



Citi-SMU Financial Literacy Program for Young Adults: Research Findings 2018

SIM KEE BOON
INSTITUTE FOR
FINANCIAL
ECONOMICS



CITI-SMU
**FINANCIAL
LITERACY**
PROGRAMME FOR YOUNG ADULTS



Supported by:
Citi Foundation

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TABLE OF CONTENTS

Contents

Foreword from Citi	1
Foreword from SMU	3
Executive Summary	5
Research Findings	7
Conclusion	26
References	28
Appendix 1A (2018)	29
Appendix 1B	31
Administration and Contact Information	33

Cover Photographs:

5th Citi-SMU Financial Literacy Symposium (Top Right). Left to right:

- Assoc Prof Jeremy Goh, Principal Investigator, Citi-SMU Financial Literacy Program for Young Adults, SMU
- Mr Adam Rahman, Head of Corporate Affairs, Singapore & ASEAN, Citi
- Mr Zaqy Mohamad, Minister of State, Ministry of National Development and Ministry of Manpower
- Professor Lily Kong, President, SMU
- Asst Prof Aurobindo Ghosh, Principal Investigator, Citi-SMU Financial Literacy Program for Young Adults, SMU

Inaugural MyMoney@Campus at Polytechnics Launch Event (Bottom Left):

- Guest of Honour Minister for Education Mr Ong Ye Kung (9th from left)
- Mr Lee Boon Ngap, Assistant Managing Director (Capital Markets) at MAS
- Deputy Secretary (Policy) Ms Lai Wei Lin at MOE
- Divisional Director (Income Security Policy) Mr Sim Feng Ji at MOM
- Mrs Ong Ai Boon, Director at ABS
- Senior Representatives from SMU: Dean Gerry George, Prof Jeremy Goh, Prof Aurobindo Ghosh
- Senior Representatives from MAS/MoneySENSE: Ms Abigail Ng, Ms Winnie Lim
- Senior Representative from Citibank Singapore / Citi Foundation: Adam Rahman
- Senior Representatives from the 5 Polytechnics

FOREWORD FROM CITI

Foreword from Citi



When Singapore launched its national financial education programme, MoneySense in 2003, it signaled the understanding of financial management as a key life-skill. This national agenda provided the perfect platform for Citi Singapore, which had embarked on imparting financial literacy among school students just a year earlier. Our financial inclusion efforts are a natural

extension of the work we do as a financial institution, and it reflects our global mission of enabling growth and progress to clients and communities where we live and do business.

Citi Singapore has been a steadfast advocate of Financial Inclusion and Youth Empowerment since 2002, having committed more than S\$18 million in grants to date (2018) from Citi's Philanthropic arm, the Citi Foundation. The funding goes towards programmes organized in partnership with established NGOs, government organizations and educational institutions including the Singapore Management University (SMU). These grants have benefited children, youths, young adults, mature women, teachers, social workers, and the public, reaching more than half-a-million students and over 6,000 low-income mature women who are amongst the most financially vulnerable in Singapore.

The Citi-SMU partnership was born out of a tripartite conversation between the policymakers at the Monetary Authority of Singapore and MoneySense, Citi Singapore and Citi Foundation and finally, the Singapore Management University's Sim Kee Boon Institute for Financial Economics. Citi-SMU Financial Literacy Programme for Young Adults was launched in 2012 to address the growing need for financial literacy among young adults from low to middle-income populations. The programme, which is the first structured financial literacy programme for young adults in Singapore covering the pre-tertiary and tertiary education sector, equips youth (aged 17-30) with essential personal finance knowledge and skills through lectures and

FOREWORD FROM CITI

workshops to give them a firm foundation in managing their finances. The programme also trains tertiary students as financial literacy coaches to enable multiplier impact amongst young adults through peer-to-peer learning.

Since its launch, over 280 SMU students and 220 students from the Institute of Technical Education and from Polytechnics have been trained as coaches, and at least another 30,000 youths have attended the programme. Post-programme findings (2018) revealed that 60% of beneficiaries have increased their financial literacy knowledge whilst 30% have demonstrated a change of perception after participation.

Citi Singapore is committed to continuing this partnership with Singapore Management University, which contributes to the national conversation on the future of financial awareness and education among the youth. My Citi colleagues and I take this opportunity to thank SMU, their staff, faculty, and students for this meaningful journey of financial wellness for the whole nation, in particular, the current and future stakeholder – the youth of Singapore.

Amol Gupte

ASEAN Head and Citi Country Officer, Singapore

Citi

FOREWORD FROM SMU

Foreword from SMU



A 2015 report by the S&P Global Financial Literacy Survey revealed that Singaporean adults are ranked the highest in Asia in terms of their financial literacy and financial knowledge.

While that was heartening news, it is likely that Singaporeans will have to take still greater responsibility for their own financial future, with the advancement in healthcare leading to higher life expectancy, the decline in

traditional retirement benefits due to intense global competition, and the advent of the gig or sharing economy.

As with many things in life, it is best to start when one is still young, and this applies to financial literacy and preparing for one's financial future as well.

SMU is proud to have partnered Citi Singapore for the Financial Literacy Programme for Young Adults since 2012 as the first structured financial literacy programme for young adults in Singapore. The Programme has created meaningful impact by training more than 400 student trainers from SMU, Polytechnics and Institute of Technical Education, who have in turn reached out to more than 30,000 young adults from these academic institutions and other organisations.

Beyond the number of beneficiaries the Programme has reached out to, SMU and Citi decided to embark on a study in 2018 to look into the effectiveness of the Programme in imparting financial knowledge and nurturing responsible financial behaviour. The results of the study have been encouraging - 60% of the participants who responded to the survey have expanded their basic understanding of personal finance and increased their financial literacy, and 44% respondents have started a regular savings account three to six months after the attending the Programme.

The study showed how the peer-to-peer, interactive and experiential pedagogical model adopted by the Programme has enabled young Singaporeans to achieve better financial well-being by maintaining good financial habits.

The Citi-SMU Financial Literacy Programme has made good progress since its inception.

FOREWORD FROM SMU

The Programme complements that of the Singapore Government's, which runs the national financial education programme called MoneySENSE. SMU will continue to work closely with Citi to expand the scope and reach of our Programme, so that more young adults in Singapore will be able to benefit. We also look forward to working with more like-minded partners so that the Programme's content offerings will be enriched.

Professor Lily Kong
President
Singapore Management University

EXECUTIVE SUMMARY

Executive Summary¹

2018 was a watershed year for the Citi Financial Literacy Program for Young Adults. The train-the-trainer peer-to-peer program disseminating concepts of Financial Literacy in both synchronous (face-to-face curriculum and offline based) and asynchronous (Online game based) **reached out to over 4600 beneficiaries** (almost 5% higher than target of 4400) through multiple levels of engagements like small group learning sessions along with seminars and symposia in bigger events like **MyMoney@Campus at the different Polytechnics which reached a further 7200**. For the workshops, approximately **60% or 2760** beneficiaries demonstrating increased level of knowledge of Financial Literacy, appreciation of skills and concepts and as much as **82% or 3772** improved or kept the same level of financial knowledge as we reached out to as much as 50% of the incoming cohort for SMU.

