ĐẠI HỌC QUỐC GIA HÀ NỘI
TRƯỜNG ĐẠI HỌC KINH TẾ
VNU UNIVERSITY OF ECONOMICS AND BUSINESS

IMPACTS OF FINTECH DEVELOPMENT ON FINANCIAL INCLUSION IN ASIA AND FINANCIAL EDUCATION EXPERIENCE IN VIETNAM

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Agenda

- **The role of fintech development on financial inclusion in Asian countries**
  - Rational for the Research
  - Literature Review
  - Data and Methodology
  - Findings and Discussion
  - Policy Implications
- **Financial Education Experience in Vietnam**

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RATIONAL FOR THE RESEARCH

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G20 New High Level Principles on Digital Financial Inclusion (HLPs)

- **PRINCIPLE 1:**
  PROMOTE A DIGITAL APPROACH TO FINANCIAL INCLUSION
- **PRINCIPLE 2:**
  BALANCE INNOVATION AND RISK TO ACHIEVE DIGITAL FINANCIAL INCLUSION
- **PRINCIPLE 3:**
  PROVIDE AN ENABLING AND PROPORTIONATE LEGAL AND REGULATORY FRAMEWORK FOR DIGITAL FINANCIAL INCLUSION
- **PRINCIPLE 4:**
  EXPAND THE DIGITAL FINANCIAL SERVICES INFRASTRUCTURE ECOSYSTEM
- **PRINCIPLE 5:**
  ESTABLISH RESPONSIBLE DIGITAL FINANCIAL PRACTICES TO PROTECT CONSUMERS
- **PRINCIPLE 6:**
  STRENGTHEN DIGITAL AND FINANCIAL LITERACY AND AWARENESS
- **PRINCIPLE 7:**
  FACILITATE CUSTOMER IDENTIFICATION FOR DIGITAL FINANCIAL SERVICES
- **PRINCIPLE 8:**
  TRACK DIGITAL FINANCIAL INCLUSION PROGRESS

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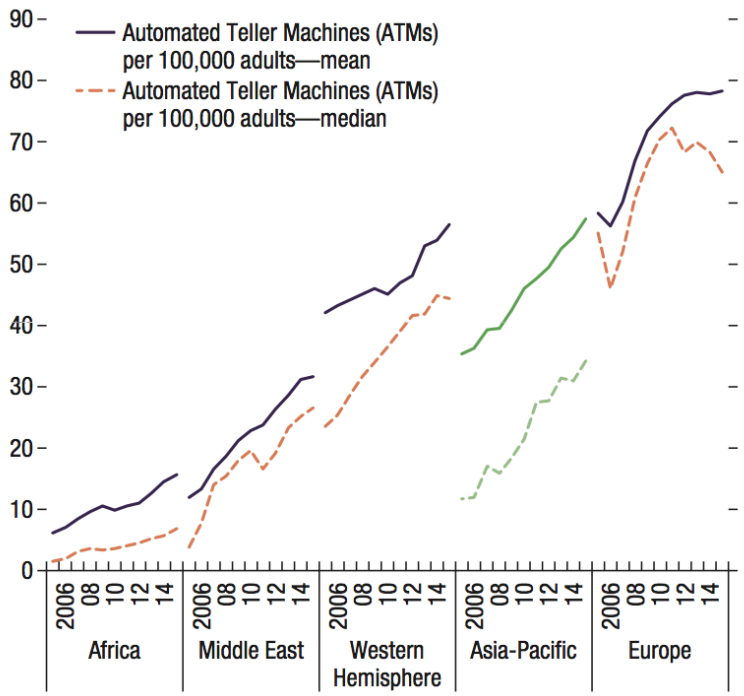
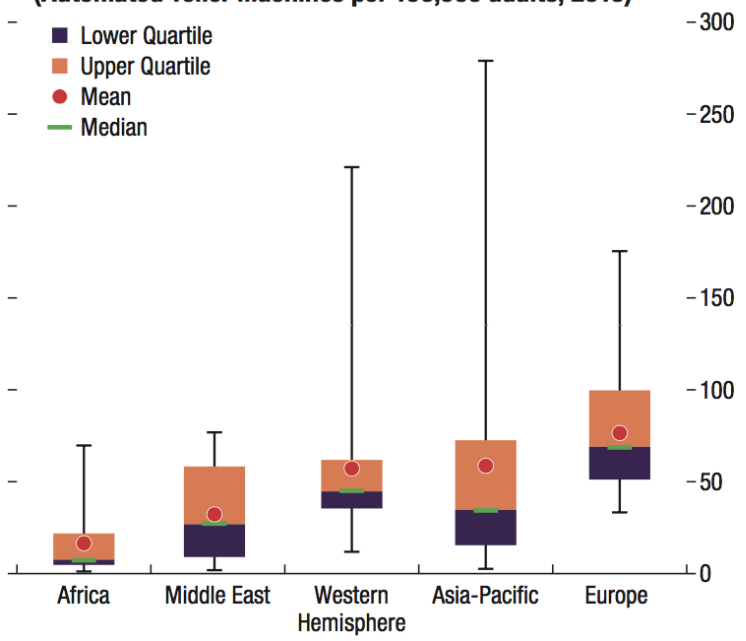
Financial Inclusion in Asia

