EFFECTIVE FINANCIAL EDUCATION FOR ENTREPRENEURS

Technical report

Catalina Estrada-Mejía
María Piedad Valero
Daniela Castaño

THINK FORWARD INITIATIVE

EFFECTIVE FINANCIAL EDUCATION FOR ENTREPRENEURS*

TECHNICAL REPORT

Catalina Estrada-Mejía, María Piedad Valero & Daniela Castaño†

November 2019

Abstract

Our main goal was to test whether entrepreneurs that participated in a novel and innovative methodology for teaching financial literacy called Aequam+Do perceived changes in the way they manage their finances. Twenty-four entrepreneurs, who manage small to medium-sized enterprises, participated in the programme, following which we observed positive changes in the participants' well-being, financial knowledge, and financial skills. Specifically, after the programme participants reported higher levels of financial self-efficacy, and a reduction in their tendency to buy on impulsive, or spontaneous and unreflectively. We also found that following the programme, the participants' idea of money being dirty, immoral or bad had been largely replaced by a more positive attitude towards engaging in supportive financial behaviour such as taking credit, investing money, planning expenditures, and saving money. Finally, results showed that following the programme the majority of the participants had detected and eliminated financial leaks, had taken action to separate their business and personal finances, and to deal with problematic debts. These findings have implications for entrepreneurs looking to improve their financial literacy and for the development of financial education programmes aimed at entrepreneurs and the general population.

Keywords**:** Financial education, Entrepreneurs, Financial self-efficacy, Financial knowledge, Financial skills

* This report has been prepared by the authors for the Think Forward Initiative.

† Estrada-Mejí, Universidad de los Andes, c.estrada395@uniandes.edu.co; Valero, Aequam, mvalero@aequam.com.co; Castaño, Universidad de los Andes, da.castano.forero@gmail.com

1. Introduction

Entrepreneurism remains a global economic force that continues to gain momentum in South America as well as in Europe (entrepreneur.com, 2019). Unfortunately, it has been demonstrated that many entrepreneurs lack the financial knowledge and financial skills necessary to reach their maximum potential (Lentz, Smetsers, Vergeer, & Grotenhuis, 2016) and that deficient money management is one major cause of entrepreneurial failure (Workspace, 2019). In this project, we aim to study whether a novel methodology for teaching financial literacy, called Aequam+Do, can help entrepreneurs to achieve higher financial knowledge, more effective financial skills, and better financial outcomes. We focus on financial outcomes related to reducing earnings insecurity and volatility, and recognising and coping with problematic debt.

Numerous financial education programmes are available on the market, but most work under the premise that it is possible to develop a master key or a universal formula that perfectly meets and solves everyone's money management needs. Furthermore, some of these programmes are based on the preconception that financial education should mainly consist of financial and economic theory, as this is the knowledge that has been thought of as necessary for successful outcomes. This approach, however, has proved to be ineffective in changing people's behaviour in the short and long run (Fernandes, Lynch, & Netemeyer, 2014). We believe effective financial education programmes that are likely to lead to visible, concrete and positive results need to be aimed at the recognition, activation and sensitisation of each individual's own resources.

In order to address this challenge, we aim to further test a novel teaching methodology to (i) promote learning and the acquisition of knowledge, suitable money management tools and guidelines, (ii) improving the financial decision making process, and (iii) implementing responsible and sustainable personal and family finances. The methodology is called Aequam+Do and was designed by Aequam (http://aequam.com.co/wp/). Its main premise is that effective money management is achieved by striking a balance between emotional and rational components. That is, it combines logical reasoning processes with intuitive elements. The methodology encourages problem solving through creativity, imagination, and the sensory system by fully exploiting brain potential and creating great synergies by simultaneously working both hemispheres. The methodology focuses on the identification of individuals' real situation with their money by exploring the three following dimensions: Subjective representation of reality, internal operating system, and degree of technical knowledge in the matter.

The Aequam+Do methodology is aimed at exploring, diagnosing and strengthening individuals' financial knowledge, financial competencies and skills in order to achieve systemic and long-lasting changes in the way they manage their finances. The programme has allowed entrepreneurs to acquire practical tools that help them develop self-confidence in terms of the future envisioning of their business projects. These include, for example, recognition of day-to-day money leaks, money distribution among spending categories, debt amortisation parameters, straightforward saving plans (S.M.A.R.T objectives methodology), proper management of income volatility, and confrontation of their preconceptions regarding money management.

The main research question we aim to answer is whether participants in a financial education programme -using the Aequam+Do methodology- experience a positive impact on their financial knowledge, financial skills, financial attitudes, financial behaviours, and financial outcomes following programme participation. In particular, the present study examined the following research questions:

1. Did the entrepreneurs experience changes in their **financial well-being** following programme participation?

2. Did the entrepreneurs experience changes in their **financial knowledge** following programme participation?

3. Did the entrepreneurs experience changes in their **financial skills** following programme participation?

4. Did the entrepreneurs experience changes in their **financial attitudes** and **money-related emotions** following programme participation?

5. Did the entrepreneurs experience positive changes in their **financial behaviours** following programme participation?

6. Which factors correlate with greater financial well-being?

2. Programme description

In this section, we first explain the Aequam+Do methodology, followed by a detailed explanation of the specific method applied to conduct the investigation; that is, we explain how the programme was conducted and how it was assessed.

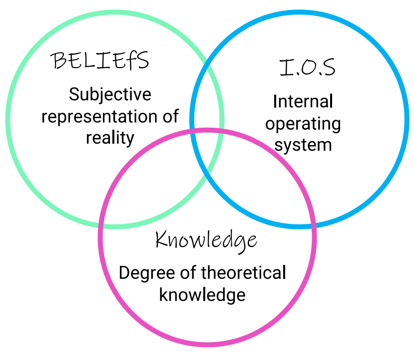
2.1 AEQUAM+DO methodology

The methodology arose as a result of several years of observing how people manage their personal finances and the reasons they give to explain their behaviour. Between 2016 and 2018, Aequam decided to explore the drivers that influence people's financial behaviour. Through individual interviews, individual training sessions (over 40 individuals and 260 face-to-face hours of work), and several group sessions (20 face-to-face workshops and conferences with 20 participants on average) Aequam identified three major components that determined people's relationship with money and financial decisions. These components were:

1) Everyone has their own beliefs about money and those beliefs define their relationship with money.
2) Everyone has a singular "money personality"; that is, a combination of characteristics or qualities that form an individual's distinctive character regarding money.
3) The sensory system influences people's behaviour and therefore the way they solve money issues and how they make financial decisions.

The Aequam+Do methodology was designed with these findings as guidelines. The main premise of the methodology is that effective money management is achieved through a balance between emotional and rational components. That is, it combines logical reasoning processes with intuitive elements. The methodology encourages problem solving through creativity, imagination and the sensory system. In this way, the potential of the brain in its entirety is exploited and great synergies are generated by the simultaneous work of its two hemispheres. The methodology focuses on the identification of the real situation of the individual with his or her money (based on self-experiences) through the exploration of the three following dimensions: Subjective representation of reality, internal operating system, and degree of technical knowledge in the matter. We define these dimensions below.

Figure 1. Methodology dimensions



The first dimension called "subjective representation of reality" refers to the importance of identifying the belief system and the ideas about money management that individuals have been incorporating throughout their lives. These ideas define their identity, shape their thinking and govern their behaviour. For instance, a person with deep-rooted ideas about money being an instrument of development, growth and prosperity, is someone who can take on great challenges and make them a reality. In contrast, someone who holds the belief of money being bad or dirty may feel embarrassed to discuss money or, in some cases, even reluctant to charge clients at all. For this reason, the first step is to explore, diagnose and work on the optimisation of the individuals' internal world in order to evoke structural changes in people's way of thinking, feeling and acting when it comes to money matters. For the work of re-engineering one's beliefs, the Aequam+Do methodology uses tools based on the Neuro-linguistic Programming techniques developed by Richard Bandler and John Grinder (Bandler, Grinder, & Andreas, 1979) and Robert Dilts (Dilts, 1999). Specifically, it uses meta-programmes, representational systems, Milton Model, anchoring, and real vs. internal maps.