Having participated in the Citi-SMU Financial Literacy Program for Young Adults, **using basic financial management tools** like maintaining spending records, approximately **29% more increased their savings rate** by spending less than they earned as salary or allowance. In general, we find that between three to six months **after participating in the Citi-SMU Financial Literacy Program for Young Adults, 13% more have increased their level of savings** by spending less than their allowance or income. In the same time span, we further observed that **10% more participants overall have started a regular savings account**. From the respondents polled, we observed around **16% more beneficiaries who have started investing prudently after participating** in the program and **about 8% more are confident they have adequate insurance coverage**. Overall, we see that three to six months after participating in the Citi-SMU Financial Literacy Program for Young Adults, the beneficiaries of the program seem to exhibit change of behavior in financial decision making.

The effectiveness of the Citi-SMU Financial Program for Young Adults was measured in a two-pronged manner. First, the participants were asked to take customized pre- and post-quiz before and after sessions to evaluate the effectiveness of learning content delivery. In the 2018 study, we further enhanced it with measuring discernable impact on financial literacy between matched survey 1 and survey 2 respondents that are administered concurrently and

¹ The author would like to thank Lily Kong, Gerry George, Howard Thomas, Jeremy Goh, SMU colleagues and panelists at the Financial Planning Round Table in the Annual FMA Meetings in San Diego, 2018 for helpful comments and suggestions. The author would also like to acknowledge the generous funding from the Citi Foundation towards the Citi-SMU Financial Literacy Program for Young Adults, Citi Singapore for their helpful comments and support of colleagues within SMU. Finally, this report would not be possible without the efforts of the Citi-SMU Financial Literacy Club and the trainers and participants of the Program, able research assistantship from Ms. Shuyu Xue among others. Usual Disclaimers Apply. © 2019 Aurobindo Ghosh, All Rights Reserved.

EXECUTIVE SUMMARY

thereafter, three to six months after the session (Klapper et al, 2014). We also looked at the ability to give or take financial advice.

First, participants were administered a customized quiz at the start and completion of the peer-to-peer training sessions of foundational concepts in personal finance. Evaluating the difference, we were able to gauge whether there was an improvement in the understanding of basic money management skills and other key areas of financial literacy. Second, we deployed two surveys to program participants to track the effectiveness of the program in the medium term of three to six months. Survey 1 established a benchmark on demographic details and financial decision making of participants prior to the Citi-SMU Financial Literacy Program for Young Adults. The purpose of Survey 2, fielded three to six months after the first survey, was primarily aimed at tracking changes in behavior of the participants' management of their personal finances. The surveys elicit information on the participants' use of simple tools of financial planning and investment activities. We further supplement measurement of learning outcomes through deploying additional questions adopted from the Global Financial Literacy Survey (Klapper et. al, 2015).

The collection, collation and analysis of the data collected under the auspices of the Institutional Review Board (IRB) framework² which deals with data protection and sensitivities of human subjects found overwhelming evidence that the delivery of the learning content is indeed effective in not just increasing knowledge of the curriculum but also distinct changes of knowledge of non-curricular decision-making process. Furthermore, according to global financial literacy survey questionnaire, almost 70% showed at least as much or higher knowledge of financial concepts. We further find that deeper behavioral traits like advising older folks planning their retirement and younger folks starting their careers has been at 63% and 69% of the respondents respectively. We find behavior change in financial decision-making including controlling spending, budgeting, starting regular savings accounts and even gained confidence in managing money following prudent investment strategies.

In 2018, the state of the Peer-to-peer Train-the trainer Citi-SMU Financial Literacy Program for Young Adults is great. The program met and extended its objective of promoting financial awareness and changing behavior of young adults through financial literacy.

² The Citi-SMU Financial Literacy Program for Young Adults Research has been approved by the SMU Institutional Review Board (IRB). We acknowledge SMU-IRB Approval Number: IRB-16-069-A072(816), and thereafter with modifications include both online and offline survey questionnaires SMU-IRB Modification Number: IRB-16-069-A072-M2(1016) and SMU-IRB Continuation Number (IRB-16-069-A072-C1(1017)).

RESEARCH FINDINGS

Research Findings

"...The continued involvement of businesses will be vital for unlocking opportunities to expand financial inclusion. Companies pay wages in cash to about 230 million unbanked adults worldwide; switching to electronic payrolls could help these workers join the formal financial system. Mobile phones and the internet also offer strong openings for progress: globally, one billion financially excluded adults already own a mobile phone and about 480 million have internet access..."

-In her Foreword to the Global FINDEX Survey, 2017, Her Majesty Queen Maxima, The Netherlands, UN Secretary-General's Special Advocate for Inclusive Finance for Development

Motivation and Foundation: Financial Literacy as a Catalyst for Inclusion

Her Majesty Queen Maxima of the Netherlands in her foreword for the 2017 World FINDEX Survey by the World Bank alluded to the role business can play in catalyzing Financial Inclusion (World FINDEX Survey). Technology seem to be the main driver that can affect financial inclusion in particular through financial literacy. In the World Economic Forum (WEF) in Davos, Switzerland, highlighting the rising global inequality³ the development charity Oxfam cited the work by Thomas Piketty and coauthors of The World Inequality Report 2018 mentioning that between "...1980 and 2016 the poorest 50% of humanity only captured 12 cents in every dollar of global income growth. By contrast, the top 1% captured 27 cents of every dollar." At Citi-SMU Financial Literacy Program for Young Adults, our goal has always been to identify the most effective method to increase financial literacy among financially disadvantaged using a peer-to-peer train-the-trainer model, while at the same time promoting standardization of content, scalability of the deployment of the content and finally making sure it is sustainable in the long run. In achieving these lofty targets we deployed the concept of a private-public partnership discussed by Ghosh (2018) and others (Lusardi and Mitchell, 2014, Lusardi and Tufano, 2009, Ghosh and Thomas, 2018).

Extant academic literature has been split on the efficacy of traditional approach to Financial Literacy. One strand of literature using meta-analysis finds scant evidence of the effectiveness of studies on financial literacy (Fernandes, Lynch, and Netemeyer, 2014). While another strand of literature with similar meta-analysis of multiple studies find that there is some

³ <https://www.theguardian.com/business/2019/jan/21/world-26-richest-people-own-as-much-as-poorest-50-per-cent-oxfam-report>

RESEARCH FINDINGS

degree of effectiveness in delivering financial literacy programs in changing future behavior (Miller, Reichelstein, Salas, and Zia, 2014; Behrman, Mitchell, Soo, and Bravo. 2012). As observed in our past analysis, in this report we want to highlight a non-standard form of delivery (both synchronous and asynchronous game based methods) that addresses some of the issues like “just in time” advice previously recommended (Fernandez et al., 2014, Ghosh, 2018). We further deploy the private-public partnership model and test for effectiveness using surveys.

First, like any other form of education, financial literacy also needs reinforcement. This accentuates the need for not just financial education but a delivery system that is practically grounded. Traditional methods of education might not be sufficient in addressing this challenge. Educational institutions have the skill sets of developing new delivery systems as we have seen in participation of SMU Freshmen students (Freshmen Orientation Camp) in designing games to increase level of fun, engagement and learning outside of the classroom environment like human foosball (Figure 2).