- Significant progress in financial inclusion broadly in line with other regions, but it also has the widest disparity

1. Rapid Growth of Financial Inclusion



2. Distribution of Financial Inclusion Outcomes (Automated Teller Machines per 100,000 adults, 2015)



Source: IMF Financial Access Survey.

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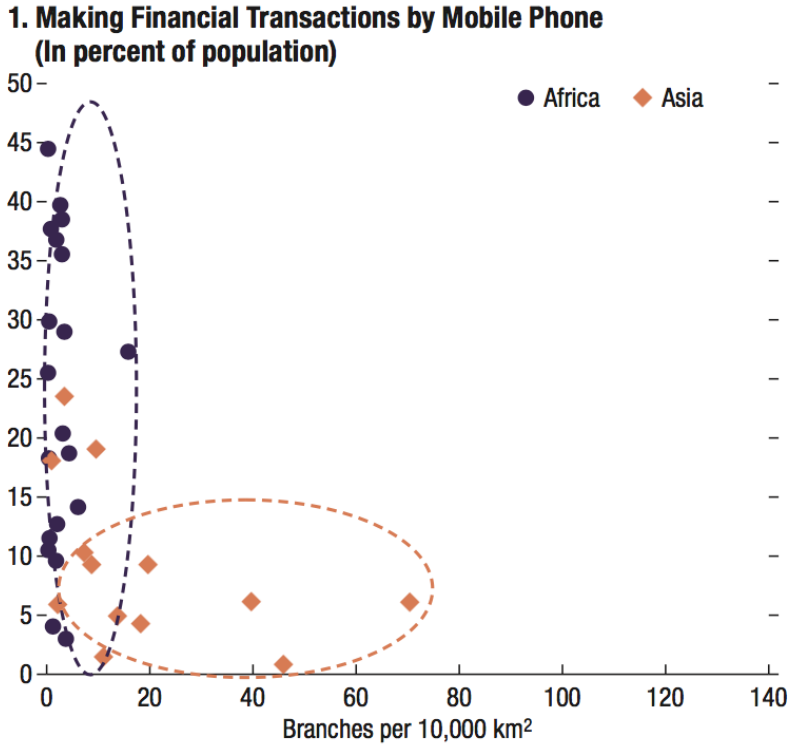
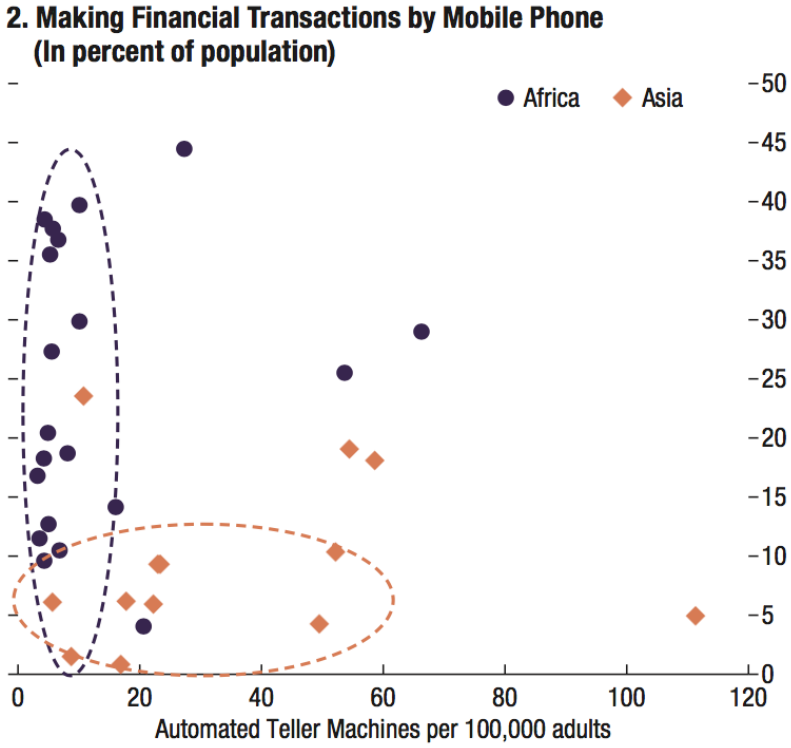
Financial Inclusion in Asia (2)