The second dimension called the "internal operating system (IOS)" refers to personality traits, representation systems and perceptual channels. Specifically, we propose that individuals' personality styles and perceptual systems align with how they approach and resolve money issues and make financial decisions. For example, a meticulous, process-oriented and rule-compliant person would tend to avoid unnecessary spending and compulsive purchases, and ensure meeting his or her financial obligations. On the other hand, a visionary person, motivated by creativity and trend-setting, will prefer improvisation to the careful planning of his or her finances. To approach the work in this dimension, we combined different methods such as the Moulton Marston's DISC (https://www.discprofile.com/) and the perceptual channels of the NLP Model of Bandler and colleagues (Bandler, Grinder, & Andreas, 1979). We also developed a set of didactic and practical exercises to help people discover their personality style, and their predominant brain hemisphere and perceptual channel.

The third dimension that we explored was the "degree of theoretical knowledge". Although some people have empirically learned to efficiently manage their money with a minimum of financial and economic theory, it would be a great distortion to believe that theory is not required in the achievement of good financial outcomes. Thus, learning about concepts, tools, and healthy guidelines regarding money generation and management, and working on personal financial planning are essential to creating favourable, deep and lasting changes in the way people think, feel and act (OECD, 2018). To work on this dimension, we focused on inter-structuring pedagogical models, rather than traditional ones, that encourage the student to participate actively in the training process, to establish a relationship between student and teacher based on trust, empathy, and assertive communication. Assertive, precisely because for many, addressing the issue of money with a stranger is not simple or comfortable, let alone talk about how we use it.

In sum, the Aequam+Do methodology is aimed at exploring, diagnosing and strengthening the financial knowledge, financial competencies, and financial skills of individuals in order to achieve systemic – rather than superficial - changes, in the way they manage their finances.

2.2 Programme description

Participants took part in 11 face-to-face in class sessions (3 hours per session) and 5 virtual sessions. The programme ran for a period of 16 weeks, and was organised as follows. In Phase 1 the financial situation of each participant was assessed, based on the three large dimensions contemplated by the methodology. Participants identified the elements that have determined their current financial situation, the main challenges, achievements, and failures. They also identified rational, emotional, technical, and empirical factors that have influenced their decisions and financial choices, in both personal and entrepreneurial matters. The main purpose of this phase was to determine the starting point for each participant. Phase 2 developed the main pedagogical process, the main goal of which was to present participants with technical knowledge, money management techniques, and to encourage them to apply these in their daily activities. The programme ended with Phase 3, in which we summarised and synthesised the work done during the programme. Participants recapped the list of commitments and action plans they will implement to generate real and effective changes in their financial management. All classroom sessions in which participants went to lectures and completed paper and pencil exercises took place at Universidad de los Andes in Bogotá. In the online sessions, participants filled out questionnaires and applied the new concepts to their daily activities. Below we present the topics covered and the activities developed in all sessions. In Appendix A, we report all measures completed by the participants and we included some examples of the activities conducted during the face-to-face classroom sessions.

Phase 1: Exploration and diagnostic

Session 1 (virtual). Participants completed a set of online questionnaires designed to identify their financial well-being, financial knowledge, financial self-efficacy, impulse buying behaviour, attitude about money, and demographic characteristics.

Session 2 (in class). Introduction. This session was used to welcome participants on the programme, to deliver the results of previous virtual tests, and perform a set of didactic exercises. The exercises were aimed at identifying personality traits and patterns, basic financial knowledge and subjective representations of the world. The participants were also told about new concepts and definitions.

Session 3 (virtual). A set of digital questionnaires was emailed to participants to explore and identify their emotions towards money management.

Session 4 (in class). Dimension 3: Knowledge. The main purpose of the activities executed during the session was to complete the exploration and diagnosis of the participants' financial situations. Specifically, we covered the following topics: 1) income distribution, 2) money leaks, 3) unexpected expenses (unforeseen), 4) knowing their current accounts (monthly income, expenses, debts and commitments). The exploration was performed using quantitative tests.

Session 5 (virtual). A set of digital questionnaires was emailed to participants to invite them to explore and identify their beliefs and pre-established ideas regarding money.

Session 6 (in class). Dimension 1: Beliefs. A number of practical exercises were performed in order to ensure better understanding of this aspect. Participants were asked to discover the two most common expressions they use on a daily basis to refer to money, as well as to perform a "role play" game in pairs in which they had to discover how to destroy one of their partner's limiting ideas about money. The following NLP tools were used during the session: meta-programming, rapport, presuppositions, and metaphors from the Milton Model.

Session 7 (virtual). A set of digital questionnaires, including a DISC TEST was emailed to participants to invite them to explore and identify personality styles.

Session 8 (in class). Dimension 2: IOS. Participants were provided with an explanation of the brain hemispheres and layers, perceptual channels and personality patterns and traits. They also had the opportunity to perform several practical exercises designed to identify brain hemisphere and sensory system predominance, which completed the results obtained from the test they filled out in the previous virtual session. To explore Dimension 2, we included qualitative tests that are commonly used in NLP, as well as qualitative exercises to identify personality patterns used in NLP and talent management programmes.

The participants were taught about new theoretical concepts, definitions, tools and habits. Thus, the main goals reached during Phase 1 related to exploration and diagnosis, but also to some pedagogical processes.

Phase 2: Learning new concepts and habits

The main pedagogical process was developed in Phase 2, which, like Phase 1, combined lectures with individual virtual homework.

Session 9 (in class). Financial leaks: A healthy financial habit. The purpose of the session was to generate a deeper awareness about the importance of carefully considering large and small expenses. Several exercises and activities were performed during the session that combined theoretical and practical elements to improve the participants' understanding of the concepts and to facilitate the adoption of healthy habits regarding money leaks.

Session 10 (in class). Other healthy financial habits. In this session, we focused on other healthy practices such as: how to handle unforeseen events, recognising surprise expenses that are not really surprising, learn how to make timely provisions and understand how hormones influence people's financial decision making. The session combined practical activities and technical concepts.

Session 11 (in class). Managing income volatility. Here we presented alternative income distribution, encompassing five categories: savings, contingencies, necessary expenses, debt and optional expenses. These alternatives teach participants adequate means of distributing money, giving priority to savings and obligations, as opposed to desires. Additionally, knowing the amount of money needed to meet financial needs and commitments provides a means by which to manage income volatility. We asked participants to complete the exercises in Excel.

Session 12 (in class). Defining objectives and planning for the future. Every financial objective needs to be well defined to ensure its success. In this session, we focused on presenting the SMART methodology to define objectives. Since entrepreneurs are constantly defining business objectives and financial goals, it is highly relevant for them to know how to set Specific, Measurable, Achievable, Relevant, and Time-bound financial objectives. During this session, the participants were taught basic financial equations and best practices to set up financial goals. We also taught participants about two essential tools for financial planning: cash flow and budget. They used personal information collected throughout the programme to build their own cash flow and budget. We asked participants to complete the exercises in Excel.

Session 13 (in class). Managing debt. During this session, we taught participants to differentiate productive and destructive debts, understand how to calculate the financial costs of a loan and credit card, what questions to ask before taking a loan, and a series of guidelines to efficiently manage debts. We asked participants to complete the exercises in Excel.

Session 14 (in class). Business and personal finances. In the last session of Phase 2, we concentrated on differentiating personal from business finances. This distinction was made because entrepreneurs often mix-up household accounts with business accounts, as well as income and expenses. They also tend to make financial decisions combining personal and business interests, not to mention that there is an erroneous idea that knowing how to run the business will teach them how to manage personal finances or vice versa. In this session, the participants were taught a set of well-known practices to manage personal and entrepreneurial finances, they discovered which accounts were mixed and defined self-commitments to fix possible mistakes they were making. We asked participants to complete the exercises in Excel.

Phase 3: Debriefing and closing

In Phase 3, we gave participants an exercise to do in order to summarise and synthesise the work done during the previous phases.

Session 15 (virtual). This session was conducted almost four weeks after Session 14. Participants completed a set of online questionnaires for the second measurement of the main dependent variables. The objective was to give them enough time to apply the new concepts and new habits before measuring the main outcome variables again.

Session 16 (in class). Final session. Participants recapped on the list of commitments and action plans that they set up to generate real and effective changes in their financial management. Many entrepreneurs asked questions in order to clarify doubts; some of them publicly shared their personal experiences during the programme and gave testimonials about the changes they had experienced in their finances. Participants received a personal folder that contained all personal information collected during Phase 1 and 2, in both personal and virtual sessions, as well as an attendance certificate.

2.3 How this programme differs from other standard financial literacy programmes

Based on our experience, we consider that the Aequam+Do methodology differs from other standard financial literacy programmes in at least three aspects. First, the programme aims to teach participants that successful money management is not necessarily given by the degree of financial knowledge. Emotional factors, thought patterns and personality styles also influence how we address money matters and how we make our financial decisions.

