



Improving financial literacy of the poor and vulnerable in Indonesia: An empirical analysis[☆]



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ABSTRACT

We describe and report the results of an 18-month long training of trainers program in financial literacy and soft skills designed to improve employability of poor and vulnerable Indonesian youth. The program was part of an Inclusive Workforce Development project sponsored by USAID/Indonesia. Twenty-five teachers received training in December 2017 and subsequently conducted 30 trainings for 601 students in West Java from January through May 2018. The training consisted of 18 sessions covering basics of financial literacy and employment-related soft skills. Both participating trainers and students showed statistically significant increases in financial literacy knowledge, and student perceptions about their acquisition of soft skills improved as well. Increases in student financial literacy knowledge were found to relate to prior knowledge, job experience, the type of school they attend, the perceived acquisition of soft skills, and the intention to incorporate the training into their daily lives. Given that the economic education literature links financial literacy to improved worker productivity, decreased absenteeism, and entrepreneurial success, these findings are encouraging for both the students involved and for their employers in Indonesia.

1. Introduction

In recent years, economic education researchers have increasingly focused their attention on issues of financial literacy. The importance of financial literacy to individuals, households, and nations is readily apparent. Economic well-being, at all levels, is a function of the financial choices of decision-makers. The degree to which improved financial decision-making can further economic prosperity is of particular interest for developing nations. Numerous international aid projects now include elements of personal finance education as part of their efforts to further economic growth. In this study we examine the outcomes of a United States Agency for International Development (USAID) project in Indonesia designed to improve the financial decisions and outcomes for an at-risk population of young adults. Our central concern is to determine if the project successfully improved the financial literacy and associated personal soft skills of participants.

The Republic of Indonesia is a nation faced with challenges and opportunities. With the fourth largest population in the world and

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the world's largest Muslim majority, Indonesia consists of over 13,000 islands, about 900 of which are inhabited. Across this geographic territory there is vast cultural and ethnic diversity. Over 700 languages are spoken in Indonesia, with Bahasa Indonesia serving as its official language since 1949. Indonesia has the largest economy of the ten members of the Association of Southeast Asian Nations (ASEAN), and since 2010 economic growth has averaged about five percent per year. However, the country struggles with unemployment, poverty, corruption, regulatory inefficiencies, regional inequalities and a weak infrastructure. Unemployment for youth ages 15–24 was estimated at over 23 percent in 2017 (*The World Factbook*, 2017). President Joko Widodo (Jokowi), elected in 2014, has cited reforms to education and physical infrastructure as among his highest priorities for the country.

Against this background, in June 2015 USAID/Indonesia issued a request for statements of interest to participate in a five-year “Inclusive Workforce Development” (IWD) project in Indonesia. The primary goal of the IWD is to encourage economic growth and reduce income inequality by improving employment opportunities for “poor and vulnerable youth” aged 18 – 34.¹ Financial Markets International (FMI: <http://fmi-inc.net/>), the Global Economic Education Alliance (GEEA: www.globaleconed.org), and the Indonesian Council on Economics and Financial Education (ICEFE) joined together to submit a statement of interest. Our statement focused on improving financial literacy as a means of addressing this educational barrier faced by the poor and vulnerable. Financial literacy potentially improves worker confidence and productivity, enhances employability and help workers stay employed by avoiding financial difficulties. The FMI/GEEA/ICEFE team later paired with the International Youth Foundation (IYF: <https://www.iyfnet.org/>), an NGO with expertise in training youth in personal soft skills. In February 2017 our collective group was awarded one of seven 18-month pilot grants under the USAID IWD project named Mitra Kunci (Key Partners). Our financial literacy project described below is called *YouthWin through Economic Participation* (YEP).

Using the well-established training of trainers model², the YEP project seeks to combine financial literacy training with soft skills training through a model we call “financial life skills.” Our working definition of soft skills is *a set of competencies, behaviors, attitudes, and personal traits that establish work readiness*. Our definition of financial literacy, based on that of the Organization for Economic Cooperation and Development (OECD), is *a combination of the awareness, knowledge, skills, attitudes and behavior necessary to make good decisions about finances, and to ultimately achieve financial security*. Between February 2017 and August 2018 YEP designed a curriculum to target basic financial literacy topics and soft skills that relate to employability. We then trained 25 trainers to use this curriculum, who in turn taught 601 students from vocational schools in West Java. Participating trainers and participating students were assessed with respect to changes in financial literacy knowledge and changes in self-perceptions of the acquisition of soft skills due to the training.

After a brief description of the educational system in Indonesia, we provide a literature review focusing on the efficacy of financial literacy training and recent interest in soft skills, followed by a description of our methodology and data collection process. Findings from our training of trainers program are presented along with the results from 30 training-of youth workshops that took place during early 2018.

2. Background: education system in Indonesia

To understand the context of the YEP program in providing financial life skills training to poor and vulnerable youth in Indonesia, we provide a brief overview of the educational system in Indonesia and the vocational programs with which YEP is associated. Vast improvements have taken place in Indonesian education in recent decades in terms of school enrollment rates and narrowing gaps between rich and poor, and between urban and rural students. However much improvement is still needed (*The Economist*, 2014). 2015 scores on the PISA (Programme for International Student Assessment) instruments, collected by the OECD (2017), are far below world averages in all academic areas tested (reading, math, and science).³

Nine years of education are compulsory in Indonesia: six years of primary education and three years of junior secondary education. While primary education is virtually universal, subsequent enrollment rates drop with age and as of 2012 just 51 percent of the eligible population aged 15–18 attended upper-secondary school (high school), well below the Southeast Asian average of 65 percent (WENR, 2014 p. 3). High school programs may be academic, religious (primarily Islamic), or vocational. Although administration is shared to some extent between the national and regional governments, two separate ministries oversee pre-college education in Indonesia, the Ministry of Education and Culture and the Ministry of Religious Affairs. There are wide discrepancies in school attendance and school quality between richer and poorer districts.