Second, this also emphasizes lifelong learning as the products and services change over time. Financial institutions which has deeper knowledge, and more importantly, the risk associated with the new products need to take leadership in doing translation research in explaining this to the consumers and investors. We adopted this model with several partners including Citi, GIC, CPF Board, startups like Robo-advising startup Stashaway giving training sessions and seminars (Figure 9).

Finally, the need for a sustainable network, community and mentorship available to the vulnerable, unbanked or underbanked population is a growing concern for policymakers. Policymakers with the need to address a potential deluge of uninformed or misinformed financial decisions. We employed this form of partnership in working closely with MAS MoneySense and ABS to organize the inaugural MyMoney@Campus at the Polys with over 7200 participants (Figures 5-10).

We have successfully deployed the model proposed in the previous 2017 report and delved into some of the events and findings in this research report (Ghosh, 2018).

RESEARCH FINDINGS

Background and Outreach



Figure 1: Financial Literacy Camp in ITE in 2018

Just over a decade back the financial world was rocked by the Global Financial Crisis (GFC) and the consequent Great Recession caused a ripple effect the impact of which is still felt in decisions made by governments and financial institutions around the world. The Citi-SMU Financial Literacy Program for Young Adults owes its genesis to these seismic events that left an indelible mark on the world economy and no country in the world including Singapore was unaffected.

Following the often repeated adage, “Prevention is better than cure,” Citi-SMU Financial Literacy Program for Young Adults was initiated to disseminate concepts of financial literacy among low to middle income Singaporean households through a peer-to-peer learning environment. SMU student trainers in collaboration with affiliate trainers from partner institutions in the program have gone through a rigorous process of selection, screening and coaching for capabilities. SMU faculty, staff and industry experts ran the training sessions for Citi-SMU trainers. The content delivered is vetted by SMU faculty with the relevant expertise and knowledge that enable the trainers to fully benefit from the program and acquire the right skillsets needed to manage and effectively run the multiplatform (offline and online) synchronous training sessions.

The evidence of effectiveness of the Citi-SMU Financial Literacy Program for Young Adults in changing financial knowledge and behavior in the relevant section of the research report to Citi Foundation. The Research team under Principal Investigator (Research) Aurobindo Ghosh has conducted the research under the auspices of Institutional Review Board since 2016 and also obtained IRB approval for



Figure 2: Financial Literacy Human Foosball

RESEARCH FINDINGS

deployment in both online and offline financial literacy game based environments. Once again to the best of our knowledge, this is the first time a structured Financial Literacy Program is being implemented with live data being collected and analyzed under the auspices of the Institutional Review Board with AAHRPP accreditation, the first institution in Singapore to have the affiliation.



Figure 3: Financial Literacy Awareness Day in ITE

Since 2012, through Citi Foundation's generous support, the program has successfully improved the financial literacy of youths through workshops and various forms of outreach programs, reaching out to over 30,000 beneficiaries (including the series, MyMoney@Campus at Polytechnics) with 284 SMU Trainers and 228 affiliate trainers, some of which we describe below for 2018.

Citi-SMU Financial Literacy Program for Young Adults espoused the Train-the-trainer peer-to-peer methods of delivery and has been widely recognized in its impact in community outreach. It has been extensively appreciated across the board by various institutions including administrators and policymakers like the Monetary Authority of Singapore (MoneySense).

In 2018, Citi-SMU Financial Literacy Program for Young Adults organized various financial literacy outreach programs for school, ITE, Polytechnic and University students, as well as beneficiaries under Self-Help groups such as Chinese Development Assistance Council, and Non-profit organizations such as Babes Pregnancy Crisis Support, such as:

- Interactive Peer-to-Peer Workshops



Figure 4: Hands-on peer-to-peer training Session

RESEARCH FINDINGS

- Financial Literacy Camps (this year in addition to our yearly camp for SMU freshmen (Compounding), we organized a camp for ITE students in collaboration with Touch Community Services – Figure 1)
- Financial Literacy Human Foosball as part of SMU freshmen orientation (Figure 2), which makes SMU the first university in Singapore introducing financial literacy to its freshmen
- Financial Literacy Carnivals (i.e. Financial Literacy Awareness Day at the ITE colleges – Figure 3, Financial Literacy Bonanza at SMU – Figure 4, My Money @ Campus – see the next section)
- Financial Literacy Competitions such as FinLitChallenge, Citi-SMU-ITE College Central FinLit Amazing Race in the CBD, Citi-SMU-ITE College West Cash into the Future Competition, Citi-SMU Temasek Polytechnic FinLit Hackathon)
- 5th Citi-SMU Financial Literacy Symposium: FinTech: Empowering Youth and the Future of Work
- Portfolio Management Workshops for SMU students
- Smoolah – the new Augmented Reality-based mobile game app, which incorporates various financial literacy concepts through fun game play (in progress)

The reputation of the program has reached beyond the shores of Singapore. We have been invited by University of Economics and Law, Vietnam National University to conduct a financial literacy workshop for a group of 30 Vietnamese students visiting SMU in March 2018.

Citi-SMU Financial Literacy Program for Young Adults has gained significant recognition and acknowledgement from the Singapore government (for example, Ministries of Manpower; Education; Culture, Community and Youth), senior representatives from Monetary Authority of Singapore and other organizations. Many of the leadership have graced our annual Citi-SMU Financial



Figure 5: Financial Literacy Bonanza at SMU

Literacy Symposium in 2018 and also invited the Citi-SMU leadership to attend appreciation events at CPF Board, MAS, and the flagship MoneySense Annual Campaign Roadshow 2018

RESEARCH FINDINGS

at Our Tampines Hub. At the launch of My Money @ Campus and the 5th Citi-SMU Financial Literacy Symposium, the luminaries who attended include:

- Mr Ong Ye Kung, Minister for Education
- Mr Zaqq Mohamad, Minister of State, Ministry of National Development and Ministry of Manpower
- Mr Lee Boon Ngiap, Assistant Managing Director (Capital Markets), Monetary Authority of Singapore
- Deputy Secretary (Policy) Ms Lai Wei Lin, Ministry of Education
- Divisional Director (Income Security Policy) Mr Sim Feng Ji, Ministry of Manpower
- Ms Eunice Yeo, Assistant Director (Financial Planning Program Office), Ministry of Manpower
- Ms Abigail Ng, Executive Director, Corporate Finance & Consumer Department / MoneySENSE, Monetary Authority of Singapore
- Ms Winnie Lim, Director & Head, Consumer Issues Division, MoneySENSE Secretariat, Monetary Authority of Singapore
- Mrs Ong Ai Boon, Director, Association of Banks in Singapore
- Mr Adam Rahman, Head of Corporate Affairs, Citi Singapore and ASEAN
- Ms Cheryl Chen, Head of Corporate Citizenship, Citi Singapore
- Mr Fonzarelli Ong, Head, Digital Banking, Citibank Singapore Limited
- Professor Lily Kong, Provost, SMU
- Professor Gerry George, Dean of the Lee Kong Chian School of Business, SMU
- Assoc Prof Jeremy Goh, Principal Investigator, Citi-SMU Financial Literacy Program for Young Adults, SMU
- Assistant Professor Aurobindo Ghosh, Principal Investigator, Citi-SMU Financial Literacy Program for Young Adults, SMU
- Senior Management from the 5 Polytechnics

RESEARCH FINDINGS

My Money@Campus at Polytechnics Launch, 2018



Figure 6: GOH Education Minister Ong Ye Kung inaugurating My Money @ Campus in Singapore Polytechnic

"The event was held yesterday at the Singapore Polytechnic. The Minister of Education Ong Ye Kung was a special guest. During his interview, he said that when students enter the community and take care of their careers, they must marry and have children, buy flats, arrange children's education expenses, daily expenses, and investment. They also need to adopt their parents and plan their own retirement. With proper financial management, students are required to have basic financial management skills as early as possible.

