, therefore, the first impact indicator that financial education professionals must ask themselves.

For this reason, the Global Thinking Foundation has decided to measure the impact of the Donne al quadrato project through collaboration with ALTIS - Università Cattolica, analyzing activities' progress to identify the impact of the project, of its strengths and weaknesses and possible paths for improvement and enhancement. The intervention developed along two main axes:

- Scientific review, validation and expansion of stakeholder engagement (by increasing the number of courses monitored), methodology and measurement process in place;
- Definition of a synthetic indicator of Financial Wellbeing, to assess the overall effects generated within the Donne al quadrato project. This indicator intends to measure the level of security and freedom of people regarding their economic situation and their financial capabilities, considering micro indicators, specific to the sample examined, and macro variables, belonging to the territorial context, to purify the changes measured by the macroeconomic effects affecting the entire population.

The conceptualisation of the theoretical reference framework for measuring the impact generated started from analysing the literature on the mechanisms that regulate people's financial behaviours. These aspects can be modified by didactic-training activity.

The analysis of the literature shows that can place three concepts at the basis of the definition of people's financial behaviour: financial well-being ((Delafrooz & Paim, 2011; Gerrans, Speelman & Campitelli, 2014), financial literacy (Atkinson e Messy (2011), (2012)) and financial capability (Holzmann et al. 2013; Kempson et al, 2013a; Kempson et al. 2013b).

After examining various theories, in this study, it was decided to use the analysis of the links between literacy and financial capacity and of the main components of financial well-being described in the following guide "Financial Well-Being" (Kempson et al. 2017).

2. The Financial Wellbeing Index

Methodology

Using the framework theorized by Kempson, for measuring of the components of financial well-being decided to set up a synthetic indicator.

The Financial Wellbeing Index (FWI) was designed to provide an accurate, consistent and comparable measure over time of how much participation in the Donne al quadrato course has influenced people's perception of security and freedom, about their economic situation and their financial capabilities. The FWI, conceived based on of a methodology used by the University of Bristol (Hayes, D., Evans, J., & Finney, A., 2016), aims to provide a complete, concise and easily communicable image, which describes the impact picture and its evolution over time (trend).

The index is measured on a scale of 0 to 180, where higher scores represent greater financial well-being. As shown in figure 1, 83% of the overall score of the index is based on a micro index,

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calculated on the basis of the results collected thanks to the administration of a questionnaire to participants and participants in courses provided by the Foundation. The remaining 17% is made up of the index's macro component, which is constructed using three nationally recognized economic indicators of a territorial context (Istat). The overall score of the index is calculated by adding the macro index to the results of the individual micro indexes of the respondents.

Figure 1 - Graphical representation of the FWI.

Index creation and composition

The overall index comprises the sum of the values of fifteen individual micro aspects and three macro aspects, as explained below.

Macro component

The index's macro component is based on three macroeconomic indicators chosen to provide a global overview of the economy on a national and regional basis. This result in measure the level of employment, the equality of income distribution (GINI coefficient) and the variability of per capita GDP.

For the calculation of this component, the recent historical values provided by Istat were used and rescaled so that they provide a score on a scale of 1-10, where a higher score always corresponds to a scenario of greater socioeconomic well-being, or levels of falling unemployment, and high variability of per capita GDP values and a higher level of equality. Note that since the macro component provides a snapshot of the macroeconomic context, it is invariant for all individuals for which the index was calculated.

The methods for calculating the three elements are detailed below.

Occupation

To calculate the employment score, the historical series, provided by Istat, of the annual unemployment rate for the last nine years, at a national level and for each region, was reworked. At the regional level, the choice not to limit ourselves to using the precise data of the latest survey was made to contextualize the data in their recent historical evolution. The range of variability of the time frame under consideration was, therefore calculated as follows. The minimum and maximum of the historical series of all the Italian regions were considered, and a buffer was applied to them to take into account the uncertainty of these limits (10% of the average point between the minimum and maximum). The minimum and maximum used, for regional scores, are therefore unique and the same for all regions.