Post-secondary education is provided by five types of institutions including universities, academies, colleges, polytechnics, and institutes (NUFFIC, 2015 p. 8). Universities and institutes provide both academic and higher professional education, while academies, colleges and polytechnics provide professional education in different fields. The most prestigious higher education institutions are public state universities. Although growing, the enrollment in higher education as a percentage of the college age population was

¹ The project defines “poor” as those earning less than \$2 per day and without significant assets such as a motorcycle. The definition of “vulnerable” is multi-faceted and includes those in need of special care, those at risk of not finding employment, those in unstable informal employment, school dropouts, the unemployed, drug abuse victims and street children. This USAID definition, along with a relatively broad range of ages, is inclusive of students enrolled across a variety of educational and training institution types as described in this paper.

² The training of trainers model focuses on providing program-specific instruction to cohorts of teachers who in turn return to their schools to train students following the curriculum. This format provides a multiplier effect and is a cost-effective alternative to the provision of direct instruction to students. This model has shown to be successful across a wide variety of international economic education programs; see Grimes and Millea (2011) for an example applied to Russia.

³ Indonesia has not yet participated in the financial literacy section of the PISA assessments.

only 25 percent in 2013, lower than the global average of 31 percent and that of most ASEAN members (WENR, 2014 p. 3).

Vocational education is a recent focus of reform within the Indonesian educational system. High youth unemployment coupled with identified unmet needs of the labor market motivate these reforms. An OECD study calls for a "... more diversified and nationally co-ordinated system of vocational education with a high level of employer engagement" (OECD, 2015 p. 20). President Jokowi has undertaken a number of strategic moves to align vocational education more directly with the labor demands of industries. Mohamad Nasir, head of the Ministry of Research, Technology, and Higher Education, has also acknowledged that many vocational college graduates are unemployed due to a lack of skills that are compatible with industry needs. To address this problem, the ministry seeks to increase the number and quality of polytechnics providing vocational education.

The YEP program trains students participating in vocational education programs across a range of different types of institutions that we will briefly describe including polytechnics, BLKs, LPKs and LKPs, as well as some students with disabilities. Polytechnics are linked to universities and are part of the formal education system in Indonesia. Students are admitted to polytechnics after completing 12 years of education and passing an entrance examination. Polytechnic programs generally last three years and consist primarily of practical training and internships. They offer diplomas in areas such as information systems, accounting, business administration, graphic arts, publishing and electrical and mechanical engineering technology. Polytechnics vary in quality and, like other vocational education programs, face the important challenge of providing quality training related to local workforce development needs.

Among the other suppliers of vocational education in Indonesia are vocational centers known as BLKs (*Balai Latihan Kerja*). Considered part of the nonformal education sector (outside of the basic structure of primary and secondary education), BLKs are public institutions that offer students who dropped out of primary or secondary education a second chance at education focused on job skills (OECD, 2015 p. 157). In addition to drop-outs, high school graduates and other job seekers also attend BLKs to improve their skills and to qualify for higher paying jobs. BLKs offer short certificate courses through training in diverse areas such as tourism, welding, manufacturing, sewing, and smart-phone assembly and repair. The quality of the BLKs varies greatly with respect to course offerings and equipment.

LPKs (*Lembaga Pelatihan Kerja*) and LKPs (*Lembaga Kursus & Pelatihan*) are similar to BLKs in many ways. However these institutions are private technical training centers that have permits to run funded programs from the Ministry of Manpower and Transmigration and the Ministry of Education, respectively. Training programs overlap those of BLKs and include skills such as sewing and dressmaking, hairstyling, computer-related subjects, and accounting. The source of funding is often from participant fees, although some schools receive government or other grants and can then offer training for reduced fees. Because of their similarities, hereafter we will refer to both LPKs and LKPs only as LPKs.

3. Literature review

3.1. Financial literacy

There is a growing body of economic education research investigating the effects of financial literacy education on peoples' knowledge, attitudes, and behavior. However some recent studies focusing on high school financial literacy courses in the U.S. show contradictory findings: Mandell (2008) found that taking a financial literacy course did not improve scores on a financial literacy test compared to a control group, whereas Walstad et al. (2010) reported the opposite result. Similar to Mandell, Peng et al. (2007) found no significant improvement in investment knowledge resulting from financial education. Swinton et al. (2007) looked at the effects of teacher training on the financial literacy knowledge of students and found a positive significant relationship. These U.S. studies find that common predictors of success for increased financial literacy knowledge in high school students include having a part-time job, being from a middle-income family, and being male.

A special issue of *International Review of Economics Education* on issues in financial literacy education (Bosshardt, 2014) contains articles discussing high school financial literacy education in both New Zealand and Korea. Both studies investigate financial literacy at different cognitive levels of understanding. In New Zealand, Cameron, et al. (2014) found overall financial literacy to be lowest among poorer students and those exhibiting lower language and math abilities. However, these differences did not hold at the highest cognitive level - the application of financial knowledge. In the study comparing financial literacy among youth in Korea and the U.S., Jang et al. (2014) found that the gap in knowledge between Korean and American students shrank when both were exposed to the same materials. Korean students were stronger in the cognitive area of knowledge but Americans were stronger in comprehension and application.

An interesting 2015 U.S. study resulted from a natural experiment when three states began to require that students take a financial literacy course in high schools. A comparison of credit scores before and after the mandates found significantly higher (better) credit scores in the states after students were required to complete a financial literacy course for graduation (Brown et al., 2015). The implication is that mandating financial literacy courses may have long-term effects and improve financial behavior.

Several studies have attempted to find a linkage between financial literacy and worker productivity or absenteeism. Braunstein and Welch (2002) report on a study at a chemical production company that found that financial wellness was positively correlated with worker productivity, as measured by supervisors' performance ratings and worker health, inferred from absentee records. In two additional studies, employers report that when employees experience financial problems their worker productivity decreases and absenteeism increases (Boston College Center for Work and Family, 2011; International Foundation of Employee Benefit Plans, 2016).