Second, the programme combines techniques and tools from Neuro-linguistic Programming to teach participants about money management and informed financial decision making. The programme also places a lot of importance on the exploration of participants' beliefs about money incorporated in their mental makeup from an early age, in order to promote positive and empowering ideas.

Finally, the programme that focuses on working financial concepts at a very basic level, which are suitable for everyone, regardless of age, gender, occupation, education level, nationality, etc.

3. Methodology

3.1 Sample

Twenty-four entrepreneurs, who manage small to medium-sized enterprises, participated in the programme. The selection process was conducted as follows: We sent an open invitation to all entrepreneurs registered at the Entrepreneurship Centre that fulfilled the following conditions of being in operation and having a current debt. In the invitation we told the participants what the programme was about, its duration, and that they needed to be able to commit to completing all sessions. From the 80 entrepreneurs that manifested an interest in the programme, we randomly selected 35 and invited them to participate. Of these, 11 attended the first sessions but did not complete all sessions. The age range for the final sample was 21 - 62 years, with an average of 36, 39% male and 61% female.

3.2 Measures

To test our research questions, we selected measures to assess participants' (i) financial well-being, (ii) financial knowledge, (iii) financial skills, (iv) financial attitudes and emotions, and (v) financial behaviours. For some domains, we included validated scales that captured the construct in a single score (i.e., financial well-being and self-efficacy). For other domains (i.e., managing income volatility), a validated scale was not available, so we developed our own measure. The measures used in our analysis are described below. Their descriptive statistics are presented in Table 1 and the complete list of items can be found in Appendix A. The dependent variables - variables that we hypothesised were likely to be affected by programme participation - were measured at the start of the programme (hereafter T1) and one month after the end of the programme (hereafter T2). Control variables such as personality traits, dispositional measures and demographic information were measured on only one occasion. The exact timing for each measurement can be found in Appendix A.

3.2.1 Financial well-being

To assess participants' financial well-being, we used the Financial Well-Being Scale developed by the CFPB (2015a). The scale measures respondents' subjective perception of their financial situation. Specifically, the scale includes questions on four key areas of financial well-being: control over day-to-day, month-to-month finances; the capacity to absorb a financial shock; being on track to meet financial goals; and the financial freedom to make the choices that allow individuals to enjoy life. The scale consists of ten items. For the first 6 items (For example "I can enjoy life because of the way I'm managing my money") participants were asked to rate each item according to the extent to which the item describes them using a 5-point Likert scale ranging from 1 (Does not describe me at all) to 5 (Describes me completely). For the remaining items (For example "I have money left over at the end of the month") participants indicate how often the item applies to them using a 5-point Likert scale ranging from 1 (Never) to 5 (Always). The mean was taken, with reverse scoring where necessary. Higher scores represent higher levels of financial well-being. The Cronbach's α coefficients for the present sample were acceptable (T1 = 0.78; T2 = 0.79).

Table 1: Descriptive statistics of all measures used in the analysis

Variable name	MeasureT1 (*N*=24)		Measure T2 (*N*=24)	
	Mean	*SD*	*Mean*	*SD*
Financial well-being	3.0	.61	3.0	.60
Financial knowledge	.48	.12	.62	.21
Financial skills				
A. Financial self-efficacy	3.6	.74	4.1	.50
B. Impulse buying	2.5	.88	2.1	.81
Financial attitudes and emotions				
A. Attitude of money being bad	2.5	.97	1.9	.83
B. Emotional reactions				
Taking credit	1.6	.87	1.8	.91
Spending money	2.2	1.32	2.2	1.28
Investing money	3.9	1.48	4.2	1.20
Planning expenditure	3.5	1.32	3.9	1.28
Saving money	3.7	1.57	4.2	1.38
Control variables				
A. Subjective numeracy scale	3.6	.67		
B. Spendthrift	2.8	.84		
C. Financial decision avoidance	2.3	1.06		
D. Analytical - Rational thinking	3.3	.71		
E. Self-control	3.3	.51		
	Measure T2 (*N*=24)			
Financial behaviours	Yes (%)	No (%)	Future (%)	Other (%)
A. Eliminating financial leaks	87.5	4.2	4.2	4.1
B. Planning for income volatility	37.5	12.5	50.0	0.0
C. Dealing with problematic debts	66.7	4.2	12.5	16.6
D. Business and personal finances	75.0	4.2	12.5	8.3

3.2.2 Financial knowledge

We used a scale developed by Aequam to test similar populations. The scale uses 20 items to assess explicit knowledge of the core financial concepts of savings, compound interest, rate of return, and risk diversification. Each question is graded as right or wrong, and all scores are added, with higher scores indicating greater knowledge. An example of the questions used is presented below.

If you deposit money in the bank for two years without withdrawing it and agree to receive an interest of 15% per year with reinvestment of interest:

1. The bank will pay you more money in the second year compared to the first.
2. The bank will pay you the same amount each year.
3. The bank will pay you less money in the second year compared to the first.
4. I don’t know.

3.2.3 Financial skills

Financial skills refer to a specific set of skills that enable individuals to execute financial decisions, including monitoring and adapting as necessary to stay on track (CFPB, 2015b). We tap into this construct by measuring participants’ financial self-efficacy defined as participants’ belief about their capability of organising and executing courses of action to achieve their ultimate financial goal (Wood & Bandura, 1989). We also assess participant impulse buying behaviour. Impulsiveness is a concept that refers to the "tendency to buy spontaneously, unreflectively, immediately, and kinetically" (Rook & Fisher, 1995, p. 306).

A. Financial self-efficacy

Participants’ financial self-efficacy was assessed by the New General Self-Efficacy Scale (Chen, Gully, & Eden, 2001), which consists of eight items. Participants were asked to rate each item using a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The mean was taken, with reverse scoring where necessary. Higher scores represent higher levels of financial self-efficacy. The Cronbach's α coefficients for the present sample were acceptable (T1 = 0.86; T2 = 0.86).

B. Impulse buying

To measure the impulse buying tendency, we used the scale developed by Weun, Jones and Beatty (1998), which has five items measured on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Higher scores represent higher a tendency to buy impulsively. The Cronbach's α coefficients for this sample were acceptable (T1 = 0.75; T2 = 0.87).

3.2.4 Financial attitudes and emotions

A. Attitude to money

The way you think or feel about finances is your financial attitude. A person's financial attitude can influence his or her behaviour and be an indicator of financial management practices such as saving, spending, and taking on credit card debt (Chien & Devaney, 2001). Having a positive attitude toward financial management can have a positive effect on an individual's intentions to save and invest, limit credit card use, and manage his or her finances in more beneficial ways (Borden, Lee, Serido, & Collins, 2008). A person whose attitude towards money is that it is an instrument for development, growth and prosperity, is a person capable to take on great challenges and make them a reality. In contrast, a person who believes that money is dirty, immoral or bad might be less inclined to learn about money management and to be personally involved with monetary decisions. We investigated the alteration in the strength of the participants' belief about being bad before and after participating in the programme.

We constructed a composited measure to assess how strongly participants felt that money is something bad. Participants were asked to indicate to what extent they agree with three statements using a scale from 1 (strongly disagree) to 5 (strongly agree). The statements were as follows: "Poor but honest", "Some money avoids worries; too much money attracts them" and "More money equals more problems". Higher scores indicate that the individual holds the attitude more strongly. The Cronbach's α coefficients for the present sample were acceptable (T1 = 0.63; T2 = 0.62).

B. Emotional reactions towards money management

A vast body of psychological literature shows that emotional state can significantly affect decision-making (Elster, 1998). Although the literature on emotions is broad, there is a consensus in the idea that people are more willing to perform actions that they enjoy, feel positive or happy about, than actions that they do not enjoy or that produce negative feelings. In this study, we assess the valence, or the experience of pleasure versus pain, of the emotion triggered by the financial acts of taking credit, spending money, investing money, planning expenditure, and saving money. The expectation is that having more positive affective reactions towards engaging in such behaviours would facilitate their occurrence, and, in turn, positively influence financial outputs. We asked participants to rate their emotional reaction towards engaging in such behaviour using the Self-Assessment Manikin (SAM). SAM is a non-verbal pictorial assessment technique that directly measures the pleasure associated with a person's affective reaction to a stimulus. Responses were converted to a five-point scale ranging from 1 (pain) to 5 (pleasure).