As regards to the national data, on the other hand, the minimum and maximum of the relative historical series were used, without reference to the regional curves. For this reason, it may happen that the national score is not directly comparable with the regional ones (for example it does not represent the weighted average of the regional scores); in fact, the two types of data represent slightly different concepts: the employment rate is quantified and re-proportioned, at a national level, concerning to its evolution over time, while at the regional level with respect to time and connections with other regions.

The score was then calculated by reporting the most recent data of the historical series from the variability interval to the scale of 1-10 and then considering the reciprocal, so that higher

unemployment levels correspond to lower scores and vice versa. In other words, if T_d is the most recent unemployment rate and U and L the maximum and minimum limits of the range of variation, calculated as described above, the employment score is determined using the formula:

$$P_o = 10 - \frac{T_d - L}{U - L} 10$$

Equality of income distribution

A similar procedure was applied to the historical series of the Gini coefficients (source Istat) to calculate the income distribution equality score.

The Gini coefficient is, in fact, an internationally used measure of the inhomogeneity in the distribution of net household income within a country. It is calculated by comparing the effective distribution of income with the theoretically entirely fair one: a Gini coefficient of 0 represents a perfect income distribution equality (in which 10% of the population receives 10% of the national income, 50 per cent receives 50%, etc.), while a coefficient of 100 represents perfect inequality (in which only one person receives 100% of the income).

Similarly, to what is described for the occupancy score, to determine the variability interval of the regional data, the lower and upper thresholds of the variability interval of all the regional time series of the Gini coefficients starting from 2010 were calculated. For the national interval, on the other hand, and correspond to the minimum and maximum of the national time series. Also, in this case, the national score may not be directly comparable with the regional ones since the two types of data represent slightly different concepts: the Gini coefficient is quantified and re-proportioned, at a national level, in relation to its evolution over time, while at a regional scale for time and relations with other regions.

The income distribution equality score was then obtained by reporting T_g, the Gini coefficient for the available last year, from the variability interval L - U on the scale of 1 - 10 and considering the reciprocal, as follows:

$$P_g = 10 - \frac{T_g - L}{U - L} 10$$

Change in GDP

The methods for calculating the score relating to the change in per capita GDP were completely similar to those described for the unemployment and income equality scores. The only peculiarity of this indicator lies in the fact that the historical series of GDP values tout-court were not used, which are by no means representative to define the FWI. Still, those of the percentage changes compared to the previous year. Indeed, long-term GDP per capita, in absolute terms, tends to increase. At the same time, its annual variation gives a more accurate measure of the real improvement or deterioration of the local macroeconomic context. In other words, the proposed GDP change score observes the pace of growth (or decline) of the Gross Domestic Product indicator and a static economy.

In other words, the proposed GDP change score observes the growth rate (or decline) of the Gross Domestic Product indicator and a stagnant economy, without annual growth or decline, would therefore obtain 5 points out of 10.

Once the limits of the L and U variability interval have been determined, with the two regional-national methods, as described for the other indicators, the score relating to the variation in GDP is calculated using the following formula:

$$P_P = \frac{D_P - L}{U - L} 10$$

Note that in this case it is not necessary to consider the reciprocal (10-) since high changes in GDP will have to correspond to high GDP scores. The regional and national scores are shown below, calculated in the manner described above, in the two updates T0 (2019) and T1 (2020). For the first update, the 2009-2017 time series was considered, while for the second, 2010-2018.

Micro component

For the structuring of the theoretical reference framework and the data collection questionnaire relating to the micro component of the FWI, the Financial Wellbeing Conceptual Model proposed by prof. Elaine Kempson (University of Bristol).