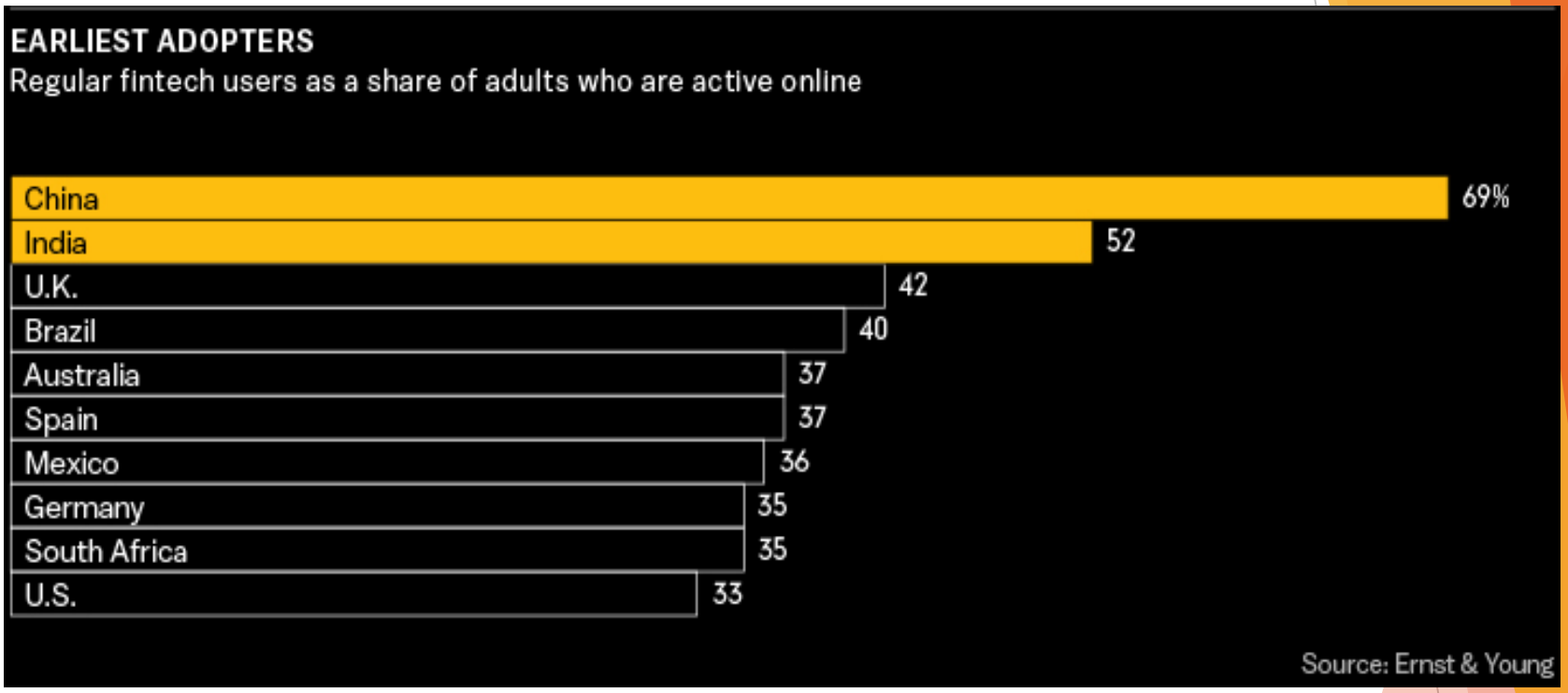
- significant strides on the use of technology to support financial inclusion.