He also stated that he would consider extending the financial education program to students of other ages, such as junior colleges, middle schools, or elementary schools. For example, he said that after the younger generation has mastered financial management knowledge, they will share it with their families, which will benefit more people."⁴

Months of planning came to fruition at Singapore Polytechnic in the My Money@Campus co-sponsored by MoneySENSE (Monetary Authority of Singapore) and the Association of Banks in Singapore (ABS) and spearheaded by their main event partner Citi-SMU Financial Literacy Program for Young Adults.

The event was graced by: the Guest of Honour Minister for Education Mr Ong Ye Kung; Mr Lee Boon Ngiap, Assistant Managing Director (Capital Markets) at MAS; Deputy Secretary (Policy) Ms Lai



Figure 7: GOH Minister Ong visiting Citi-SMU Booth with Citi-SMU Students and Representatives from Citi and SMU

⁴ Lianhe Zaobao, May 19, 2018, translated by Factiva

RESEARCH FINDINGS

Wei Lin at MOE, Divisional Director (Income Security Policy) Mr Sim Feng Ji at MOM, Mrs Ong Ai Boon, Director at ABS, besides several other delegates representing MoneySENSE, ABS and their constituent banks, CPF Board, SIAS, Temasek Holdings, all 5 polytechnics and of course SMU faculty and administration represented by the Dean of the Lee Kong Chian School of Business, Prof. Gerry George.

This event was remarkable and a first in so many dimensions. I will just list a few.



Figure 8: GOH Education Minister Ong with Citi-SMU Financial Literacy Club and student organizing committee

SMU students chair the student organizing committee which comprises students from the 5 polytechnics and SMU. It involves more than 250 volunteers across all the polytechnics and SMU students under the umbrella of the Citi-SMU Financial Literacy Program for Young Adults. A truly islandwide initiative addressing a national conversation on Financial Literacy that was highlighted in this year's budget speech by the Finance Minister Heng Swee Keat.

This is the first time My Money@Campus is being held at the polytechnics. Four out of five polys hosted events from May to July 2018. The only polytechnic where this is not hosting (Republic Polytechnic) is also a partner for this event. So this event is the first time Financial Literacy and Education event is partnering all polytechnics. SMU is the only University implementing it and Citi-SMU Financial Literacy Program for Young Adults as the first structured Financial Literacy program spearheaded this initiative.



Figure 9: GOH Education Minister Ong engaged in a game developed by Citi-SMU Financial Literacy Program for Young Adults

Describing the event Lianhe Zaobao (May 19, 2018) noted that “...Students will attend lectures given by business leaders, young investors and financial planners covering basic financial management knowledge such as fund management, financial planning and

RESEARCH FINDINGS



Figure 10: Polytechnic students participating in seminar by industry leaders from Stashaway, GIC and Provident

investment. Singapore Management University and Citi Singapore will jointly implement the 'fiscal' carnival, using a game based on financial knowledge to cultivate students' habits of financial self-regulation and long-term savings." The first formal recognition of the contribution of Singapore Management University in the Financial Literacy and Financial Education landscape in the tertiary sector and spearheading this initiative through the innovative peer-to-peer Train the Trainer program conceptualized by current Principal Investigator (Outreach) Prof. Jeremy Goh back in 2012.

Asst MD for Capital Markets (MAS) Mr Lee Boon Ngiap in his opening welcome address acknowledged and appreciated Citi-SMU Financial Literacy Program for Young Adults' contribution to changing the Financial Literacy landscape in the tertiary sector in Singapore. In personal conversation with representatives from Citi Singapore, this is the first time in decades Citi's contribution to various initiatives in the Financial Inclusion in the region was formally recognized by MAS, thanks to the Citi-SMU Financial Literacy Program for Young Adults which they supported since 2012.

This event also marked the official launch of the pilot program for changing of the polytechnics and ITE curriculum in Financial Education to lay foundation for Financial Planning and Knowledge. (*"...the Polytechnic Institute and the School of Technical Education will pilot four financial education courses that include establishing financial goals, budget expenditures, and allowing compound growth in savings and debt impacts to help young people lay the foundation for financial planning and knowledge. The polytechnic and the TPU will collect feedback and review before finalizing the final course content and implementation..."* LZB May 19, 2018) Citi-SMU Financial Literacy Program for Young Adults was approached by the Committee



Figure 11: Financial Literacy Games developed by Citi-SMU Financial Literacy Program for Young Adults

RESEARCH FINDINGS

made up of MOM, MOE and MAS for their curriculum content and delivery methods for non-standard (game based methods) of training Financial Literacy. Once again a first of its kind.

Data and Analysis

Background

In 2018, the Program reached out to 3 ITE's and 5 Polytechnics besides freshmen students at SMU and other institutions including Babes, CDAC, SOTA besides also organizing the inaugural MyMoney@Campus at Polytechnics in collaboration with MAS MoneySense and ABS. As described by the procedures outlined in Appendix 1A (2018), there was a pre and post quiz conducted for the students who attended the sessions. The Citi-SMU Financial Literacy Program for Young Adults reached out to over 4600 beneficiaries and well over the target of 4400. Our signature Train-the-trainers program was further extended to students from all ITEs and all the Polytechnics besides SMU students. Students from all 3 ITE colleges (i.e. ITE College West, ITE College Central and ITE College East) as well as all 5 polytechnics (i.e. Singapore Polytechnics, Nanyang Polytechnics, Ngee Ann Polytechnics, Temasek Polytechnics and Republic Polytechnics) were on board for the training.

Overall, the program has trained and certified 77 (total, 284) student trainers from SMU and 107 (total, 228) affiliate student trainers from ITE and Polytechnics. The greater proportion of affiliate trainers while also increasing number of trainers coached serve multiple purpose. First, scalability as we see an increasing demand from prospective beneficiaries. Second, the affiliate trainers also help up cater to the needs of the individual institution better. We continued collaborations with organizations such as ITE and Polytechnics, as well as beneficiaries under Self-Help groups such as Chinese Development Assistance Council, and Non-profit organizations such as Babes Pregnancy Crisis Support, and deepened existing relationships and explored new partnerships. We also conducted innovative training games like human foosball with almost 50% SMU incoming freshman cohort in the Freshman Orientation Camp, with the objective to establish financial literacy outreach to majority if not at all the tertiary education institutions level in Singapore. In all, we reached out to around 4600 participants in the Citi-SMU Financial Literacy Program for Young Adults through the peer-to-peer train-the-trainer program and over 7200 students in the MyMoney@Campus at the Polytechnics reaching out to over 30000 beneficiaries since inception.