A study on teacher absenteeism in Indonesia found instability outside of work to be a factor leading to higher absenteeism (McKenzie et al., 2014). A study by Kim et al. (2006) links financial stress to employee absenteeism and suggests financial education as a solution.

Other studies provide links between financial literacy and entrepreneurial success. This is particularly relevant for Indonesia since over 50 percent of the workforce identifies as self-employed (World Bank, 2018). A study conducted in Kenya found that business owners who scored higher on a financial literacy test had the most successful businesses, and that those with lower levels of financial literacy typically formed more vulnerable informal businesses (Njoroge, 2013). A World Bank study conducted in Bosnia and Herzegovina found that young entrepreneurs positively changed business practices after weeks of financial literacy training (Bruhn and Zia, 2011).

While the link between financial literacy and employability may appear indirect or abstract, the growing body of evidence points to its importance for individual success in the workplace, for businesses, and even for the stability of the world economy as a whole. As pointed out in the OECD report *Financial Education and the Crisis* (OECD, 2009), a lack of financial literacy likely contributed directly to the onset of the 2007–2009 financial crisis and to its severity.

3.2. Soft skills

While the focus of this paper is on determinants of financial literacy in the YEP training, we also find a relationship between financial literacy and the acquisition of soft skills. Some recent literature on soft skills and success on the job is summarized in Timothy Taylor's blog (*Conversable Economist*) of January 30, 2018 titled "The Rising Importance of Soft Skills." Citing a 2017 *Washington Post* article (Davidson, 2017), Taylor describes a Google study that found that the seven top characteristics of on-the-job success at Google were all soft skills,⁴ and that technology skills placed eighth out of eight on the list. Timothy, 2018 provides other evidence about the increasing importance of soft skills. A recent survey conducted by the National Association of Colleges and Employers ranked problem-solving skills, ability to work in a team, and communication skills as the top-three attributes employers look for on candidates' resumes (National Association of Colleges and Employers, 2017). An NBER study by David Deming (2017) concludes that the importance of cognitive skills for job success has declined since 2000, while occupations requiring strong social skills grew by 12 percent between 1980 and 2012.

The research findings relating both financial literacy and soft skills to worker on-the-job success point to the importance of measuring the acquisition of this financial knowledge and soft skills in the YEP program. If employment opportunities and ultimately employment are improved for poor and vulnerable Indonesian youth through financial literacy and soft-skills training, this could help to achieve the long-run macroeconomic goals of economic growth and reduced income inequality.

4. Methodology and data collection

4.1. Training of trainers (TOT)

The YEP financial life skills project collected pre-program and post-program data from trainers and students during the 18-months of the project, from February 2017 – August 2018.⁵ During this period we planned, conducted and evaluated a Training of Trainers (TOT) program, with those trainers subsequently conducting trainings for students.⁶ The design and content of the TOT were based on findings from a labor market assessment conducted in West Java in spring 2017 among project stakeholders including employers, government officials, vocational school teachers, and poor and vulnerable youth.

Twenty-five trainers from post-secondary vocational schools (polytechnics, BLKs and LPKs) from the districts of Bandung, Sukabumi, and Indramayu (all in West Java) were recruited to take part in the four-day YEP training program in Jakarta from December 18–21, 2017. Three "Master Trainers" also participated in the YEP training and later served as coaches to the trainers. The institutions were chosen based on those who accepted invitations from YEP and on recommendations from local government. The districts were chosen in part for having large percentages of poor youth and high levels of labor demand coupled with high unemployment, indicating a mismatch of job skills with available jobs. Students could opt-in to the YEP training as a supplement to their regular instruction if it was offered in their vocational education school.

The TOT consisted of financial literacy sessions conducted by GEEA and sessions related to soft skills and training skills (e.g., leading discussions and handling difficult participants) conducted by IYF. GEEA also provided an overview of the assessment process and assessment instruments that the trainers were to use with their students. In January through May these 25 trainers conducted 30 Financial Life Skills trainings for their students (as a supplement to regular vocational instruction) in 18 different institutions, training a total of 601 students. Four trainers dropped out of the program before April 2018. The 21 remaining trainers were invited to a

⁴ The seven soft skills evaluated were: being a good coach, communicating, listening, possessing insights into others, having empathy and being supportive of colleagues, critical thinking and problem solving, and making connections.

⁵ Although the YEP project has received funding beyond the initial 18 months, because the mission of the extended funding has changed somewhat, we focus this study on the first 18 months for the sake of consistency.

⁶ The YEP project was found to be exempt from IRB oversight because although it includes some research elements, it is primarily a program evaluation and thus is not considered to be human subjects research by USAID. The informed consent procedure consisted of a statement on the form that collects background/demographic information saying that participation is voluntary and that information will be kept confidential.

Table 1
Financial Life Skills Curriculum Topics.

Financial Literacy	Soft Skills
Ten Big Ideas of Financial Literacy	Self-confidence
Decision Making for Personal Finance	Becoming a Responsible Person
Planning and Setting Personal Financial Goals	Critical Thinking and Problem-solving
Earning Income and Investing in Yourself	SWOT Analysis (strengths, weaknesses, opportunities, threats)
Managing Your Money (budgeting, banking)	Overcoming Procrastination
Saving	Teamwork
Credit and Borrowing	Positive Communication
Dealing with Risk	Developing an Action Plan

week-long refresher course in Jakarta in April 2018 and 17 attended. During the refresher course, master trainers reviewed the curriculum, answered questions, and provided feedback on training skills.

4.2. Curriculum

The basic curriculum topics covered in the TOT and that the trainers subsequently delivered to their students are listed in Table 1. There were two additional sessions to accommodate pre and post-testing, for a total of 18 70-minute sessions.⁷ In addition to findings from the labor-market assessment, financial literacy topics were also based on curricular recommendations from sources such as the [National Standards for Financial Literacy \(2013\)](#). Soft skills topics were identified by the labor market assessment and IYF to be those thought to be most related to employability and workforce development. All of the modules are activity-based, involving active participation of students through methods such as simulations, demonstrations, role plays, and group interactions. Because there are likely wide discrepancies between skill and ability levels of students in polytechnics and those in BLKs and LPKs, most materials were aimed at the lower-skilled students. The YEP curriculum was designed so that it could be replicated and delivered by other trainers over time.