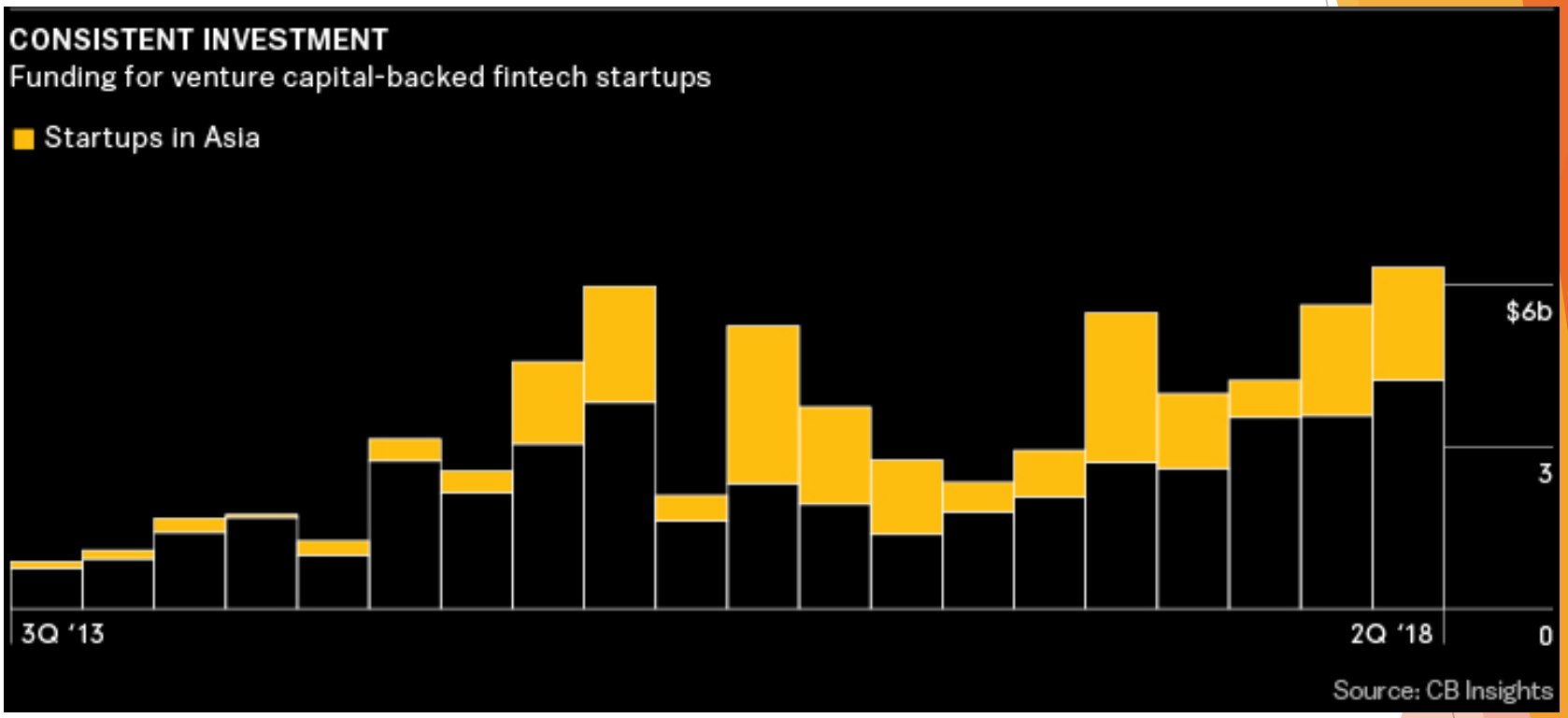
Sources: IMF Financial Access Survey; and World Bank Global Findex.

Asia is leading the fintech revolution



According to survey of Ernst&Young (2017), more than a half of online consumers said they regularly use fintech services

Asia is leading the fintech revolution (2)



Funding for fintech startups increases in 2018 (both private equity and strategic investors). In the first half of the year, almost $12 billion flowed into venture capital-backed fintechs, and more than a third of it went to companies based in Asia (CB Insights, 2019)

Financial Inclusion and Fintech in Vietnam

Source: MicroSave, 2018

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Facts and Fingures

- The new 2016 Principles to drive financial inclusion using digital technologies.
- Financial inclusion improvement in Asian Pacific countries, with the widest disparity and lag behind other countries in mobile banking
- Digital technologies have spread rapidly in much of the world, and Asia is leading the fintech innovation.
- Vietnam possesses a high percentage of internet users and mobile subscribers along with low countrywide penetration of banking, leading to technology-driven and innovative solutions to financial inclusion.