This model starts from the definition of financial well-being, on the basis of the three elements that make it up and attempts to describe it by taking into consideration the relationships between four key issues that influence it. The elements that make up financial wellbeing are:

1. The ability to meet financial commitments (e.g. rents, utility bills, and loan payments)

2. The extent to which people have felt comfortable with their financial situation over the past year, how comfortable they imagine they will be in the near future, and how their finances have allowed them to enjoy life

3. Resilience for the future - the ability to cope with a significant unexpected expense or decline in revenue.

While the four key themes are:

- *Social and economic environment*;
- *Financial knowledge and experience acquired;*
- *Attitudes, motivation and biases*, or psychological factors such as attitudes, motivations and cognitive biases;
- *Financial capable behaviour*, or financially aware behaviour.

The micro component of the index was formulated on the basis of this theoretical model. The corresponding themes selected, to which the fifteen aspects that make up the component refer, are: Personality, Knowledge, Attitudes and Behaviours (Table1). Each of these aspects is evaluated on a scale from 1 to 10 and is added to the others with equal weight, thus originating a maximum score of 150 points.

Theme	Topic
Personality	Time orientation
	Impulsiveness
	Need for social approval
	Self-control
	Locus of control
Knowledge	Financial knowledge
Attitudes	Saving attitude
	Attitude for aware debt
	Confidence in one's ability to manage money
	Concern about one's future financial situation
Behavior	Saving ability and awareness
	Recourse to debt
	Planning and budgeting
	Expense monitoring
	Informed choice of products

Table 1 – Structure of the micro component of the Financial Wellbeing Index

Below is a brief description of each of the aspects considered:

- *Time orientation*: propensity of the individual to think in perspective, to plan and to focus on the long term;
- *Impulsiveness*: propensity of the individual to ponder and evaluate situations in detail before acting;
- *Need for social approval*: propensity of the individual to seek acceptance and esteem for the social context to which he or she belongs;
- *Self control*: propensity of the individual to control their impulses;
- *Locus of control*: propensity of the individual to believe that the events of his existence are caused by internal causes (his behaviour and his actions) or external (chance, actions or will of others) independent of his will;

- *Financial knowledge*: survey of some basic economic and financial knowledge, discussed during the course;
- *Savings attitude*: aptitude of the individual to spend and save;
- *Attitude to aware debt*: aptitude of the individual to be aware of the debts he intends to contract (e.g. purchases in instalments);
- *Confidence in one selves ability to manage money*: aptitude of the individual to think that he has the knowledge and skills necessary to understand the economic and financial choices presented to him;
- *Fear and concern about the financial situation of the following year:* frequency with which the individual tends to be in a state of apprehension about his own economic possibilities, relative to the next twelve months (not having the capacity to save, not meeting the debts, being unemployed or in a job that is not profitable enough);
- *Savings ability and awareness:* what percentage of income is saved and in what instruments it is invested in;
- *Recourse to debt:* frequency with which the individual incurs debts to meet daily or unexpected needs;
- *Planning and budgeting:* the extent to which the individual plans his future expenses and allocates resources to different areas;
- *Expense tracking:* extent to which the individual monitors his past spending and savings;
- *Informed choice of products*: extent to which the individual tends to inquire about possible products to buy, both financial and non-financial.

The micro component of the FWI was assessed thanks to the processing of the data obtained from the questionnaires administered to the students, direct beneficiaries of the action of the GLT Foundation.

3. The questionnaire

The questionnaire, designed to assess the micro-component of the financial well-being index, includes 2-4 questions for each aspect described in the previous section.
The survey is structured and consists of 60 closed questions, 6 of which from the personal data, which capture a specific aspect of financial well-being, relative to the element in question.

The scores of the items, on a scale of 1-10, have been attributed in such a way that a higher score always corresponds to a higher level of financial well-being.

The questions were all similarly weighted within each domain, i.e. their score contributes equally to the score of the area evaluated.