RESEARCH FINDINGS

Measurement of Learning Outcomes

We addressed the measurement of learning financial literacy content into two complementary stages, first to evaluate the short term effectiveness of delivery of content (through pre and post quiz) and second, also evaluating long term retention and synthesis of the concepts taught in the non-standard blended (both curriculum and game based) delivery mechanisms (through Financial Literacy concepts in Surveys 1 and 2). Our singular goal was to evaluate the holistic impact of the training sessions to enhance the effectiveness of the methods we used, and thus achieve higher rungs of Bloom's taxonomy of educational achievements.

For the short term impact, as described by the procedures outlined in Appendix 1A (2018), there was a pre and post quiz conducted for the students who attended the sessions. The quizzes, which were administered in sessions at the various institutions, were specially designed to investigate the improvement of the participants in the knowledge of basic and intermediate concepts of financial literacy, like investment and insurance, as illustrated in Appendix 1B. From analyzing the data from a randomly selected sample size of 1,124 students and participants reached through the program, 674, or 60% (Standard Error of 1%) improved in their basic understanding of concepts of financial literacy. This translates to an estimated 2,776 (Standard Error of 33) out of 4,600 participants reached who showed such improvement. In repeated samples, approximately 57% to 63% of the population proportion improved. While that is an impressive learning achievement, with nearly 11% scores of 8 and above, we also observe that nearly 82% (Standard Error of 1%) participants in the post quiz have scored at least as much as pre quiz. This better than expected result might be attributed to a higher proportion of Polytechnic and University students who participated in the peer-to-peer sessions.⁵

While the increase in scores from the pre- to the post quiz reflected a significant improvement of the learning objectives, we wanted to also enumerate the impact of longer term learning outcomes. In particular, two aspects were investigated. First, the key concepts of financial literacy was captured in the questionnaire adopted from the World Bank Group's Global Financial Literacy Survey (Klapper et. al, 2015). Second, we also investigated the propensity to make better decisions for both retirement readiness and for financial planning in early career. We used the 256 matched pair samples of Survey 1 and Survey 2 to analyze achievements on long term learning outcomes.

We find that as many as 70% of the adult respondents increased or kept their scores on concepts of financial literacy, while around 35% improved on their knowledge. The questions

⁵ A standard 5% significance level or margin of error is expected in this sampling and analysis.

RESEARCH FINDINGS

addressed risk diversification, inflation, numeracy (interest calculation) and compound interest. However, rather than having a right and wrong answer we have used a progressive degree of partial points for wrong answers. For example, for the risk diversification question “1) Suppose you have some money. Is it safer to put your money into a single business or investment, or **into multiple businesses or investments?**” we used the Choice “Do not Know” to have 0 points, “Single Business or Investment,” as 1 point while the correct answer “Multiple businesses or investments” (the correct answer) as 2 points. This overall gave us a score of a maximum of 11 points in the 5 questions. This was one of the most challenging questions to transfer knowledge, with only 2% increasing their knowledge, even though almost 80% knew the answer, consistent with the greater level of financial literacy we find in Singapore (Klapper et al, 2015). On a similar line, while asking about the impact of inflation, 67% got it right 3 to 6 months (Survey 2) after the engagement compared to only 59% during survey 1.

We further evaluated financial readiness through a simulated investment advice to a prospective retiree and a prospective new recruit. From our weighted scale of assigning progressively lower score for a progressively worse options based on appropriateness, we see that as many as 63% (15% strictly improved) have had a higher score or same three to six months after the engagement for advice to retirees whereas almost 70% (9% strictly improved) has as good an advice to ones starting a fresh new career. As these are skillsets that are not specifically taught but to increase awareness, it’s indeed heartening to know how much improvement has happened for changing long term understanding of financial concepts. All these measure allows for a 4% standard error.

These results from the quizzes and surveys in 2018 highlight the effectiveness of content delivery applying the non-standard (game based) peer-to-peer model of financial literacy concepts both in short term and long term. We now turn our attention to propensity of change of financial decision making and behavior.

Propensity of Change of Financial Behavior (Paired Sample)

Participants in the Citi-SMU Financial Literacy Program for Young Adults who took Survey 1 and Survey 2 in 2018 (matched pair), saw a substantial improvement in their propensity to use financial and investment knowledge on decision making. As described in Appendix 1A, Survey 2 is conducted 3-6 months after Survey 1. Total of 256 (128 pairs) of observations were analyzed for this section.

In Figure 11A, we observe that the proportion of respondents who have kept a record of financial transactions (tracking spending) had significantly gone up after participation in the Citi-SMU Financial Literacy Program for Young Adults. The proportion of respondents who

RESEARCH FINDINGS

chose 4 and above (with 1 being not true and 5 being very true) increased from 33% in Survey 1 to nearly 61% in Survey 2 (Table 1: Panels A and B). We also observe that, on count of savings (earning more than spending), proportion of respondents who have increased savings owing partly to the program has gone up from 54% to 67%, an increase of 13%.

On further investigation in Table 1 Panel A, we can also observe that 22% of the respondents in Survey 1 had both tracked spending and managed to save money (spend less than they earn; see highlighted cells). This in contrast in Table 1 Panel B, shows as much as 51% of the individuals three to six months after the program tracked spending and saved money. So incrementally, for 18 and older respondents, as much as 29% (30% overall) have managed to increase their savings and use simple tools like tracking financial transactions after the Citi-SMU Financial Literacy Program for Young Adults. In addition, given they are tracking spending, at the point of the participation in the program the beneficiaries had a 70% probability of saving. Three to six months after the program, given they were tracking spending, the probability of saving increased to 84%, hence an increase of 14%.

Furthermore, in Figure 12, 44% of respondents in Survey 2 strongly felt (4 and above on a scale of 1 to 5) that they had started a regular savings plan compared to 35% of the ones who responded in Survey 1 before entering the Citi-SMU Financial Literacy Program for Young Adults – an increase of about 10%. Finally, in Figure 13A, we also inferred that 32% of the respondents who participated in Survey 2 were confident (4 or above on a scale of 1 to 5) that they were now investing prudently compared to 16% the respondents in Survey 1, a difference of 16%. This is indeed ostensibly a higher level skillset and relatively more challenging to deliver in a diverse and heterogeneous environment and a classroom. We also report from Table 13B, about 8% more Survey 1 respondents have an adequate insurance coverage than Survey 2.

Although the results from the sample of students who appeared in both Surveys 1 and 2 are encouraging, the biggest challenge in this analysis is that the sample size is only moderately big (around 128 individuals). The program research team is actively pursuing ways to increase the sample size of the online survey 2 for 2019 making it more streamlined and relooking at gamification and incentives.