How does fintech development impact the financial inclusion in Asia?

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LITERATURE REVIEW

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Fintech and financial inclusion

- Michelle (2016)**:** factors impacting financial inclusion are financial innovations, access to financial services, intermediary efficiency and financial literacy.
- Mobile finance and related equipment can improve the main accessibility for this audience of unbanked (World Bank, 2016).
- Kashiwagi (2016): information technologies like mobile phones can quickly and widely provide financial services at low cost.
- Ozili's (2018): Digital finance through Fintech has a positive impact on financial dissemination in emerging and advanced economies.
- Anju Patwardhan et al(2018): Fintech is one of players in financial revolution, which are taking emergence of “for-profit, mission-driven” to drive through greater financial inclusion.
- Durai and Stella (2019): Digital finance which has substantial effects to financial inclusion, includes internet banking, mobile banking, wallets, credit card and debit card.
- Gayatri, Fernandez-Vidal, Faz, and Barreto (2019) indentified 5 types of intech innovations that on that offer potential for financial inclusion and challenges inhibit their ability to impact financial inclusion.

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DATA AND METHODOLOGY

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Financial Inclusion Variables

Dependent variables

- Number of bank accounts per 1000 adults ($ACC_{i,t}$)
- The number of ATMs per 100,000 adults ($ATM_{i,t}$) (Sarma, 2008; Sarma, 2012; Sethy, 2016)
- Total private domestic credit over GDP (%) ($CRED_{i,t}$) (Okoye et al., 2017).

The data used includes 40 countries in Asia in period from 2010 to 2017 from Global Financial Development July 2018 (World Bank)

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Fintech Development Variables

Independent variables includes Fintech infrastructure and Fintech ecosystem (ING, 2016)

1. Fintech infrastructure

- Mobile subscription density: subscriptions per 100 inhabitants ($\boldsymbol{MOBI_{i,t}}$)
- Electricity coverage: share of population connected to the electricity grid ($\boldsymbol{ELEC_{i,t}}$)
- Percentage of the population in the internet network ($\boldsymbol{INT_{i,t}}$).

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Fintech Development Variables(2)

Independent variables includes Fintech infrastructure and Fintech ecosystem (ING, 2016)

2. Fintech ecosystem

- The Start-up attractiveness represented by the time of starting a business is a representative of a nation's Fintech investment ecosystem ($\boldsymbol{STA_{i,t}}$).
- Innovation index reflect the comprehensive development for a Fintech ecosystem $(\boldsymbol{INNO_{i,t}})$.

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Sumary of variables and hypotheses

No.	Factor	Variables	Hypothetical impact (ACC)	Hypothetical impact (ATM)	Hypothetical impact (CRED)
1	The number of bank accounts per 1000 adults	$ACC_{i,t}$			
2	The number of ATMs per 100,000 adults	$ATM_{i,t}$			
3	Total private domestic credit over GDP	$CRED_{i,t}$			
4	Mobile subscriptions density	$MOBI_{i,t}$	Positive	Positive	Positive
5	Internet density	$INT_{i,t}$	Positive	Positive	Positive
6	Electricity coverage	$ELEC_{i,t}$	Positive	Positive	Positive
7	Startup attractiveness	$STA_{i,t}$	Negative	Negative	Negative
8	Innovation	$INNO_{i,t}$	Negative	Negative	Positive

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Descriptive Data

Variables	Number of observations	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Country					
Year	320	2013.5	2.294876	2010	2017
Dependent Variables					
ACC	200	1053.63	1235.626	10.2454	8114.603
ATM	320	50.9127	50.56411	.0913772	288.6319
CRED	312	65.8101	48.48711	4.645404	253.2622
Independent Variables					
MOBI	320	111.1021	35.70623	1.184307	214.7349
INT	320	45.66378	26.62387	.25	99.4
ELEC	320	92.84814	13.70016	31.1	100
STA	320	25.84716	28.46019	2	187
INNO	320	35.65812	10.52678	4.6	66.42857