4.3. Assessment instruments

GEEA developed a set of assessment instruments (“Forms”) to be administered prior to the training and immediately after the training.⁸ Table 2 outlines the assessment instruments and when each form was administered. Form 1 is a basic demographic survey. Form 2 consists of the pretest questions relating to financial literacy and self-perceptions about soft skills. These questions are then included as post-tests in Form 3, to be administered when the training has concluded. Forms 4 and 5 are surveys relating to satisfaction with the training for trainers and students respectively.

In developing the financial literacy pre and posttest, nine of the questions were selected from the *Financial Fitness for Life Upper Elementary Test* (Walstad and Rebeck, 2005) and edited to reflect Indonesian institutions and financial arrangements. This test, designed for U.S. fourth to sixth graders, was chosen with the *a priori* expectation that many of the BLK and LPK students have very low reading and numeracy skills. These test questions have discriminatory power even though, as the program evolved, more students attended polytechnics rather than BLKs and LPKs. The tenth financial literacy question relates to interest and is one of three from the well-known Lusardi-Mitchell three-question financial literacy test (Lusardi and Mitchell, 2011). The financial literacy questions relate directly to topics covered in the eight financial literacy modules. The Likert-scale soft skills questions are related to content covered in the life-skills training modules and ask for self-assessment about understanding of the soft skills. The financial literacy and soft-skills questions are included in the Appendix to this paper. The questions were carefully edited to be suitable for the Indonesian context; for example, proper English names were replaced with local names and references to “interest rates” were changed to “rates of return” to be consistent with sharia-compliant (Islamic) banking. As is common with assessments of soft-skill instruction, our questions in this area relate to self-perceptions and not to actual knowledge or observed use of soft skills.

4.4. Evaluation design

The financial and required time-line constraints of the project prohibited the deployment of a controlled randomized research design to determine the effectiveness of the training on instructors and students. While our evaluation does not have the benefits of randomized controls⁹, we were able to estimate the impact of YEP using the assessment instruments described above within the natural context of the program’s implementation. Ruhm (2019) recently argued that economists should not ignore interesting and

⁷ To better accommodate their schedules, these 18 70-minute sessions were later combined into 14 90-minute sessions for the polytechnics.

⁸ We also developed forms to be administered longitudinally on financial behaviors and self-efficacy, with baseline data collected on Form 2. The longitudinal data are not part of this study.

⁹ While the trainers volunteered to participate in the project, there is a degree of randomization within the student samples. Students were unaware that their classes were participating in the curriculum prior to enrollment. Thus, there was not a self-selection decision on the student’s part to seek out and sign up for the training. The curriculum was integrated into a wide variety of courses across a number of subject areas.

Table 2
YEP Assessment Instruments.

Administered Immediately Prior to Training	Administered Immediately Following Training
Form 1: Demographics	
Form 2: Financial literacy knowledge and self-perceptions of soft skills	Form 3: Financial literacy knowledge and self-perceptions of soft skills (from Form 2)
	Form 4: Trainer satisfaction with training
	Form 5: Student satisfaction with training

important questions simply because real world constraints restrict the construction of pure experimental designs and clean model identifications. Furthermore, our approach is common to evaluations of large-scale international economic education programs where local administrative and logistic hurdles prevent a more technically pure research design (see for example, Grimes et al., 2009 and Thomas and Campbell, 2006).

In addition to our research design constraints, we encountered a wide diversity of students within and across polytechnics, BLKs and LPKs that introduced significant challenges to implementing a curriculum in a standardized format. As a result, the program was offered at different points in time during the academic calendar over a varying number of days and class meetings. However, all locations completed the full curriculum and pre and posttests were collected at each site.

Our data and results must therefore be viewed with these issues, and the caveats they imply, in mind. Regardless of the design limitations, the data reflect the observed outcomes from the initial implementation of the YEP program and, therefore, reveal how trainers and students were impacted within the existing societal context of Indonesia. A number of interesting results were uncovered when the data were analyzed.

5. Results

5.1. Trainers

Table 3 provides descriptive statistics from the background information that was collected from the 25 trainers who took part in the YEP four-day financial life skills training program during December 2017.¹⁰ As shown in the table, participants are predominantly male with a mean and median age of 37 – 38. Eighty percent have four-year university degrees. (The two trainers with high school degrees teach at LPKs.) With respect to education, Diploma 1 is earned from completing one year of university education and Diploma 3 from completing three years of university education. Eighty-percent of participants were university graduates.

Most of the trainers (56 percent) teach at polytechnics, as opposed to the BLKs and LPKs. The two marked “other” in this category are administrators at “planning and development agencies” in Indramayu. Of the three districts involved in the pilot phase of this project, the largest number (48 percent) are from Indramayu with an almost even distribution from Bandung (28 percent) and Sukabumi (24 percent). The vast majority did not have prior financial literacy training (88 percent) or prior soft skills training (78 percent).

The trainers completed the 10-question financial literacy test as a pretest before the training and as a posttest immediately after the training. As indicated in Table 3, the posttest scores were significantly higher than the pretest scores. While this is good news in terms of the efficacy of the YEP training, it is somewhat disconcerting that the trainers did not have better prior knowledge of financial literacy questions aimed at upper elementary students.¹¹

5.2. Students

Table 4 shows descriptive statistics for background information collected from the 601 students who took part in the 30 trainings between January and May 2018. The students are 56 percent male with an average age of 21, although ages range from 18 to 34. Most students are high school graduates, although their highest education achieved ranges from completing junior high (or less) to having a university degree. Most students attend polytechnics, followed by BLKs and LPKs. About half are from Indramayu with an almost even split between Bandung and Sukabumi, which also reflects the districts of the trainers. Only about three percent reported having prior training in financial literacy, while about 17 percent reported having prior training in soft skills. About 44 percent of the students currently hold or previously held a job. The vast majority of students are single, have no children and live with their parents. Family relationships are important in Indonesia and it is not uncommon for several generations to live together. Interestingly, about 38 percent of students reported that they make most of the financial decisions for their households. Over 97 percent attended all of the training modules.