4. The experimentation

The case: the Donne al Quadrato project

The Donne al Quadrato project conceived, implemented and promoted by the Global Thinking Foundation allowed the FWI experimentation to start, with the aim of measuring the social impact on the participants of the financial education courses provided within the project.

Results

This report presented research results regarding the assessment of the impacts of the Donne al quadrato financial training course in the year 2019/2020.

To show the impacts, reference was made to financial well-being described by different dimensions, subjective and objective, which make up people's financial behaviour.

The construction of a synthetic index, based on the studies of the World Bank and the University of Bristol, has made it possible to analyse a series of objective and subjective financial characteristics and statistically describe the way in which various components relate to the financial well-being of a group of people. The experimentation was then carried out on samples from different geographic regions and at different times. Therefore, the index provides a holistic method for measuring the financial well-being of individuals over time and space. The results of the trial showed that financial education could generate a range of changes not only in knowledge but also in financial skills and behaviour, as well as the financial well-being of participants. The findings help us understand the role of "what people know and do" for their financial well-being.

Financial education can help individuals improve, their financial situations and ultimately their financial well-being by helping them improve their economic attitudes and behaviour.

The results show that the aspect that recorded the most consistent growth concerns the individual's aptitude to be aware of the debts he intends to contract (e.g. instalment purchases) (Aptitude to aware debt +21%), also followed by personality aspects, such as the individual's propensity to ponder and evaluate situations in detail before acting (Impulsivity + 10%) and the individual's propensity to believe that the events of his existence are caused by internal causes (his behaviour and his actions) (Locus of control + 9%). Also, with regard to behaviours, the results show a significant improvement, for example, in the extent to which the individual monitors his expenses and savings (Monitoring of expenses + 12%). In particular, the study suggests the need to increase plans and projects for the development of financial skills and attitudes which, through the generation of virtuous behaviour, reduce fears about one's economic possibilities (not having the capacity to save, not meeting the debts contracted, being unemployed or in a job that is not profitable enough, etc...) increasing self-efficacy and financial well-being.

References

Atkinson, A., Messy, F. A. (2011). Assessing financial literacy in 12 countries: an OECD/INFE international pilot exercise. *Journal of Pension Economics & Finance*, **10**(4), pp. 657-665.

Atkinson, A. and F. Messy (2012), Measuring Financial Literacy: Results of the OECD / International Network on Financial Education (INFE) Pilot Study, *OECD Working Papers on Finance, Insurance and Private Pensions*, No. **15**, OECD Publishing, Paris, (FR)

Delafrooz, N., Paim, L. H. (2011). Determinants of financial wellness among Malaysia workers. *African Journal of Business Management*, **5**(24), 10092-10100.

Gerrans, P., Speelman, C., Campitelli, G. (2014). The relationship between personal financial wellness and financial wellbeing: A structural equation modelling approach. *Journal of Family and Economic Issues*, **35**(2), pp. 145-160.

Hayes, D., Evans, J., Finney, A. (2016). *Momentum UK Household Financial Wellness Index: Wave one*. Personal Finance Research Centre (PFRC), University of Bristol for Momentum UK.

Holzmann, R., Mulaj, F., & Perotti, V. (2013). *Financial capability in low-and middle-income countries: measurement and evaluation*, World Bank, Washington, DC, (USA).

Kempson, E., Perotti, V., Scott, K. (2013a). *Measuring financial capability: a new instrument and results from low-and middle-income countries*, World Bank, Washington, DC, (USA).

Kempson, E., Perotti, V., Scott, K. (2013b). *Measuring Financial Capability: Questionnaires and Implementation Guidance for Low-, and Middle-Income Countries*, World Bank, Washington, DC, (USA).

Kempson, E., Finney, A., & Poppe, C. (2017). Financial well-being, a conceptual model and preliminary analysis, *SIFO Working Paper* No. **3**-2017, Oslo and Akershus University College of Applied Sciences, Oslo, (NO)