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Regression Models

$$ACC_{i,t} = \alpha ACC_{i,t-1} + \beta_1 MOBI_{i,t} + \beta_2 INT_{i,t} + \beta_3 ELEC_{i,t} + \beta_4 STA_{i,t} + \beta_5 INNO_{i,t} + e_{i,t} \quad (1)$$

$$ATM_{i,t} = \alpha ATM_{i,t-1} + \beta_1 MOBI_{i,t} + \beta_2 INT_{i,t} + \beta_3 ELEC_{i,t} + \beta_4 STA_{i,t} + \beta_5 INNO_{i,t} + e_{i,t} \quad (2)$$

$$CRED_{i,t} = \alpha CRED_{i,t-1} + \beta_1 MOBI_{i,t} + \beta_2 INT_{i,t} + \beta_3 ELEC_{i,t} + \beta_4 STA_{i,t} + \beta_5 INNO_{i,t} + e_{i,t} \quad (3)$$

(i represents each country, t represents the year of observation.)

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ACC variable Regession Model 1

	Static model			Dynamic model
	OLS	REM	FEM	GMM
$ACC_{i,t-1}$				-.281488
$MOBI_{i,t}$	-2.477135	-2.477135	-5.295503	-15.8485
$INT_{i,t}$	22.76353***	22.76353***	31.01652***	64.77471***
$ELEC_{i,t}$	8.321913	8.321913	33.39664	-45.77882
$STA_{i,t}$	-1.786465	-1.786465	-.3245158	-11.17941
$INNO_{i,t}$	-15.29103	-15.29103	-4.015273	25.23137
LM		62.06***		
Wald ($\chi 2$)				
Hausman ($\chi 2$)		6.89***		
Sargan				3.09***
AR (1)				-0.77***
AR (2)				-0.84***
				Notes: Confidence Interval * 1%, ** 5%, * 10%**

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ATM variable Regession Model 2

	Static model			Dynamic model
	OLS	REM	FEM	GMM
$ATM_{i,t-1}$				.7509137
$MOBI_{i,t}$	.0904459**	.0904459**	.0889689**	.0369453
$INT_{i,t}$	.5422845***	.5422845***	.508058***	.0294385
$ELEC_{i,t}$	.1459694	.1459694	.1031551	.3291749
$STA_{i,t}$	.0969495**	.0969495**	.0976765**	.0911645
$INNO_{i,t}$	.3650869***	.3650869***	.2437693*	-.5530849**
LM		933.17***		
Wald ($\chi 2$)				
Hausman ($\chi 2$)		10.30***		
Sargan				2.28***
AR(1)				-2.87***
AR (2)				0.36***
Notes: Confidence Interval * 1%, ** 5%, * 10%**				

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CRED variable Regession Model 3

	Static model			Dynamic model
	OLS	REM	FEM	GMM
$CRED_{i,t-1}$				.8008333
$MOBI_{i,t}$	.0336384	.0336384	.0321176	.1682729
$INT_{i,t}$	.5336962***	.5336962***	.5102129***	-.5495797
$ELEC_{i,t}$	.200124	.200124	.1858849	.3516856
$STA_{i,t}$	.009168	.009168	.0104296	-.0386629
$INNO_{i,t}$	.2648008*	.2648008**	.1543461	2.87411***
LM				
Wald ($\chi 2$)			22314.35***	
Hausman ($\chi 2$)			12.48***	
Sargan				10.19***
AR(1)				-0.70***
AR (2)				0.58***
Notes: Confidence Interval * 1%, ** 5%, * 10%**				

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KEY FINDINGS

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Findings

- Internet has a substantial positive relationship with the number of bank account per 1000 adults (99%) – same with Agyekum, 2016.
- Innovation index or comprehensive fintech development has a significant impact on the number of ATMs per 100,000 adults (95%)
- Innovation index has a significant impact on the total % of private domestic credit over GDP (99%)

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POLICY IMPLICATIONS

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Policy Implications

- **Internet and innovation** are important factors to promote financial inclusion
- Expand digital financial infrastructure: modernize financial system, enhance internet penetration and quality.
- Develop an ecosystem for the development of fintech industry
- Promote a digital approach and an effective co-ordination among stakeholders.
- Strengthen digital and financial literacy: raise aweness and train for new technology, financial education.