We developed an index to measure self-perceived acquisition of soft-skills using students’ pre and post training responses to the ten Likert-scale questions on Form 2. Because there were five Likert response categories, responses ranging from one to five were

¹⁰ Data from the four trainers who subsequently dropped out of the program are included because they conducted trainings of students.

¹¹ However we found sources of confusion due to language translation issues for at least two of the questions while scoring the pretests and these were revised after the training of trainers (and after administration of the posttests to trainers). Appendix A includes the revised questions.

Table 3
Descriptive Statistics: Training of Trainers.

Characteristic	Descriptives / Frequencies
Sex	Female: 9 Male: 16
Year of Birth	Range: 1958 – 1993 Median: 1980 Mean: 1979
Education	High school: 2 Diploma 1: 1 Diploma 3: 1 University: 20 Missing: 1
School Type	Polytechnic: 14 BLK: 6 LPK, LKP: 3 Other: 2
District	Bandung: 7 Indramayu: 12 Sukabumi: 6
Prior Financial Literacy Training	Yes: 3 No: 22
Prior Soft Skills / Life Skills Training	Yes: 6 No: 19
Pretest Score ^a	Range: 4 – 9 Mean: 6 (1.21)
Posttest Score ^a	Range: 6 - 10 Mean: 8 (1.29)

N = 25.

()–Standard Deviation.

Two-tailed t-test.

* Posttest – Pretest: $t = 5.473, p < .01$.

added for each question pre and post training, with the results then summed to create the index score. For all questions, higher numbers represented higher self-perceptions about having soft-skills. The index scores could range from 10 (student rated him/herself one on all questions) to fifty (student rated him/herself five on all questions). As shown in Table 4, students on average reported having significantly more soft skills after the training. Financial literacy knowledge, as measured by pre and posttests, also showed statistically significant increases as a result of the training.¹² Taken together, the implicit improvements in soft skills and the improvement in financial literacy knowledge are very encouraging, since the literature shows that soft skills are related to employability and that both financial literacy and soft skills are related to on-the-job success.

5.3. Satisfaction with training

Both trainers and students were surveyed about their satisfaction with different aspects of the YEP training. In addition to asking about content of individual modules (to improve the program content in the future) trainers were asked about the overall value of the active learning training methods, the appropriateness of the financial literacy and soft-skills content for students, whether the training had given them the knowledge and confidence to implement what they had learned to train their students, and their overall satisfaction with the YEP program. Table 5, columns one and two, presents these results for the 25 trainers. Overall, trainers were universally satisfied with the program and all responded that the training gave them the knowledge and confidence to train others. While not unanimous, most trainers (88 percent) found the active-learning training methods useful. About a quarter of the trainers (six) reported that the content only met student needs “to some extent.” Follow-up questioning revealed that some trainers found the content on compounding and rates of return to be too difficult for students.

Indicators of student satisfaction with the YEP training are shown in Table 5, columns three and four.¹³ As with the trainers, students were overall very satisfied with the training they received, with 88 percent or more indicating that the training gave them the knowledge and confidence to make better financial decisions and that the teaching methods were helpful. A lower percentage (79 percent) indicated that they will definitely implement what they learned, with 20 percent saying they will implement what they learned “to some extent.” Seventy-eight percent (467) found their instructor to be definitely approachable and engaging, with about 21 percent reporting that the instructor was approachable and engaging “to some extent.”

¹² However, Question 1 on the financial literacy test will be replaced for future trainings. It was found to be far too easy with almost 96 percent of students answering it correctly on the pretest.

¹³ While the vast majority (99 percent) of students answered all questions on the satisfaction survey, there are some missing data from skipped questions (six – seven students out of 601).

Table 4
Descriptive Statistics: Training of Youth.

Characteristic	Frequencies / Descriptives
Sex	Female: 262 Male: 339
Age	Range: 18 - 34 Median 21 Mean: 21.4
Education	Junior High or lower: 8 Senior High: 538 Diploma 1: 18 Diploma 3: 16 University: 19
School Type	Polytechnic: 346 BLK: 158 LPK, LKP: 80 Other: 17
District	Bandung: 144 Indramayu: 307 Sukabumi: 150
Prior Financial Literacy Training	Yes: 18 No: 581
Prior Soft Skills / Life Skills Training	Yes: 104 No: 496
Ever held job	Yes: 267 No: 334
Marital Status	Single: 571 Married: 19 Divorced or widowed: 6
Have children	Yes: 20 No: 578
Current Living Arrangement	Live with parents/siblings: 519 Live alone: 40 Live with spouse: 8 Live with roommate/other: 31
Make most financial decisions for household	Yes = 227 No = 370
Attended all training modules	Yes = 582 No = 17
Pre Soft Skills Index Score*	Range: 28 - 50 Mean: 42.53 (4.16)
Post Soft Skills Index Score*	Range: 25 - 50 Mean: 45.56 (3.65)
Pretest Financial Literacy Score**	Range: 0 - 10 Mean: 6.52 (2.00)
Post-test Financial Literacy Score**	Range: 0 - 10 Mean: 7.69 (2.00)

N = 601 () – Standard Deviation Two-tailed t-tests:

* Post – Pre Soft Skills: $t = 17.12, p < .01$.

** Post – Pre Financial Literacy: $t = 14.96, p < .01$.

5.4. Factors affecting financial literacy

To determine the factors that affect financial literacy knowledge of students, we regressed variables likely to affect this knowledge on students' financial literacy posttest scores. Our model is described by the following equation:

FL Posttest Score = $f(\text{constant, sex, age, whether the student makes decisions for the household, school type, perceived relevance of the training, whether the student has held a job, the financial literacy pretest score, and changes in the perception of soft skills after the training})$

Table 6 provides descriptive statistics for the variables in our regression model.