Benchmarking Propensity to Acquire Financial Knowledge and Behavior

We explored the medium term (3 to 6 months currently) impact of the Citi-SMU Financial Literacy Program for Young Adults on participants by evaluating the change in knowledge and behavior that we can gather from observations and perceptions based questions. In the overall sample included more than 1177 students who answered Survey 1 throughout the course of 2018, including 128 students who completed Survey 2 in 2018

RESEARCH FINDINGS

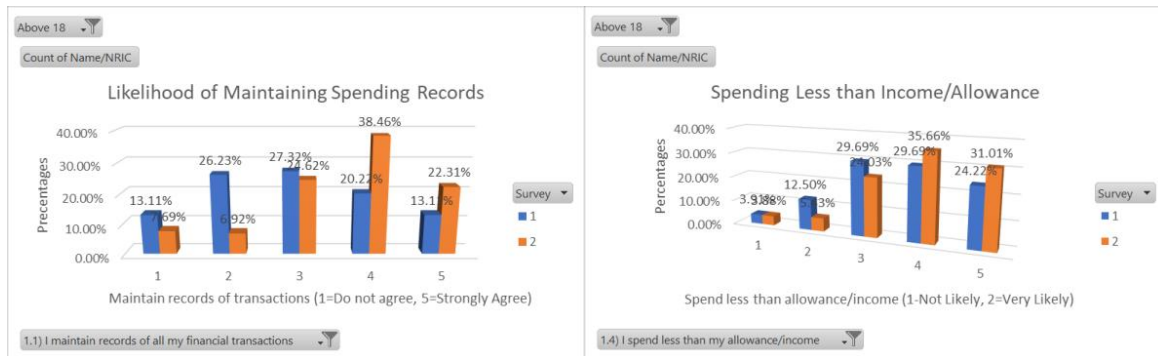


Figure 11A and 11B: Effect of Citi-SMU Financial Literacy Program for Young Adults on tracking spending

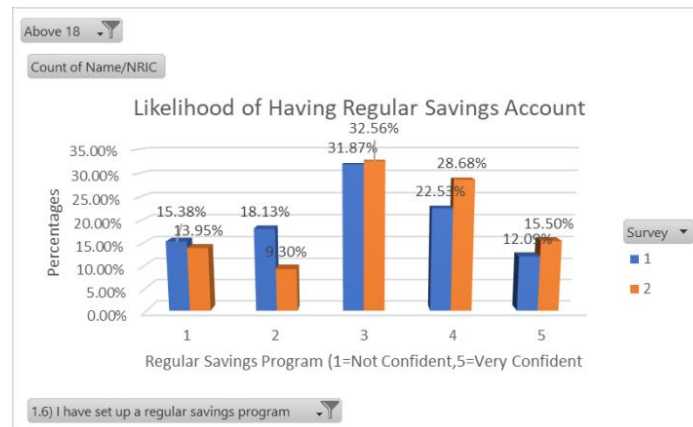


Figure 12: Effect of Citi-SMU Financial Literacy Program for Young Adults on participation in Regular Savings plan

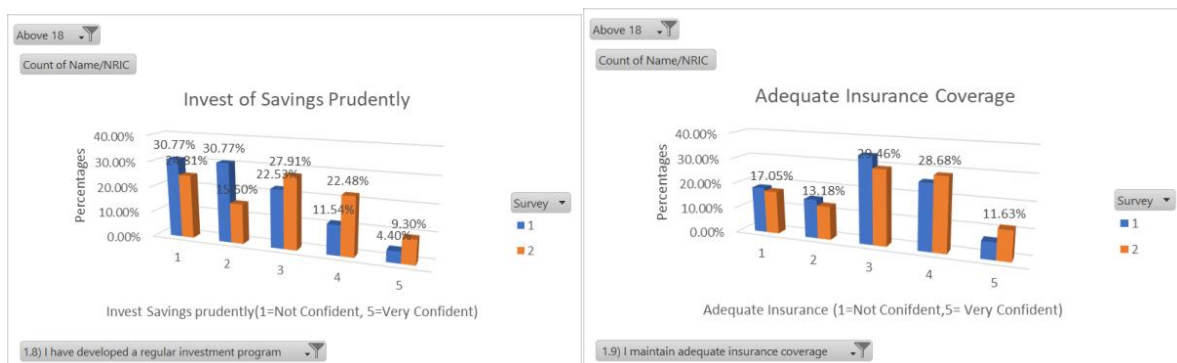


Figure 13A and 13B: Effect of Citi-SMU Financial Literacy Program for Young Adults on Prudent Investment and Savings

RESEARCH FINDINGS

Panel A	Track Spending					
	Not True	Somewhat not true	Neutral	Somewhat true	Very True	Grand Total
Spend less than earn						
Not True	0%	2%	2%	1%	0%	4%
Somewhat not true	1%	5%	5%	1%	2%	13%
Neutral	6%	11%	6%	4%	2%	30%
Somewhat true	7%	5%	7%	5%	5%	30%
Very True	2%	2%	9%	5%	7%	24%
Grand Total	16%	24%	28%	16%	16%	100%

Panel B	Track spending					
	Not True	Somewhat not true	Neutral	Somewhat true	Very True	Grand Total
Spend less than earn						
Not True	2%	0%	2%	1%	0%	4%
Somewhat not true	0%	0%	3%	2%	0%	5%
Neutral	2%	5%	9%	5%	2%	24%
Somewhat true	1%	1%	7%	19%	8%	36%
Very True	2%	1%	4%	11%	13%	31%
Grand Total	7%	7%	25%	39%	22%	100%

Table 1: Keeping spending records and Savings for (A) Survey 1, (B) Survey 2

Figure 14 depicts students who took both the surveys throughout the year. It was interesting to note that we found a higher proportion of females (around 53%) compared to males (around 47%). We also observed the following age groups of the participants:

- 30% were 18 year olds;
- 22% were 19 year olds;
- 16% were 20 year olds; and
- 10% were 21 year olds
- 22% were 22 year or more

As highlighted in Figure 15, as a benchmark in Survey 1, we find that there is an interesting comparison between the number of years of experience of the respondents and their quest for acquiring financial knowledge. While almost two thirds or 66% of the respondents want more financial knowledge, the level of interest peaks for respondents (almost 24%) with 2 years of experience and gradually go down with higher years of experience. However, contrary to conventional wisdom, years of experience do not seem to make any difference in the confidence in ability to manage money (Figure 16).