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FINANCIAL EDUCATION EXPERIENCE IN VIETNAM


ALUMNI RECEPTION
Celebrating 20 Years of U.S. - Vietnam Relations
January 30, 2015


Hợp tác Đức
SAVINGS BANKS REGIONAL PROJECT
Financial Education made easy
SBFIC BUSINESS GAMES
Hanoi, 21- 22 February 2019
Finanzgruppe
Sparkassenstiftung für internationale Kooperation

Financial education for children

Training courses coordinated with Edubelife at UEB

Training for children “How to use money” in Everest Primanry and secondary schools

Training for children courses coordinated with ILA English Center


EDUBELIFE - VIETNAM FINANCIAL LITERACY NETWORK
L 2521996
NĂM TRĂM NGHÌN ĐỒNG
MƯỜI NGHÌN ĐỒNG
HAI MƯƠI NGHÌN ĐỒNG
NĂM MƯƠI NGHÌN ĐỒNG
MỘT TRĂM NGHÌN ĐỒNG


Sự tích của tiền


Mạng lưới tài chính cá nhân Việt Nam
CHỦ ĐỀ: KỸ NĂNG TÀI CHÍNH
(CHẠM VÀO TƯƠNG LAI - TOUCH THE FUTURE)
CHƯƠNG TRÌNH ĐÀO TẠO TÀI CHÍNH CÁ NHÂN
DÀNH CHO HỌC SINH TỪ LỚP 10 ĐẾN LỚP 12
TRƯỜNG PTTH LƯƠNG VĂN TÚY
Giới thiệu
Lứa tuổi từ 16-18 tuổi là giai
Kỹ năng
Kiến thức Quản lý tài chính cá
nhân sẽ giúp các bạn có
Mục tiêu
Sau khóa học các em có khả
năng:


KHỎE ĐỂ HỌC TẬP TỐT
TRƯỜNG PHỔ THÔNG QUỐC TẾ NEWTON
NEWTON GRAMMAR SCHOOL
LỄ BẾ GIẢNG

Financial education workshops and training courses


NƯỚC CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM MUÔN NĂM
GẶP MẶT


ĐOÀN KẾT - DÂN CHỦ - KỶ CƯƠNG - ĐỔI MỚI, XÂY DỰNG ĐẢNG BỘ MẠNH TRONG SẠCH
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International Conferenc
GIÁO DỤC TÀI CHÍNH TRONG BỐI CẢNH ĐẨY MẠNH PHỔ CẬP TÀI C
ancial Education in the context of improving Financial I


Financial Capability Development


HỘI THẢO QUỐC TẾ
International Conference

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Game/Simulation for Financial Education

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Game/Simulation for Financial Education (1)

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Playing financial game at home

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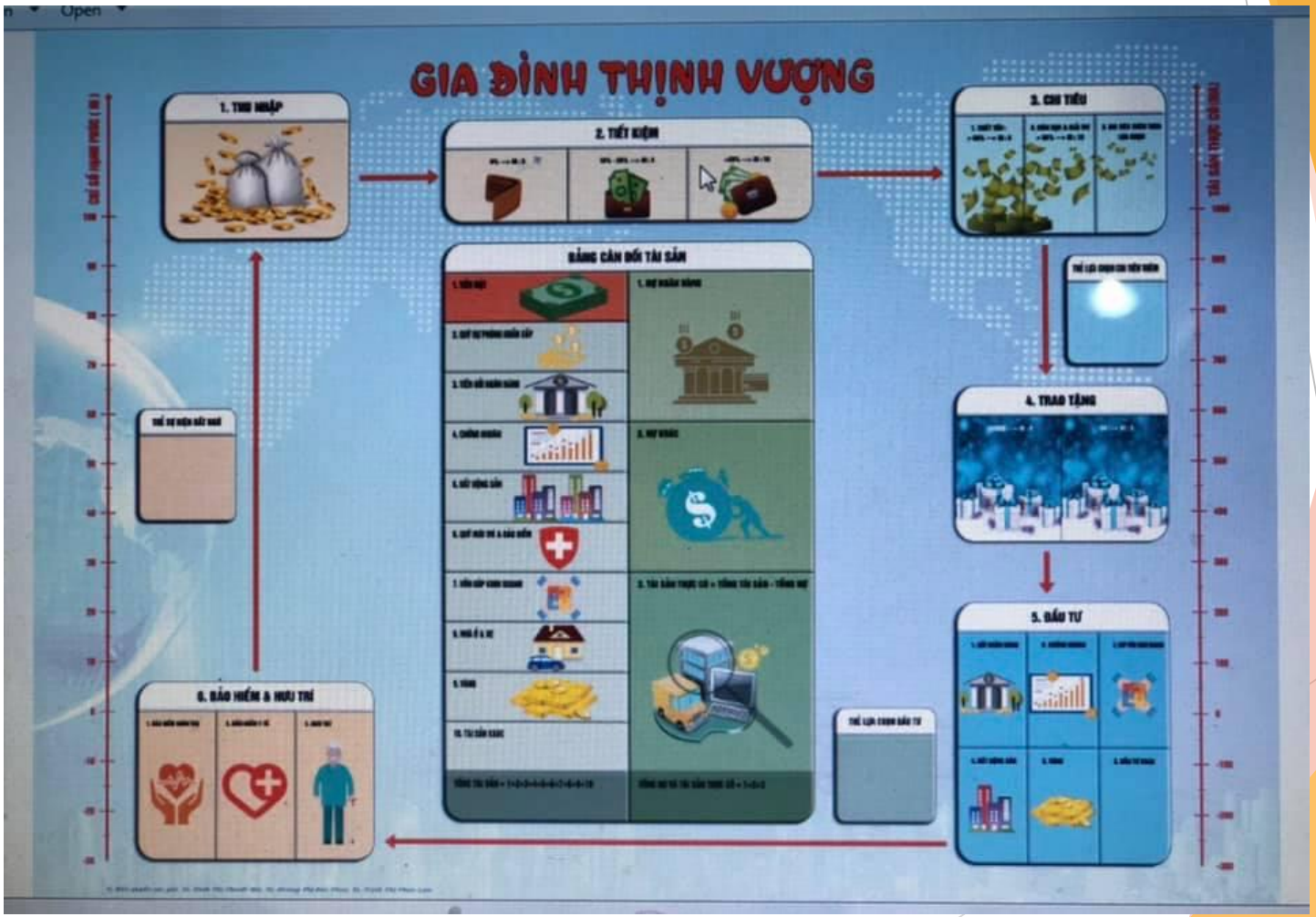
Game/Simulation for Financial Education (2)