3.2.5 Financial behaviours

A. Eliminating financial leaks

In T2 we asked participants to report whether they had identified financial leaks and whether they had treated them appropriately (e.g., to eliminate the leak or to include it in the budget). Respondents stated their answer using the following scale: 1= I did, 2 = I did not, 3 = I will do it in the future, 4 = Other. Next, they were asked to answer whether identifying financial leaks had affected their financial well-being in any way. Participants answered using a 3-point scale: 1= It has had no effects so far, 2 = It has had positive effects, 3 = It has had negative effects.

B. Planning for income volatility

Participants reported whether they had formed an income-smoothing fund in order to smooth out the peaks and valleys throughout the year. The idea of this fund is to build up a cushion during the good months that they could tap into during the bad months. Specifically, in T2, respondents answered the question "Have you formed an income-smoothing fund?" using a 4-point scale (1= I did, 2 = I did not, 3 = I will do it in the future, 4 = Other). They were then asked to indicate whether forming (or not) an income-smoothing fund had had any effect on their financial well-being using a 3-point scale (1= It has had no effects so far, 2 = It has had positive effects, 3 = It has had negative effects).

C. Dealing with problematic debts

At the end of the programme (T2) participants indicated whether or not they had made beneficial changes in relation to their debt management and the effect of this action on their financial well-being. Participants answered using the same scales described for the two financial behaviours explained above (eliminating financial leaks and planning for income volatility).

D. Separating business and personal finances

One of the biggest mistakes made by entrepreneurs is to mix their personal finances with their business finances. At the end of the programme, participants indicated whether they had taken action to separate their business and personal finances. They used the same 4-point scale presented for the previous financial behaviours. They then indicated whether or not engaging in this behaviour had had any effect on their financial well-being.

3.2.6 Control variables

A. Subjective numeracy scale

The subjective numeracy scale developed by Fagerlin and colleagues (Fagerlin, et al., 2007) is a self-report measure of perceived ability to perform various mathematical tasks and preference for the use of numerical versus prose information. The subjective numeracy scale is both reliable and highly correlated with objective numeracy scales (Lipkus, Samsa, & Rimer, 2001). The eight-item scale contains no mathematics questions and has no correct or incorrect answers. Instead, it consists of four questions asking respondents to assess their numerical ability in different contexts and four questions asking them to state their preferences for the presentation of numerical and probabilistic information. Higher scores represent higher levels of subjective financial well-being. The Cronbach's alpha coefficient for the present sample was 0.84.

B. Spendthrift versus tightwad

The Tightwad-Spendthrift scale (Scott, Cryder, & Loewenstein, 2008) is designed to assess the extent to which an individual finds the prospect of spending money painful. Tightwad individuals tend to experience a high pain of paying and spend less than they would ideally like to spend, whereas spendthrift individuals tend to experience insufficient pain and spend more than they would ideally like to spend. The scale has four items. Higher scores represent a higher tendency towards being a spendthrift. The Cronbach's alpha coefficient for the present sample was 0.70.

C. Financial decision avoidance

We assess the tendency to avoid financial decisions using the following three items: "I try to avoid situations that require me to make financial decisions", "I prefer to not make decisions related to money", and "I don't like to think about issues involving investments and financial decisions". Participants answered on a 5-point Likert scale from 1 (completely disagree) to 5 (completely agree). Higher scores indicate a higher tendency to avoid financial decisions. The Cronbach's alpha coefficient for the present sample was 0.94.

D. Analytical - Rational thinking

We measured participants' preference for using reason rather than feelings to guide decisions (Hsee et al. 2015). Some people base their decisions largely on reason, such as facts, functions, and values (e.g., "I will buy this car because it has a high horsepower motor and is on sale today"), whereas others base their decisions largely on feelings (e.g., "I will buy this car because I like the feeling of driving it"). The scale has six items measured on a 5-point Likert scale from 1 (completely disagree) to 5 (completely agree). The following is an example of the items: "When making decisions, I like to analyse financial costs and benefits and resist the influence of my feelings". Higher scores indicate a preference for using reason rather than feelings. The Cronbach's alpha coefficient for the present sample was 0.79.

E. Self-control

To assess individual differences in self-control we used the Brief Self-Control Scale (Tangney, Baumeister, & Boone, 2004), a 13-item abbreviation of the Self-Control Scale to measure five domains of self-control: controlling thoughts, controlling emotions, controlling impulses, regulating behaviour or performance, and habit-breaking. Participants rate each item on a 5-point Likert scale from 1 (completely disagree) to 5 (completely agree). An example of the items is the following: "I am good at resisting temptations". Higher scores indicate higher self-control. The Cronbach's alpha coefficient for the present sample was 0.75.

3.3 Overall analytical strategy

As mentioned earlier, our main objective was to explore whether participating in the financial education programme designed by Aequam had any effect on the financial knowledge, financial skills, financial attitudes, and financial outputs of the participants. The expectation was that participating in the programme would have a positive effect on some of these measures. In order to explore our hypothesis, we used the following analytical strategy. For each dependent variable, we compared the scores before (T1) and after (T2) the programme using a paired t-test, which takes into account the dependence between measurements and, for this reason, is more powerful than the two-sample tests. We also performed correlational analyses to explore the nature of the relationship between variables.

4. Results

4.1. Did the entrepreneurs experience changes in their financial well-being?

We first examined the question of whether entrepreneurs reported changes in their subjective financial well-being. We found no statistically significant differences when comparing the financial well-being scores in T1 and T2 ($Media_{T1}$ = 3.0, SD_{T1} = .61; $Media_{T2}$ = 3.0, SD_{T2} = .60; p > .10). To better understand the phenomena, we looked at each of the 10 items separately. We found that there were statistically significant differences for the following two items: “I am securing my financial future” and “I can enjoy life because of the way I’m managing my money”. Following programme conclusion, participants reported agreeing to a greater extent with both statements.

We used an additional measure to assess participants’ well-being after the programme. In T2, we asked participants to indicate whether they had engaged in the financial behaviours discussed during the programme (i.e., Eliminating financial leaks, planning for income volatility, dealing with problematic debts, and separating business and personal finances) and whether engaging in these financial behaviours had affected their current financial well-being in any way. The majority of participants reported that engaging in these behaviours had had positive effects on their financial well-being (between 80% and 100% depending on the behaviour).

4.2. Did the entrepreneurs experience changes in their financial knowledge?

The purpose of this research question was to understand whether programme participation has any effect on the participants’ financial knowledge. To examine this, we compared the score of our measure of financial knowledge in T1 with the score in T2. We found a statistically significant improvement in the participants’ financial knowledge (p < .001). The mean score increased from .47 (SD = .12) in T1 to .62 (SD = .21) in T2. The score indicates the percentage of questions answered correctly.

4.3. Did the entrepreneurs experience changes in their financial skills?

We next investigated whether programme participation helped to improve the entrepreneurs’ financial skills. We found a statistically significant improvement in the participants’ self-efficacy scores following programme participation (p < .001). The mean score changed from 3.6 (SD = .73) in T1 to 4.0 (SD = .50) in T2. Likewise, we found evidence that after the programme, participants reported a decrease in their tendency to impulse buy in a spontaneous and unreflective manner. The mean score for the measure of impulse buying decreased from 2.5 (SD = .93) in T1 to 2.1 (SD = .81) in T2 and the difference is statistically significant (p = .01).

4.4. Did the entrepreneurs experience changes in their financial attitudes and money-related emotions?

We next investigated whether participants experienced changes in their financial attitudes and money-related emotions after the programme. In T1 the average score was 2.5 (SD = .97), meaning participants held the attitude of money as a bad thing. In T2, the score deceased to 1.9 (SD = .83). The difference is statistically significant (p < .001), indicating that following their participation in the programme, participants’ attitude about money being dirty, immoral or bad was no longer as strong. Next, looking at the money-related emotions, we found that the valence of the emotions elicited by the five financial behaviours was higher in T2 than in T1, indicating that after the programme, participants had a more positive affect towards the behaviours.

However, the differences were not statistically significant (*p-value* for all behaviours > .10).

4.5. Did the entrepreneurs experience positive changes in their financial behaviours?

To examine our research question about changes in financial behaviours, we asked participants to indicate whether they had engaged in some positive financial behaviours after or during the programme. Results showed that 87.5% of the participants had eliminated some financial leaks by the end of the programme and 4.2% mentioned they would do so in the future. Likewise, after the programme, 75% of the participants had taken actions to separate their business and personal finances and 12.5% said that they would do so in the future. Additionally, two-thirds (66.7%) of the participants had taken actions to deal with problematic debts and 12.5% indicated that they would do it in the future. Participants were slower in forming an income-smoothing fund. Results showed that only 37.5% of them had established this fund by the end of the programme.