The dependent variable is the total number correct on the 10-question financial literacy posttest, administered at the end of the YEP training. For the independent variables, Sex is a dummy variable with one representing females and zero representing males. Age is the student's age in years at the time of the pretest. FinDecMak is a dummy variable indicating whether the student says he/she makes the financial decisions for the household. Polytechnic indicates whether or not the student attends a polytechnic school (one) or another type of school (zero), primarily BLK's or LPK's. ImplementAll is a dummy variable representing the student's perceived value of the training. A value of one indicates that the student plans to implement all of the knowledge that he/she learned in the

Table 5
Trainer and Student Satisfaction with YEP Training.

Trainers (N = 25)		Students (N = 595)	
<i>Training methods useful for training students?</i>	Yes definitely: 22 Yes to some extent: 3 No not really: 0	<i>Training provided knowledge to make better decisions?</i>	Yes definitely: 539 Yes to some extent: 52 No not really: 4
<i>Training content meets students' needs?</i>	Yes definitely: 19 Yes to some extent: 6 No not really: 0	<i>Training provided confidence to make better decisions?</i>	Yes definitely: 522 Yes to some extent: 67 No not really: 6
<i>Training gave knowledge to train others?</i>	Yes definitely: 25 Yes to some extent: 0 No not really: 0	<i>Will you implement your new knowledge and confidence?</i>	Yes definitely: 470 Yes to some extent: 119 No not really: 6
<i>Training gave confidence to train others?</i>	Yes definitely: 25 Yes to some extent: 0 No not really: 0	<i>Was your instructor approachable and engaging?</i>	Yes definitely: 467 Yes to some extent: 122 No not really: 6
<i>Overall, satisfied with training?</i>	Yes definitely: 25 Yes to some extent: 0 No not really: 0	<i>Did the teaching methods help you to learn the material?</i>	Yes definitely: 532 Yes to some extent: 58 No not really: 4

Table 6
Definitions and Descriptive Statistics of Regression Model Variables.

Variable Name	Description	Mean
FLPosttest	Score on 10-question financial literacy posttest	7.80 (1.87)
Sex	0 = male 1 = female	0.44 (0.50)
Age	Age in years at time of pretest	21.32 (2.57)
FinDecMak	Makes most financial decisions for household: 0 = No; 1 = Yes	0.38 (0.49)
Polytechnic	Attends polytechnic 0 = No; 1 = Yes	0.59 (0.49)
ImplementAll	Plans to implement all that learned in training 0 = No or not completely; 1 = Yes definitely	0.79 (0.41)
Job	Has ever held a job 0 = No; 1 = Yes	0.44 (0.50)
FLPretestScore	Score on 10-question financial literacy pretest	6.59 (1.94)
SSChangeScore	Change in perceived soft skills, before to after training	3.05 (4.29)

N = 575.
() – Standard Deviation.

training into their daily lives and zero indicates that he/she plans to implement only some or none of what they learned in the training.¹⁴ *Job* refers to whether the student has ever had a job (one) or not (zero). The *FLPretestScore* is the score on the 10-question financial literacy knowledge test before the YEP training began, and the *SSChangeScore* is the index of the change in self-perceived acquisition of soft skills due to the training.

We are unable to include instructor fixed effects in our model because we are unable to systematically sort out the effects of individual instructors due in part to the complexities of team-taught training sessions. In conducting the 30 trainings, the 25 trainers (plus one master trainer) teamed up with one another to teach 22 of the 30 sessions. Some of these team-taught sessions had two trainers and some had three trainers, and they involved multiple combinations of co-trainers across different institutions. Trainers also varied in the number of trainings they conducted, ranging from one to four and whether or not they had attended a refresher course. Any instructor effects would therefore also have to account for experience skills acquired due to conducting multiple trainings and at the refresher courses. Furthermore, the data do not indicate the shares of work each trainer undertook within the various training teams at each location. The multiple combinations of these different effects make sorting for individual instructor differences impossible with the data at hand.

Regression results are displayed in [Table 7](#). We report both full model coefficients (Column 2) and coefficients from an alternative model (Column 3), where we eliminate the variable *ImplementAll*. As shown in both columns, contrary to many prior studies, we do not find significant differences between male and female learning of financial literacy concepts, with males outperforming females. In

¹⁴ We experimented with other measures of satisfaction with the training and found this to be the most robust. We do not include a variable for whether the student attended all of the training sessions because the vast majority of students, over 97 percent, reported attending all of the sessions.

Table 7
Regression Model Dependent Variable: Financial Literacy Posttest Score.

Variable	Full Model Coefficients	Alternative Model Coefficients
Constant	4.60*** (7.70)	4.97*** (7.88)
Sex	0.17 (1.33)	0.20 (1.45)
Age	-0.04 (1.45)	-0.05 (1.62)
FinDecMak	-0.16 (1.14)	-0.13 (0.93)
Polytechnic	0.24 (1.60)	0.17 (1.12)
ImplementAll	0.31* (1.99)	----
Job	0.55*** (3.89)	0.50*** (3.94)
FLPretestScore	0.50*** (14.38)	0.51*** (13.97)
SSChangeScore	0.03** (2.08)	0.03** (1.89)
F-Statistic Adjusted R ²	36.99 0.33	38.22 0.31

() – t-value; two-tailed test.

* – $p < .10$.

** – $p < .05$.

*** – $p < .01$.

fact, the coefficient on female is positive. We believe that this may be due to the dominant role of women in Indonesian households in making domestic financial decisions and that this may serve as an incentive for women to learn the material. Age differences are also insignificant, although it is interesting that the coefficient on age is negative. This is likely due to younger students attending the more prestigious polytechnic schools, with older students attending BLKs and LPKs and seeking job re-training. With respect to financial decision making, we would expect that those taking on the responsibility of making the financial decisions for their household would be more motivated to learn the financial literacy materials presented in the training. However, like the findings for age, this result is also negative but statistically insignificant. The negative coefficient is unexpected and may reflect over-confidence on the part of the self-identified decision makers.