RESEARCH FINDINGS

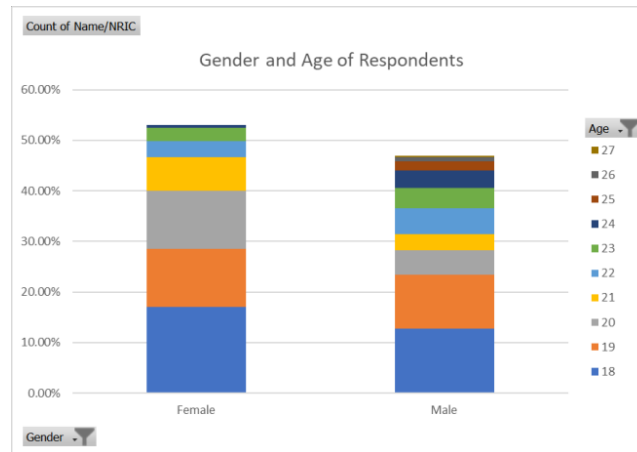


Figure 14: Age and gender distribution of respondents

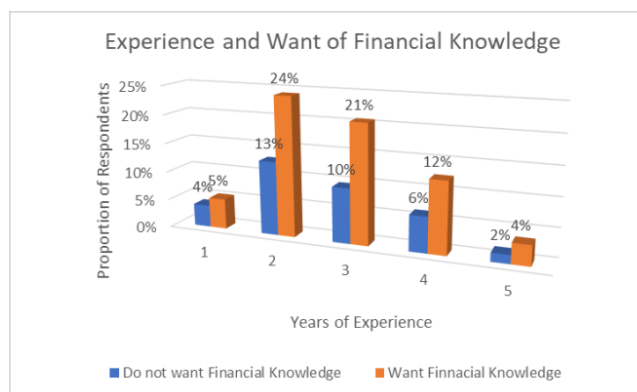


Figure 15: Years of Experience and Quest for Financial Knowledge

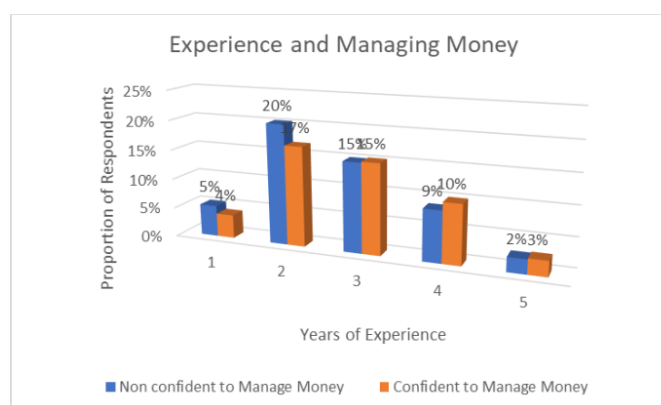


Figure 16: Years of Experience and Confidence in Managing Money

RESEARCH FINDINGS

We were particularly keen to explore if such behavior like tracking financial transactions could be associated with changes of outcome like having and contributing to a regular savings account. Table 2 reflects the results from responses in Survey 1 (S1). We found about 14% of the respondents in Survey 1 had kept track of financial transactions and also had a regular savings account. We can translate it to say that given that a respondent followed basic tools like keeping track of financial transactions, as much as 48% had a regular savings account (see highlighted cells in Table 2).

We also observed that for those with a regular savings account in Survey 1, as many as 57% were confident they were investing prudently (Table 3 highlighted cells). Not just investing prudently, having a regular savings account also seem to play a role in association with insurance coverage. From Table 3, conditional on having a savings account, 52% respondents feel they have adequate insurance coverage (Table 4 highlighted cells). Results in Tables 3 and 4, clearly indicate that having regular savings account might be the first step for financial literacy and financial inclusion.

Our analysis of the data went beyond just socio-demographic and considered keenness to acquire knowledge about personal financial matters and general levels of financial literacy (Table 5). Table 5 shows that more than 66% of the respondents were either somewhat or very interested in acquiring financial knowledge. Not surprisingly, we also found that around 24% of the population were both at least somewhat interested in getting more financial knowledge but also agreed that having a regular savings account was important. This coincidence of the need for acquiring financial knowledge and having regular savings accounts demonstrates that the group of students who are selecting to be in the Citi-SMU Financial Literacy Program for Young Adults are indeed motivated and brings in the right attitude for the learning environment provided by our student trainers. Conditional on having a regular savings account, from Table 5 we can observe the probability that a respondent is keen to acquire knowledge is a staggering 81%. On the flipside, we can also observe if we condition on those respondents who want to acquire more financial knowledge, around 36% have a regular savings account.

RESEARCH FINDINGS

	Have Regular Savings		
Track Spending	No	Yes	Grand Total
Not True	9%	1%	11%
Somewhat Not True	17%	4%	22%
Neutral	29%	9%	38%
Somewhat True	12%	8%	20%
Very True	4%	6%	10%
Grand Total	71%	29%	100%

Table 2: Tracking Spending and Regular Savings Account (Survey 1)

	Invest Prudently		
Have Regular Savings	No	Yes	Grand Total
Not True	13%	0%	14%
Somewhat Not True	21%	1%	22%
Neutral	32%	4%	36%
Somewhat True	10%	10%	20%
Very True	3%	6%	9%
Grand Total	78%	22%	100%

Table 3: Having Savings Account and Investing Prudently (Survey 1)

	Adequate Insurance		
Have Regular Savings	No	Yes	Grand Total
Not True	13%	0%	14%
Somewhat Not True	20%	2%	22%
Neutral	31%	5%	36%
Somewhat True	10%	9%	20%
Very True	3%	6%	9%
Grand Total	78%	22%	100%

Table 4: Having Savings Account and Investing Prudently (Survey 1)

RESEARCH FINDINGS

	Gain Financial Knowledge					
Have Regular Savings	Very Uninterested	Somewhat Uninterested	Neutral	Somewhat Interested	Very Interested	Grand Total
Not true	1%	1%	4%	4%	4%	14%
Somewhat not true	0%	2%	7%	7%	5%	22%
Neutral	1%	1%	11%	13%	8%	35%
Somewhat true	0%	0%	4%	9%	7%	20%
Very true	0%	0%	1%	2%	6%	9%
Grand Total	2%	5%	28%	36%	30%	100%

Table 5: Interest in gaining financial knowledge and having regular savings account (Survey 1)

CONCLUSION

Conclusion

“My parents ask me - how come you have so much knowledge on insurance? Because I joined the TTT program! It does benefit us in the future, you just don’t know when. I’m really happy that whatever I learn I can really teach my parents. And they’re really proud of me “ – Student, ITE College, Focus Group Discussion, Nov 2018⁶

Citi-SMU Financial Literacy Program for Young Adults has embarked on the next stage of its development as the pioneering and premier structural financial education program for Tertiary students in Singapore. As the knowledge partner and the organizers of the premier flagship inaugural MyMoney@Campus in the Polys in partnership with the Citi-SMU Financial Literacy Program for Young Adults, MAS MoneySense and Association of Banks of Singapore (ABS), Singapore Management University aspires and being recognized to be the leading educational institution providing standardized, scalable and sustainable platform for disseminating Financial Literacy to the youth in Singapore.

In this report we provide the ideal used case of a Public-Private-Regulator Partnership with a synergistic collaboration of a world class educational institution, a premier financial institution and forward thinking policymakers to achieve Financial Inclusion of the underserved young population from middle to low income families. The unique train-the-trainer peer-to-peer program pioneered by the Citi-SMU Financial Literacy Program is now being adopted by different organizations hoping to replicate the success achieved as highlighted in this report.

In this research finding report, SMU researchers found convincing evidence on the effectiveness of the program on variety of fronts despite having multiple platforms and formats of delivery including in class sessions, games, seminars or sharing sessions to name a few. In fact, the uniqueness of this program has been it has achieved not just the stated objectives but also the unstated ones as we enumerate below.