4.6. Which factors correlate with greater financial well-being?

In this final analysis, we investigated the association between financial well-being and the knowledge, skills, attitudes and personal characteristics assessed in this study (all variables measured in T1). The objective was to detect factors that are strongly associated with financial well-being and that could give us valuable information about factors that could be reinforced through financial education programmes. The pairwise correlation coefficients presented in Table 2 indicate that higher financial knowledge, higher financial self-efficacy, positive emotions towards planning expenditures, and less tendency to avoid financial decisions were associated with higher financial well-being. The complete pairwise correlation coefficients table can be found in Appendix C.

Table 2: Pairwise correlation coefficients between financial well-being and knowledge, skills, attitudes and personal characteristics (measured in T1)

Variables	Correlation coefficients
Financial knowledge	0.53*
Financial self-efficacy	0.62*
Impulse buying	-0.22
Attitude money being bad	-0.16
Emotion *Saving money*	0.18
Emotion *Taking credit*	0.06
Emotion *Spending money*	0.17
Emotion *Investing money*	0.22
Emotion *Planning expenditures*	0.41*
Subjective numeracy scale	0.19
Spendthrift versus tightwad	-0.07
Financial decision avoidance	-0.56*
Analytical - Rational thinking	0.17
Self-control	0.28

Note. **p*<0.05

5. Conclusion

5.1 Key outcomes

Our main goal was to test whether entrepreneurs that participated in a novel and innovative methodology for teaching financial literacy perceived changes in the way they manage their finances. The goal of any financial education programme should be to help individuals to achieve systemic - rather than superficial - changes, in the way they manage their money. We tested whether the **Aequam+Do** methodology could help participants to be more aware of their financial decisions and to identify, recognise and create strategies to reduce their income insecurity or volatility, as well as to use debt effectively.

The programme ran for 16 sessions: 11 face-to-face in class sessions and 5 virtual ones. In the first sessions, we diagnosed the financial situation of each participant by identifying the elements that have determined their financial situation so far, the main challenges, achievements, and failures. We also identified rational, emotional, technical and empirical factors that have influenced their decisions and financial choices. Next, the main pedagogical process was developed through personal meetings with the facilitators. We covered topics related with income, savings, planning, debt, and strategies for separating business and personal finances. In the last session, participants socialised the commitments and action plans that they were planning to follow to generate real and effective changes in their financial management.

Twenty-four entrepreneurs, who manage small to medium-sized enterprises, participated in the programme. The dependent variables - variables that we hypothesised were likely to be affected by participation in the programme - were measured at the start of the programme and one month after the end of the programme.

We found no statistically significant differences in the financial well-being measure before and after the programme. However, looking at each of the items that make up the measurement, we found that after the programme, participants agreed with the following statements to a greater extent: “I am securing my financial future” and “I can enjoy life because of the way I’m managing my money”. Likewise, we found that participants that engaged in constructive financial behaviours after the programme (e.g., reducing financial leaks) reported experiencing improvements in their financial well-being.

The participants’ scores for financial knowledge were higher after the programme. Although the materials and exercises used during the sessions were not particularly focused on technical financial knowledge, some important concepts were discussed and explained. Although we believe financial decisions are influenced by a multitude of factors, it is indisputable that better financial literacy helps people to make more informed decisions.

Next, we explored whether the entrepreneur reported differences in their financial skills after participating in the programme. Financial skills enable individuals to execute financial decisions. We tapped into this construct by measuring participants’ financial self-efficacy, which indicates an individual’s confidence in his or her ability to complete a financial task. We found a statistically significant improvement in the participants’ self-efficacy scores after the programme. Self-efficacy is an important skill when people try to improve their financial situation because merely learning about how to change one’s behaviour is rarely enough to lead one to actually do so. One common barrier to behaviour change is the lack of self-confidence in our own ability to successfully make the change, meaning that people need higher levels of financial self-efficacy to be successful in improving their financial situation.

We also assessed participants' impulse buying behaviour, which refers to buying in a spontaneous, unreflective, and immediate manner. Impulsive spending is dangerous because it can cause financial problems such as significant and unmanageable amounts of debt. We found evidence that after the programme, participants reported a decrease in their tendency to impulse buy, and this is important because research has shown that people that can control their impulse buying behaviour have better financial management practices and enjoy greater financial well-being.

A long tradition of research in behavioural economics has demonstrated the significant role of attitudes and emotions on people's decisions (Han, Lerner, & Keltner, 2007). We found that after the programme, the participants' attitude towards money as something dirty, immoral or bad was reduced. This focus on money as something bad can turn into an intellectual barrier to the entrepreneur's purposes of profit and growth. It is hard to be a successful entrepreneur while simultaneously feeling embarrassed to discuss money or, in some cases, even reluctant to charge clients at all.

We did not find statistically significant differences in the valence of the money-related emotions. However, the mean scores suggest that after the programme, participants had a more positive affect towards engaging in supportive financial behaviours such as taking credit, investing money, planning expenditure and saving money. Many financial decisions are more emotional than they are mathematical. Thus, a person can learn about money management extensively, but ultimately, it comes down to what feels right. Engaging in financial behaviours like saving money or planning expenditures is not pleasant and people generally try to avoid unpleasant activities. Researchers have suggested that one strategy consumers could use to make these behaviours less difficult is to develop deeper emotional incentives for engaging with these behaviours (Klontz & Klontz, 2009). These may enable consumers to more viscerally relate saving, planning or investing to the family, life values, and goals that mean the most to them.

One of the main determinants of our financial situation is our financial behaviour. Results showed that after the programme, the majority of the participants had detected and eliminated financial leaks, and had taken action to separate their business and personal finances, and to deal with problematic debts. Participants were slower in forming an income-smoothing fund that could allow them to manage income volatility. However, 50% of the participants said they would do so in the future.

As an exploratory exercise we examined the relationship between financial well-being and the knowledge, skills, attitudes and personal characteristics assessed in this study. Pairwise correlations revealed that financial knowledge, financial self-efficacy, emotion towards planning expenditures, and a tendency to not avoid making financial decisions were all positively related to higher financial well-being.

We believe that the findings of this project can have significant implications in the development of financial education programmes targeting not only entrepreneurs but also the general population. We think that financial education programmes are an effective mechanism to financially empower individuals. We have some evidence that participants in the financial literacy programme with the **Aequam+Do** methodology experienced positive changes in their behaviours, knowledge and skills. The **Aequam+Do** methodology can be used by companies, universities, NGOs, or other institutions in South America, Europe or anywhere in the world. We aim to further test the methodology in other populations.

5.2 Limitations

Our study has three main limitations. First, the entrepreneurs were not randomly selected. Second, we do not have a proper control group. Third, we do not have information on the long-term effects of the programme. Since the entrepreneurs self-selected themselves to participate in the programme, it is possible that they are more motivated or more capable to learn than other entrepreneurs, which could partially explain the positive findings reported here. We tried to overcome this limitation by comparing the scores from the entrepreneurs in T1 with a control group (See Appendix B) and found no statistically significant differences in most variables. However, the control group only completed the measures in T1. Therefore, we can only test whether these two groups differ in T1 but not whether they also differ in T2. Finally, we do not have information on the possible long-term effects of participating in the programme.

5.3 Recommendations

Based on our experience in this project, we would like to provide some recommendations for entrepreneurs seeking opportunities to improve their financial literacy and for the organisations developing financial education programmes.

We believe that in order to make better decisions, it is necessary to incorporate both rational and emotional components. What we mean by this is that it is of course important to learn the technical financial issues but also about the entrepreneur's financial decision-making style. It is important to identify the belief system and the ideas about money management that the individual has incorporated throughout his or her life. These ideas define their identity, shape their thinking and govern their behaviour. Entrepreneurs should identify whether they see money as an instrument of development, growth and prosperity or as something bad and immoral. They should confront these preconceptions and recognise whether they negatively affect their disposition towards learning about financial issues, or their disposition towards making sound financial decisions.

For companies and organisations developing financial education programmes, this study offers an opportunity to explore whether incorporating a new approach to such programmes could be beneficial. We invite them to combine logical reasoning processes with intuitive elements to promote learning and the acquisition of knowledge, tools and good guidelines for managing money, and the responsible and sustainable management of personal and family finances. In all cases it is crucial for a financial education programme to inspire and motivate participants to better themselves, by generating a scenario that promotes confidence and security through a teaching philosophy that revolves around learning rather than criticism.

6. References

Bandler, R., Grinder, J., & Andreas, S. (1979). Frogs into princes: Neuro linguistic programming. Utah: Real People Press.