After controlling for the other factors included in the model, we find that gains in student scores did not vary significantly across polytechnic schools, BLKs and LPKs. Although polytechnic students have graduated from high school and have passed competitive entrance requirements, this higher level of training was not associated with larger gains in financial understanding. It is important to note that polytechnic students entered the program with higher levels of financial literacy as measured by total pretest scores (mean = 6.96) compared to those students in both BLKs (mean = 6.35) and LPKs (mean = 5.16). Thus, as will be discussed further, the program appears to have equally improved the financial understanding for the three groups regardless of the level of pre-existing knowledge that each brought to the program.

As shown in Table 7 Column 2, students who plan to implement all that they learned in the YEP training in their daily lives score significantly higher on the financial literacy posttest than those who do not. However because it is likely that the variable ImplementAll is endogenous and related to outside factors such as a general motivation to succeed, we run the regression without this variable and report the results in Column 3. A comparison of coefficients in Columns 2 and 3 shows nearly identical results, so we continue to include ImplementAll in the model. In addition to indicating satisfaction with the training, planning to implement all of what was learned in the training may be a reflection of the differential value of the training for some students: Those who found the training to be more relevant to their lives may have incentives to learn more in general.

Also related to training relevance, students who have ever held a job are significantly more likely to score higher on the financial literacy posttest than others, even when holding constant for factors such as age and the pretest score. This implies that those with workplace experience may recognize the importance of financial literacy in terms of both job success and financial security and thus have more incentives to learn it.

The financial literacy pretest score is also highly significant, indicating that those who entered the training with more knowledge also leave with more knowledge. The index of the soft skills change score is significantly related to financial literacy knowledge as well, perhaps demonstrating that students who were more motivated to learn financial literacy concepts were also more motivated to learn soft skills. The interaction between soft skills and financial literacy is interesting and requires more attention as a topic for future investigation.

Taken as a whole, the implications of these findings are that the YEP TOT model is successful in improving financial literacy and soft skills acquisition for the target population of poor and vulnerable youth in Indonesia. Motivational factors such as having job experience and recognizing a relevance of the training for their daily lives improve students' financial literacy scores. It is encouraging that the materials in the YEP curriculum were designed to be adaptable and replicable so that it may be possible to modify the materials and repeat the program in other countries.

5.5. Differences across institutional types

To take a closer look at how student performance varied across institutional types, we conducted paired sample t-tests of pre and posttest scores in total and for each item on the financial literacy knowledge test and the index of self-perception of soft-skills acquisition. The results of these tests are shown in Tables 8 and 9.

Examination of Table 8 reveals that regardless of institutional type, students performed better on the financial literacy knowledge

Table 8

Paired Sample Test of Difference in Means - Post-Test Minus Pre-Test on Financial Knowledge Items by Institution Type.

Item	Polytechnics		BLKs		LPKs	
	Difference	t-value	Difference	t-value	Difference	t-value
1	-0.006	0.816	0.019	1.743*	0.013	0.445
Prioritize	(0.132)		(0.137)		(0.251)	
2	0.009	0.333	0.102	2.510**	0.063	0.928
Goal	(0.484)		(0.509)		(0.603)	
3	0.133	5.205***	0.108	2.943***	0.013	0.199
Training	(0.475)		(0.461)		(0.562)	
4	0.052	1.884*	0.095	2.319**	0.150	2.653***
Budget	(0.514)		(0.515)		(0.506)	
5	0.303	9.946***	0.291	5.890***	0.295	3.333***
Compounding	(0.568)		(0.621)		(0.691)	
6	0.121	3.947***	0.209	5.194***	0.230	2.683***
Credit rating	(0.572)		(0.505)		(0.668)	
7	0.020	0.768	0.076	1.913*	0.410	6.057***
Loan sharks	(0.490)		(0.499)		(0.528)	
8	0.084	3.399***	0.146	3.952***	0.197	2.558**
Risk	(0.459)		(0.463)		(0.601)	
9	0.110	4.607***	0.222	5.717***	0.295	4.658***
Credit	(0.443)		(0.487)		(0.495)	
10	0.214	7.960***	0.297	6.983***	0.279	4.181***
Interest	(0.500)		(0.535)		(0.521)	
Total	1.040	10.754***	1.551	11.324***	1.213	5.248***
	(1.800)		(1.721)		(2.067)	

Each individual item can be found in the Appendix.

() – Standard Deviation.

* – $p < 0.10$.** – $p < 0.05$.*** – $p < 0.01$.**Table 9**

Paired Sample Test of Difference in Means - Post-Test Minus Pre-Test on Soft-Skills Items by Institution Type.

Item	Polytechnics		BLKs		LPKs	
	Difference	t-value	Difference	t-value	Difference	t-value
1	0.049	1.603	0.165	3.247***	0.587	5.115***
Respect	(0.571)		(0.637)		(1.027)	
2	0.153	4.698***	0.247	4.112***	0.481	5.355***
Listening	(0.606)		(0.754)		(0.798)	
3	0.408	9.590***	0.272	4.138***	0.582	5.136***
Communication	(0.790)		(0.827)		(1.008)	
4	0.267	7.670***	0.153	2.365**	0.575	4.252***
Acting responsibly	(0.646)		(0.810)		(1.209)	
5	0.460	11.010***	0.278	4.306***	0.813	5.379***
Confidence	(0.776)		(0.813)		(1.351)	
6	0.154	4.662***	0.134	2.744***	0.313	3.969***
Teamwork	(0.612)		(0.611)		(0.704)	
7	0.396	9.905***	0.228	3.920***	0.375	4.560***
Problem solving	(0.744)		(0.731)		(0.736)	
8	0.202	4.970***	0.044	0.717	0.188	1.890*
Networking	(0.757)		(0.777)		(0.887)	
9	0.350	8.891***	0.297	4.407***	0.475	4.650***
Time management	(0.732)		(0.848)		(0.914)	
10	0.618	13.418***	0.500	7.030***	0.203	1.946*
Action Plan	(0.857)		(0.894)		(0.925)	
Total	3.090	14.888***	2.212	6.813***	4.551	6.950***
	(3.844)		(4.054)		(5.783)	

Each individual item can be found in the Appendix.