First, 60% of the participants in the Citi-SMU Financial Literacy Program for Young Adults expended their basic understanding of personal finance and increased their financial literacy. We further verified that over 70% of the participants have increased or kept their understanding on long term understanding of financial concepts measured by questionnaires from the Global Financial Literacy Survey.

⁶ Citi-SMU Financial Literacy Program for Young Adults, Stakeholders Focus Group, Management Summary, 2018

CONCLUSION

Second, the non-standard interactive game based peer-to-peer pedagogical model instilled a level of confidence in the beneficiaries to apply these newly acquired skills to make better financial decisions. The report finds 29% or more of the respondents able to use basic financial management tools like keeping record of financial transactions and increase their savings (spending less than they earned). As many as 44% respondents had a regular savings account three to six months after the program, which translates to around 10% more than before the program.

Third, three to six months after participating in the Citi-SMU Financial Literacy Program for Young Adults, 32% felt they were investing their savings prudently compared to 16% at the time of the program. After the program, 8% more respondents felt they had adequate insurance coverage compared to before. We were pleasantly surprised to see such behavior change among participants particularly given they acquired higher level skillsets in getting more confident in managing money and following prudent investment strategies with their savings.

Finally, the program truly exceeded expectations not just to nudge the behavior of impressionable young men and women to secure their financial future but also for their families. This is succinctly captured although anecdotally by the comment of an ITE student participating in a Focus Group Discussion (FGD) captured in the beginning of this section.

The results and more on the positive spillover were underscored by the findings from a focus group discussion comprising the stakeholders and beneficiaries of the program. The FGD was carried out by a professional market survey company and their findings are aptly captured in the above reflection about the Citi-SMU Financial Literacy Program for Young Adults in 2018.

In summary, achievements of the Citi-SMU Financial Literacy Program for Young Adults cannot be understated in terms of reach (over 284 SMU and 228 affiliated student trainers, 30,000 beneficiaries) or effectiveness. However, we have to be cognizant of the new challenges in the globalized shared economy including financial health checks and more technology based gamification and delivery mechanisms in a deeper collaborative model.

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APPENDIX 1A (2018)

Appendix 1A (2018)

Implementation Highlights (as has been implemented in the past years):

- The Citi-SMU Financial Literacy Program for Young Adults student trainers conduct peer-to-peer training sessions at different times of the year at the three ITE colleges, five polytechnics and other institutions such as Babes Pregnancy Crisis Support, SOTA, Chinese Development Assistance Council (CDAC).
- During the training, the learners have to take pre and post quizzes (example of the Investment and Insurance quiz is given in Appendix 1B) to establish whether learning objectives have been met, one of the dual mandates of the Citi-SMU Financial Literacy Program for Young Adults.
- The second mandate is to evaluate long term learning outcomes and change of patterns of behavior among the learners 3-6 months after the training. To that effect, Survey 1 (either hard copy or online) is administered to the learners following the process described below.
- In 2018, questionnaire was streamlined for deploying in both synchronous and asynchronous environments and included general questions of Financial Literacy adopted from the S&P Global Financial Literacy Survey together with questions on financial planning for both older and younger individuals.
- In order to run these surveys and collect the data, we have gone through all SMU Institutional Review Board (IRB) to protect the subjects and fulfil PDPA requirements.
- The students who are 18 and above can voluntarily participate in the survey by signing the informed consent form.
- Survey 2 is also run in a similar way 3-6 months after they have gone through training program from Citi-SMU Financial Literacy Program for Young Adults.
- The data thus collected from Survey 1 and Survey 2 will be handled confidentially by the team of researchers at SMU according to the process outlined in SMU-IRB application and under Singapore laws.

Brief process of running Survey 1 and Survey 2:

- There are two ways we conducted the surveys to evaluate the benchmark (survey 1) and hence to measure the changes of patterns of behavior of adult participants (18 and above, last birthday) three-six months after participation in the Citi-SMU Financial Literacy program for young adults and engagements.
- First method is offline deployed during the Citi-SMU Financial Literacy Program for Young Adults peer-to-peer coaching from student trainer. The administrator of the survey will instruct the participants of the objective of the survey and that it is voluntary to participate.
- Students will be asked if they have attained the age of 18 and above. They will be handed out the surveys with participant information and informed consent forms. We will only collect them if they have given informed consent.
- Second method of deployment is online. Students who are 18 and above and have participated in the training program and voluntarily provide their contact information will be send an email with the online link to the surveys. The online surveys can only be

APPENDIX 1 A (2018)

filled if the students are (a) 18 and above years of age, (b) reads and accepts the informed consent form to provide the online responses.

- The data from both Survey 1 and Survey 2 for the 18 years and above students who have signed the informed consent form required by IRB and PDPA will be anonymized and stored securely and only used by researchers for the Citi-SMU Financial Literacy Program for Young Adults under Principal Investigator Professor Aurobindo Ghosh. This data will be protected to the extent of the law.
- The analysis of the data for our target group of 18 years and above will be performed by researchers at SMU as mandated by the Citi Foundation and Letter of Collaboration between SMU and ITE.
- Finally, for those students who are 18 years and above, when they complete Surveys 1 and 2, they will be eligible for a lucky draw. This will be drawn at SMU under terms and conditions specified and verified by SMU's office of legal affairs.

APPENDIX 1B

Appendix 1B

QUIZ – Investment and Insurance

Questions	Pre-Workshop	Post-Workshop
1. Which of the following types of investment has the highest risk? A. Speculative stocks B. Blue chip stocks C. Saving accounts D. Money market accounts		
2. Which account usually pays the most interest? A. Fixed or time deposit B. Saving deposit C. Checking or current account D. Don't know		
3. You bought stock A when its price was at \$5 per share. After 1 month, its price increased to \$5.50 per share. What is your return in percentage? A. 10% B. 7% C. 12% D. 9%		
4. How do insurance policies help to manage your risks? A. Assume risks and share risks B. Share risks and avoid risks C. Assume risks and avoid risks D. Share risks, avoid risks, transfer risks		
5. Which type of insurance helps to manage mortality risk: A. Long term care B. Life annuity C. Life insurance D. Critical illness insurance		

APPENDIX 1B

<p>6. Which type of insurance DOES NOT include saving planning or investment?</p> <p>A. Whole life insurance B. Universal life insurance C. Term life insurance D. Do not know</p>		
<p>7. What is not a risk we face that needs insurance?</p> <p>A. Poor health over time B. Living too long C. Pre-mature Death D. All of the above are risks</p>		
<p>8. What are Shares/Stock in the stock market?</p> <p>A. Papers that people buy in the hope of making money B. Investment in Companies thinking that they have the potential to grow C. Computer screen money that moves every day D. Don't know</p>		
<p>9. What are bonds?</p> <p>A. Borrow money from government at a subsidized rate B. Risk-Free funding from the companies where we pay interest C. Lending money to Government or Companies and earning interest on the money lent. D. Don't know</p>		
<p>10. What should I consider when choosing which bank to open my saving accounts with?</p> <p>A. Accessibility B. Interest Rate C. Minimum balance required D. All of the above</p>		

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