Borden, L., Lee, S., Serido, J., & Collins, D. (2008). Changing College Students' Financial Knowledge, Attitudes, and Behavior through Seminar Participation. Journal of Family and Economic Issues, 29(1), 23-40.

CFPB. (2015a). Measuring financial well-being: A guide to using the CFPB Financial Well-Being Scale. Retrieved from consumerfinance.gov: consumerfinance.gov/financial-well-being.

CFPB. (2015b). Financial well-being: The goal of financial education. Washington, DC: Bureau of Consumer Financial Protection.

Chen, G., Gully, S., & Eden, D. (2001). Validation of a New General Self-Efficacy Scale. Organizational Research Methods, 4(1), 62-83.

Chien, Y., & Devaney, S. (2001). The Effects of Credit Attitude and Socioeconomic Factors on Credit Card and Installment Debt. Journal of Consumer Affairs, 35, 162-179.

Dilts, R. (1999). Sleight of Mouth: The Magic of Conversational Belief Change. Capitola: Meta Publications.

Elster, J. (1998). Emotions and economic theory. Journal of Economic Literature, 36, 47-74.

entrepreneur.com. (2019, Julio 11). Infographic: The Growth of Entrepreneurship Around The Globe. Retrieved from http://entm.ag/qg4

Fagerlin, A., Zikmund-Fisher, B., Ubel, P., Jankovic, A., Derry, H., & Smith, D. (2007). Measuring Numeracy without a Math Test: Development of the Subjective Numeracy Scale. Medical Decision Making, 27, 672–680.

Fernandes, D., Lynch, J. G., & Netemeyer, R. G. (2014). Financial literacy, financial education, and downstream financial behaviors. Management Science, 1861–1883.

Han, S., Lerner, J., & Keltner, D. (2007). Feelings and consumer decision making: The appraisal-tendency framework. Journal of Consumer Psychology, 17(3), 158-168.

Hsee, C. K., Yang, Y., Zheng X., & Wang, H. (2015). Lay Rationalism: Individual differences in using reason versus feelings to guide decisions. Journal of Marketing Research, 52(1), 134-146.

Klontz, B., & Klontz, T. (2009). Mind over money: Overcoming the money disorders that threaten our financial health. New York: Broadway Books.

Lentz, M., Smetsers, D., Vergeer, E., & Grotenhuis, M. (2016). In control of the company: entrepreneurs on their financial literacy. Utrecht: Netherlands Chamber of Commerce. Retrieved from www.kvk.nl/onderzoekgeldzaken

Lipkus, I., Samsa, G., & Rimer, B. (2001). General performance on a Numeracy Scale among highly educated samples. Medical Decision Making, 21(1), 37-44.

OECD. (2018). OECD/INFE Core competencies framework on financial literacy for MSMEs. Paris: OECD. Retrieved from https://www.oecd.org/daf/fin/financial-education/core-competencies-frameworks-for-financial-literacy.htm

Parrotta, J., & Johnson, P. (1998). The Impact Of Financial Attitudes And Knowledge On Financial Management And Satisfaction Of Recently Married Individuals. Association for Financial Counselling and Planning Education.

Rook, D., & Fisher, R. (1995). Normative influence on impulse buying behavior. Journal of Consumer Research, 22, 305-313.

Scott, R., Cryder, C., & Loewenstein, G. (2008). Tightwads and Spendthrifts. Journal of Consumer Research, 34(6), 767-782.

Tangney, J., Baumeister, R., & Boone, A. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. Journal of Personality, 72(2), 271–324.

Weun, S., Jones, M., & Beatty, S. (1998). Development and validation of the impulse buying tendency scale. Psychological Reports, 82(3), 1123-1133.

Wood, R., & Bandura, A. (1989). Impact of conceptions of ability on self-regulatory mechanisms. Journal of Personality and Social Psychology, 56, 407-415.

Workspace. (2019, July 11). Workspace. Retrieved from Workspace: https:// //www.workspace.co.uk/community/homework/business-finance/common-money-management-mistakes-that-entrepreneur

7. Appendix

Appendix A

In the Appendix we present all the specific scales and survey items used in our analysis, we indicate when each measure was completed and provide some examples of the activities completed during the face-to-face in class sessions.

1. Measures

1.1 Financial well-being

To assess participants' financial well-being, we used the Financial Well-Being Scale developed by the CFPB (2015).

Questions	Responses
How well does this statement describe you or your situation? 1. I could handle a major unexpected expense 2. I am securing my financial future 3. Because of my money situation, I feel like I will never have the things I want in life* 4. I can enjoy life because of the way I'm managing my money 5. I am just getting by financially* 6. I am concerned that the money I have or will save won't last*	Completely Very well Somewhat Very little Not at all
How often does this statement apply to you? 7. Giving a gift for a wedding, birthday or other occasion would put a strain on my finances for the month* 8. I have money left over at the end of the month 9. I am behind with my finances* 10. My finances control my life*	Always Often Sometimes Rarely Never

* Denotes questions for which the response options are "reverse coded"

1.2 Financial knowledge

We used a scale developed by Aequam. The scale uses 20 items to assess explicit knowledge of the core financial concepts of savings, compound interest, rate of return, and risk diversification. Each question is graded as right or wrong, and all scores are added, with higher scores indicating greater knowledge. The items are the following:

1. In which case do you think the refrigerator will consume more energy?
a. You connect it but you do not keep anything in it.
b. You connect and store 10 litres of water, a bread and a bag of oranges.
c. You connect and keep 2 kilos of apples.
d. I do not know.

2. What can cause a car to have a higher than usual fuel consumption?
a. Drive it at night.
b. Having the tires in poor condition.
C. Drive with the glasses below.
d. I do not know.

3. What is the best time to buy a new car?
a. At the middle of the month.
b. When the repair cost of your old car exceeds the sale price.
c. In festival days.
d. I do not know.

4. Suppose that in the next 10 years the prices of the things you buy are doubled. If your income doubles by then, you will be able to buy:
a. Twice the things you buy today.
b. More things than you buy today.
c. Less amount of things than you buy today.
d. The same amount of things you buy today.
e. I do not know.

5. If someone offers you to earn a high sum of money in a few weeks, you:
a. Find out what type of business is, how it works, what is the probability of losing your money and to that, who will respond.
b. Do not hesitate for a moment to take the opportunity.
c. You do not pay attention and you retire: "That's not so good about that".
d. I do not know.

6. If you notice that at the end of the month you are always short of money, you:
a. You use the credit card to cover the pending expenses.
b. You set a quantity of money to spend on parties, birthdays and gifts and avoid shopping.
C. Ask your friends or family to lend you money for a few days.
d. I do not know.

7. You know precisely when you receive money per month and when you spend money.
a. Yes, I have a very clear figure in my head.
b. More or less, I have a general idea of what comes in and what comes out.
C. I have an idea of the money that goes in, but I'm not sure how much money I spend per month.
d. I do not have a clear idea of what I receive or what I spend in the month.

8. You receive a sum of extra money that is equivalent to one third of your income for the month, what would you use it for?

a. Pay debts (if you have any).
b. Go out to eat at my favourite restaurant.
c. To cover day-to-day expenses.
d. I do not know.

9. If you decide to buy in instalments with your credit card, in how many instalments would it suit you?
a. In many instalments, so the monthly fee is low and I can pay it without stress.
b. It depends on what you are going to buy with the card and the payment terms.
c. Without hesitation in a single instalment to not spend on interest and feel free from obligations.
d. I do not know.

10 When you set a savings goal, what is the first thing you define:
a. The portion of money I am going to reserve from my income.
b. What do I want to achieve, how much money do I need, where will I get it and how much time do I have to collect it?
c. To whom I am going to ask for a loan of money, to what term and what documents I need to enlist.
d. I do not know.

11. What is the best way to save to make so your plans come true?
a. Save what I have left over at the end of the month.
b. Saving doesn't work because it involves a lot of work and it takes a lot of time.
C. In an orderly and planned manner. The budget is very helpful for this purpose.
d. I do not know.

12. Organizing finances and making good use of money means:
a. Sacrifice by stopping to buy branded products in the market and opt for white label products (generic).
b. Avoid going out with my friends, to the movies or eating out.
c. Buy clothes when I need it, not when I want to forget something that caused me a bad mood.
d. I do not know.