() – Standard Deviation.

* – $p < 0.10$.** – $p < 0.05$.*** – $p < 0.01$.

test after participating in YEP. This is true for the overall total test scores, shown in the bottom row, and for most of the individual test items. This confirms the regression results reported above: All students, whether they attended a polytechnic, a BLK, or an LPK, improved their measured financial literacy score through the training received through the program. Interestingly, the only clear pattern across the individual test items is that the improvements (as measured by the differences between pre and posttest scores) for BLK and LPK students tend to *exceed* those of the polytechnic students. This relationship is also seen across the totals for each student group. As noted earlier, polytechnic students, by virtue of their previously attained human capital, entered YEP with higher levels of initial financial understanding. Thus, even while the regression results revealed no significant difference between the three groups' overall performance, it is important to note that the program significantly improved the financial literacy of the BLK and LPK student groups across a broad spectrum of financial topics even though they are relatively more "poor and vulnerable" than the polytechnic cohort.

To more easily identify differences for individual items across types of institutions in the financial literacy and soft-skills tests, we inserted one or two-word phrases describing each of the ten questions in Column 1 in Tables 8 and 9. (Full questions are provided in the Appendix.) With respect to the ten individual financial literacy questions in Table 8, it is interesting that BLK students showed significant increases in knowledge on all 10 questions, while polytechnic and LPK students each showed significant increases for seven out of the ten questions. Only BLK students showed increases in knowledge for Question 1 (Prioritizing) and Question 2 (Goals). Breaking down pre and posttest scores by school type (not shown in the table) gives insights into these differences. For Question 1, polytechnic students scored 99 percent on the pretest, leaving little room for improvement. For Question 2, polytechnic students started and ended higher than others but showed little improvement in scores (70–71 percent), perhaps indicating confusion about the question or with the material presented in the curriculum. It is surprising that LPK students did not show significant improvements for Question 3 (Training), a relatively straightforward question which addresses improving one's standard of living through acquiring more training, while both polytechnic and BLK students showed highly significant improvement. It is also surprising that polytechnic students did not show significant improvement on Question 7 (Loan sharks). Because explanations for differences in responses across institutions for some of the financial literacy questions are not intuitive, further investigation is warranted into issues such as knowledge of the trainers about the concepts or confusion about the material in the curriculum.

Table 9 reveals the gains across the three institutional types in the Likert scale scores for the total soft-skills index and for each individual item. As seen in the bottom row of the table, the overall total index scores on the posttest were significantly higher than the pretest scores for all three groups. The overall gain was greatest for the LPK students followed by the polytechnic students and then the BLK students. Given that the original pretest index scores were closely clustered (means = 42.87, 45.19, and 44.49 for the polytechnic, BLK and LPK students respectively) and that no apparent pattern emerges from examination of the individual items, it appears that the YEP intervention had a similar impact on participants' perceptions of their own soft skills regardless of institutional type.

Only two of the ten soft-skills items do not show significant increases in the index scores across all three institutional types. Polytechnic students did not show significant improvements for Question 1 (Respect), which involves recognizing that showing respect leads to more positive relationships. Further investigation reveals that polytechnic students rated themselves very high for this on the pretest (4.81 out of 5) so there was little opportunity for improvement. It is interesting that BLK students did not show significant improvement on Question 8 (Networking), which involves understanding how social networks can be used to their benefit. This may be because BLK students, who are relatively older and more likely to have been school dropouts, may lack access to professional social networks and therefore not recognize their potential.

The overall conclusion drawn from the analysis of differences in scores across institutional type is that the YEP program was roughly equal in effectiveness across each cohort regardless of their relative differences in previously acquired human capital or life experiences. While most individual items showed significant increases for students from all three types of institutions, some of the financial literacy questions require further investigation to explain differences in significance among BLKs, LPKs, and polytechnics.

6. Summary and conclusions

We have described a USAID-funded project to improve financial literacy and soft skills of poor and vulnerable youth (aged 18–34) in Indonesia. As part of a larger workforce development initiative, the YouthWin through Economic Participation (YEP) project reached 601 youth in vocational schools in West Java over an 18-month period. These students were trained by 25 vocational school instructors who participated in a financial life skills Training of Trainers held in Jakarta during December 2017.

Results of the program are extremely positive, with financial literacy knowledge increasing significantly for both the trainers and the students. Students' self-perceptions of acquisition of soft skills increased significantly as well. It is important to emphasize that the YEP training is equally effective in improving financial literacy and perceptions of soft skills acquisition for both males and females and regardless of age. The program is also effective across school types, with students from polytechnics, BLKs and LPKs all showing improved scores and perceptions. While we are unable to sort for individual instructor effects on the training, our results indicate that students who have work experience outperform those without work experience, perhaps because they note the relevance of the training to the real world. Students who plan to implement the training into their daily lives also outperform those who do not, likely because they were more enthusiastic about the relevance of the training. There appear to be interactions between financial literacy knowledge and perceptions of acquisition of soft-skills that require more investigation. Both trainers and students indicate high overall satisfaction with the training in terms of content, methodology, and relevance.

Overall, the positive outcomes of the YEP project are heartening given the literature linking financial literacy and soft skills to

factors such as improved productivity, entrepreneurship practices, and employability. These outcomes benefit the recipients of the YEP training and the local economies, and have positive implications for the Indonesian economy as a whole.

Declaration of Competing Interest

None.

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Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.iree.2019.100168>.

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