13. If you have a credit card, what payment method makes you pay less interest?
a. Modality 1: Defer all purchases to 24 instalments or more
b. Modality 2: Pay everything at 1 instalment.
C. Modality 3: Defer all purchases between 8 and 12 instalments
d. I don't know

14. After receiving your salary, what would be the most convenient time to save?
a. After paying transportation, food, health, clothing and cell phone expenses.
b. After paying your debts and before making any other expenses.
c. At the end of the month, depending on the money you spend.
d. I do not know.
15. You pay all bills, receipts and debts very timely.
a. Sometimes
b. Always
c. Hardly ever
d. I do not know.

16. If you deposit money in the bank for two years without withdrawing it and agree to receive an interest of 15% per year with reinvestment of interest:
a. The bank will pay you more money the second year than the first
b. The bank will pay you the same amount every year.
C. The bank will pay you less money the second year than the first
d. I don't know

17. Is it advisable to pay the minimum fee that appears on the monthly credit card statement or pay a little more?
a. The minimum quota is sufficient. If I pay a little more, my accounts are saved and then I don't know how much I owe in total.
b. It is not enough for me to pay more than the minimum fee.
c. It is advisable to pay the amount in the shortest possible time, so the monthly value you deposit exceeds by far the value of the minimum fee.
d. I do not know.

18. Do you know the interest rate charged by the credit card you use and how does it work?
a. Yes, the rate is between 27% and 32% and I have some idea how they calculate the charge.
b. I think it is between 5% and 10% and I have some idea how they calculate the charge.
c. Yes, the rate is between 27% and 32% and I have no idea how they calculate the charge.
d. I do not know.

19. What percentage of your income for the month is used to pay debts (not including housing credit)?
a. Less than 20%
b. More than 20%
c. I do not know.

20. If you suddenly run out of income, how long could you live with your savings?:
a. Between one and three months.
b. Between three and six months.
C. No time because I do not have a money reserve at this time.

1.3. Financial self-efficacy

Participants' financial self-efficacy was assessed by the New General Self-Efficacy Scale (Chen, Gully, & Eden, 2001). Participants were asked to rate each item using a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Questions
1. I will be able to achieve most of the financial goals that I set for myself.
2. When facing difficult financial tasks, I am certain that I will accomplish them.
3. In general, I think that I can obtain financial outcomes that are important to me.
4. I believe I can succeed at any entrepreneurships to which I set my mind.
5. I will be able to successfully overcome many financial challenges.
6. I am confident that I can perform effectively on many different financial tasks.
7. Compared to other people, I can do most financial tasks very well.
8. Even when things are tough, I can perform quite well.

1.4. Impulse buying

To measure the impulse buying tendency we used the scale developed by Weun, Jones and Beatty (1998). Participants were asked to rate each item using a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Questions
1. When I go shopping, I buy things that I had not intended to purchase.
2. I am a person who makes unplanned purchases.
3. When I see something that really interests me, I buy it without considering the consequences.
4. It is fun to buy spontaneously.
5. I avoid buying things that are not on my shopping list.

1.5. Attitude about money

We constructed a composited measure to assess how strongly participants held the attitude about money being something bad. Participants were asked to indicate how much they agree with three statements using a scale from 1 (strongly disagree) to 5 (strongly agree). The statements are the following: "Poor but honest", "Some money avoids worries; too much money attracts them" and "More money, more problems". Higher scores indicate the individual holds the attitude more strongly.

1.6. Emotional reactions towards money management

We asked participants to rate the emotional reaction towards engaging in different behaviours using the Self-Assessment Manikin (SAM). SAM is a non-verbal pictorial assessment technique that directly measures the pleasure associated with a person's affective reaction to a stimulus. Responses were converted to a five-point scale ranging from 1 (pain) to 5 (pleasure).

Questions
Please indicate how you feel towards the following behaviours.
1. Taking credit
2. Spending money
3. Investing money
4. Planning expenditure
5. Saving money

Example of the SAM scale:

1.7. Eliminating financial leaks

We asked participants to report whether they had identified financial leaks and whether they had given them an appropriate treatment (e.g., to eliminate the leak or to include it in the budget). Respondents stated their answer using the following scale: 1= I did, 2 = I did not, 3 = I will do it in the future, 4 = Other. Next, they were asked to answer whether identifying financial leaks had had any effect on their financial well-being. Participants answered using a 3-point scale: 1= It has had no effects so far, 2 = It has had positive effects, 3 = It has had negative effects.

1.8. Planning for income volatility

Participants reported whether they had formed an income-smoothing fund in order to smooth out the peaks and valleys throughout the year. Specifically, respondents answered the question "Have you formed an income-smoothing fund?" using a 4-point scale (1= I did, 2 = I did not, 3 = I will do it in the future, 4 = Other). After, they were asked to indicate whether forming (or not) an income-smoothing fund had had any effect on their financial well-being using a 3-point scale (1= It has had no effects so far, 2 = It has had positive effects, 3 = It has had negative effects).

1.9. Dealing with problematic debts

Participants indicated whether they had made beneficial changes in relation to their debt management using a 4-point scale (1= I did, 2 = I did not, 3 = I will do it in the future, 4 = Other). They also answer the effect of this action on their financial well-being using a 3-point scale (1= It has had no effects so far, 2 = It has had positive effects, 3 = It has had negative effects).

1.10. Separating business and personal finances

Participants indicated whether they had taken actions to separate their business and personal finances management using a 4-point scale (1= I did, 2 = I did not, 3 = I will do it in the future, 4 = Other). Next, they indicated whether engaging in this behaviour had had any effect on their financial well-being using a 3-point scale (1= It has had no effects so far, 2 = It has had positive effects, 3 = It has had negative effects).

1.11. Subjective numeracy scale

To measure subjective numeracy we used the scale developed by Fagerlin and colleagues (Fagerlin, et al., 2007).

Questions	Responses
1. How good are you at working with fractions? 2. How good are you at working with percentages? 3. How good are you at calculating a 15% tip? 4. How good are you at figuring out how much a shirt will cost if it is 25% off?	*Not at all good *Extremely good
5. When reading the newspaper, how helpful do you find tables and graphs that are parts of a story?	*Not at all helpful *Extremely helpful
6. When people tell you the chance of something happening, do you prefer that they use words ("it rarely happens") or numbers ("there's a 1% chance")?	*Always prefer words *Always prefer numbers
7. When you hear a weather forecast, do you prefer predictions using percentages (e.g., “there will be a 20% chance of rain today”) or predictions using only words (e.g., “there is a small chance of rain today”)?	*Always prefer percentages *Always prefer words
8. How often do you find numerical information to be useful?	*Never *Very often

1.12. Spendthrift versus tightwad

To measure spendthrift versus tightwad we used the Tightwad-Spendthrift scale (Scott, Cryder, & Loewenstein, 2008).

1. Which of the following descriptions fits you better?
Tightwad (difficulty spending money), About the same or neither, Spendthrift (difficulty controlling spending)

2. Some people have trouble limiting their spending: they often spend money—for example on clothes, meals, vacations, phone calls—when they would do better not to. Other people have trouble spending money. Perhaps because spending money makes them anxious, they often don't spend money on things they should spend it on.
a. How well does the first description fit you? That is, do you have trouble limiting your spending?
Never, Rarely, Sometimes, Often, Always
b. How well does the second description fit you? That is, do you have trouble spending money?
Never, Rarely, Sometimes, Often, Always

3. Following is a scenario describing the behaviour of two shoppers. After reading about each shopper, please answer the question that follows.

Mr. A is accompanying a good friend who is on a shopping spree at a local mall. When they enter a large department store, Mr. A sees that the store has a “one-day-only-sale” where everything is priced 10-60% off. He realizes he doesn’t need anything, yet can’t resist and ends up spending almost $100 on stuff.

Mr. B is accompanying a good friend who is on a shopping spree at a local mall. When they enter a large department store, Mr. B sees that the store has a “one-day-only-sale” where everything is priced 10-60% off. He figures he can get great deals on many items that he needs, yet the thought of spending the money keeps him from buying the stuff.

In terms of your own behaviour, who are you more similar to, Mr. A or Mr. B?
Mr. A, About the same or neither, Mr. B

1.13. Financial decision avoidance

We assess the tendency to avoid financial decisions using the following three items: “I try to avoid situations that require me to make financial decisions”, “I prefer to not make decisions related to money”, and “I don’t like to think about issues involving investments and financial decisions”. Participants answered on a 5-point Likert scale from 1 (completely disagree) to 5 (completely agree).

1.14. Analytical - Rational thinking

To measure participants’ preference for using reason rather than feelings to guide decisions we used the LR scale (Hsee et al. 2015). Participants were asked to rate each item using a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Questions
1. When making decisions, I like to analyse financial costs and benefits and resist the influence of my feelings. 2. When choosing between two options, one of which makes me feel better and the other better serves the goal I want to achieve, I choose the one that makes me feel better. 3. When making decisions, I think about what I want to achieve rather than how I feel. 4. When choosing between two options, one of which is financially superior and the other “feels” better to me, I choose the one that is financially better. 5. When choosing between products, I rely on my gut feelings rather than on product specifications (numbers and objective descriptions). 6. When making decisions, I focus on objective facts, rather than subjective feelings.

1.15. Self-control

To assess individual differences in self-control we used the Brief Self-Control Scale (Tangney, Baumeister, & Boone, 2004). Participants were asked to rate each item using a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Questions
1. I am good at resisting temptation
2. I have a hard time breaking bad habits.*
3. I am lazy.*
4. I say inappropriate things.*
5. I do certain things that are bad for me, if they are fun.*
6. I wish I had more self-discipline.*
7. Pleasure and fun sometimes keep me from getting work done.*
8. I have trouble concentrating.*
9. I am able to work effectively toward long-term goals.*
10. Sometimes I can't stop myself from doing something, even if I know it is wrong.*
11. I often act without thinking through all the alternatives.*
12. I refuse things that are bad for me.
13. People would say that I have iron self-discipline

* Denotes questions for which the response options are "reverse coded"

2. Time measures

The following table indicates when each measure was completed.

Variable	Measure T1	Measure T2
Financial well-being	Session 1	Session 15
Financial knowledge	Session 1	Session 15
Financial self-efficacy	Session 1	Session 15
Impulse buying	Session 1	Session 15
Attitude about money	Session 1	Session 15
Emotional reactions towards money management	Session 3	Session 15
Financial behaviours		
Eliminating financial leaks		Session 15
Planning for income volatility		Session 15
Dealing with problematic debts		Session 15
Separating business and personal finances		Session 15
Control variables		
Subjective numeracy scale	Session 1	
Spendthrift versus tightwad	Session 1	
Financial decision avoidance	Session 3	
Analytical - Rational thinking	Session 5	
Self-control	Session 5	
Demographic variables	Session 1	

3. Examples of activities completed during the face-to-face in class sessions.

Activities completed during Session 6 (in class): Dimension 1: Beliefs.

Programa de Finanzas Efectivas para Emprendedores

Nombre completo:

Sesión 4: Sistema Operativo Interno.

Aequam

Decisiones que transforman

A continuación, encontrarás los ejercicios que realizaremos a lo largo de la sesión.

1. PRUEBA DISC

Anota que cuadrante fue el dominante en la Prueba Disc:

D: __ I: __ S:__ C:__

2. ¿QUÉ HEMISFERIO PREDOMINA?

Anota el resultado obtenido en cada uno de los ejercicios:

a) ¿Qué mano has utilizado?
b) ¿Qué mano está situada encima?
c) ¿Qué pierna está situada encima?
d) ¿Qué ojo tienes abierto?
e) Anota las 3 primeras palabras y las últimas tres palabras del párrafo.

3. TEST DE CANAL DE PERCEPCIÓN PREDOMINANTE

Elige la opción de respuesta con la cual te encuentras más de acuerdo:

1) Cuando estas en clase y el profesor explica algo, te es más fácil seguir las explicaciones:
a. Escuchando al profesor con atención.
b. Leyendo el texto en el libro o las anotaciones en el tablero.
c. Te aburres y esperas que te den algo que hacer.

2) Cuando estas en una reunión de trabajo:
a. Te distraen los ruidos del entorno.
b. Te distrae el movimiento en la sala o en el corredor.
c. Te distraes cuando las discusiones son muy largas.

3) Cuando recibes una instrucción:
a. Te pones en movimiento antes de que acaben de hablar y explicar lo que hay que hacer.
b. Necesitas tener las instrucciones por escrito para que puedas iniciar lo que hay que hacer.
c. Recuerdas con facilidad las palabras exactas de lo que te dijeron y te pones en acción.

4) Cuando tienes que aprender algo de memoria:
a. Haces fichas nemotécnicas y si puedes, añades imágenes. También te sirve ver el texto impreso o escrito en una hoja de papel (lo que llaman memoria fotográfica).
b. Repites rítmicamente lo que debes memorizar, si es posible grabas un audio y te oyes una y otra vez.
c. Paseas de un lado al otro, memorizando una idea general más que los detalles.

Material confidencial. 03.2019. www.aequam.com.co 1

Appendix B

In an attempt to rule out the possibility that the improvements observed after the programme participation were not explained by participants being somehow different than other individuals, we compared the scores from a control group with the scores from our entrepreneurs. The control group was formed with 11 participants that were initially selected to participate but that after the first session did not continue and 9 other entrepreneurs that fulfilled the same recruitment conditioned mentioned before.

There were no statically significant differences in financial well-being, financial self-efficacy, impulsivity, attitude towards money being bad, or money-related emotions (all *p*-values > .10). The control group was somehow more knowledgeable than the entrepreneurs participating in the programme (*p* = .04). Combined, these finding give some indication that our results might be explained by entrepreneurs participating in the program and not by the entrepreneurs auto-selecting themselves into the programme.

Table 3: Descriptive statistics of all measures used in the analysis

	Entrepreneurs T1 (*N*=24)		**Control Group (*N*=20)**	
Variable name	*Mean*	*Mean*	*Mean*	*SD*
Financial well-being	3.0	3.2	3.2	.60
Financial knowledge	.48	.57	.57	.21
Financial skills				
A. Financial self-efficacy	3.6	3.4	3.4	.50
B. Impulse buying	2.5	2.4	2.4	.81
Financial attitudes and emotions				
A. Attitude money being bad	2.5	2.5	2.5	.83
B. Emotional reactions				
Taking credit	1.6	1.7	1.7	.91
Spending money	2.2	2.1	2.1	1.28
Investing money	3.9	4.1	4.1	1.20
Planning expenditure	3.5	3.6	3.6	1.28
Saving money	3.7	4.0	4.0	1.38
Control variables				
A. Subjective numeracy scale	3.6	.67	3.6	.93

Appendix C

In this appendix we presented the pairwise correlation coefficients table.

Table 4: pairwise correlation coefficients table.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1)	1														
(2)	.53*	1													
(3)	.62*	.43*	1												
(4)	-.22	-.36*	-.22	1											
(5)	-.16	-.18	-.07	.25	1										
(6)	.18	.19	.38*	.05	-.09	1									
(7)	.06	.06	.02	.12	-.12	.33*	1								
(8)	.17	.01	-.01	-.13	.05	.15	.28	1							
(9)	.22	.21	.26	-.02	.01	.78*	.36*	.36*	1						
(10)	.41*	.35*	.44*	-.21	-.06	.72*	.33*	.38*	.71*	1					
(11)	.19	.38*	.37*	-.42*	-.09	.11	-.21	-.07	.05	.31*	1				
(12)	-.07	-.32	-.29	.81*	.38*	-.12	.03	-.07	-.14	-.17	-.44*	1			
(13)	-.56*	-.38*	-.44*	.17	.02	-.12	-.08	-.13	-.16	-.48*	-.19	.18	1		
(14)	.17	.49*	.14	-.51*	-.19	.23	.06	.12	.24	.56*	.59*	-.51*	-.22	1	
(15)	.28	.17	.39*	-.06	-.06	.06	.01	-.11	-.16	.29	.29	.07	-.31	.47*	1

* Shows significance at the .05 level

	Variables
(1)	Financial well-being
(2)	Financial knowledge
(3)	Financial self-efficacy
(4)	Impulse buying
(5)	Attitude money being bad
(6)	Emotion *Saving money*
(7)	Emotion *Taking credit*
(8)	Emotion *Spending money*
(9)	Emotion *Investing money*
(10)	Emotion *Planning expenditures*
(11)	Subjective numeracy scale
(12)	Spendthrift versus tightwad
(13)	Financial decision avoidance
(14)	Analytical - Rational thinking
(15)	Self-control

The authors

Catalina Estrada-Mejia,
Professor of Business,
Universidad de los Andes (Bogotá, Colombia).

E-mail: c.estrada395@uniandes.edu.co

María Piedad Valero,
Founder of Aequam, a consulting company specialized in financial education (Bogotá, Colombia).

E-mail: mvalero@aequam.com.co

Daniela Castaño,
Research Assistant,
Universidad de los Andes (Bogotá, Colombia).

E-mail: da.castano.forero@gmail.com

Disclaimer