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Money Lover – Expenses Tracker

MoneyLover

Writinng the lessons on the website and app and books for financial education of customers

https://my.moneylover.com/ong-thu-mot-ba-chi-hai/#doc-thu

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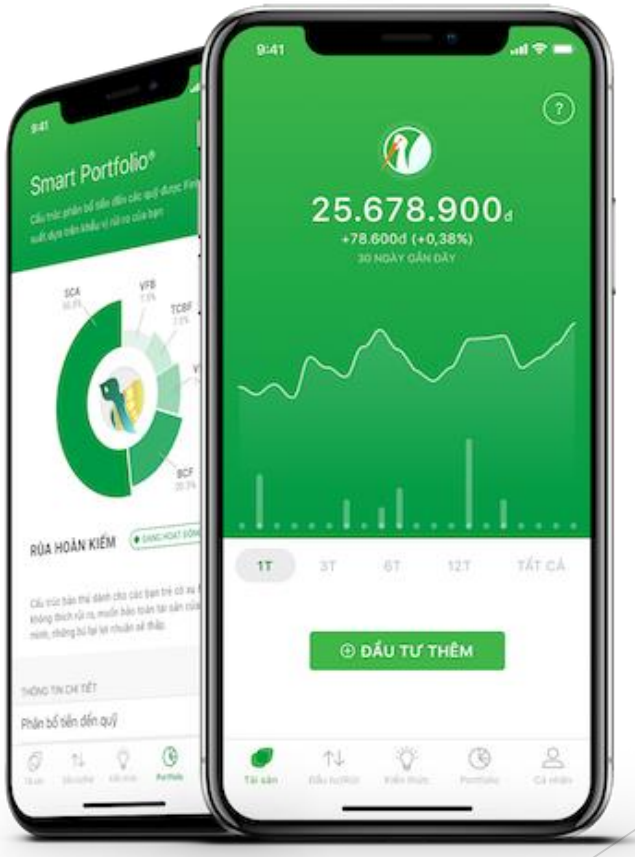
Finhay – Investing from $2

FINHAY



Writinng the lessons on the website and app for financial education of customers

https://blog.finhay.com.vn/2019/07/19/de-quan-li-tai-chinh-thanh-cong-can-phai-biet-thue-thu-nhap-ca-nhan-la-gi/

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Future Research

Impact evaluation of financial education and fintech adoption in financial literacy level.

- **Step 1: Measuring financial literacy of different groups before the training programs.**
- **Step 2: Having some expiremental groups.**
  - **Group 1: No training**
  - **Group 2: Regular training**
  - **Group 3: Training with introduction to fintech app.**
- **Step 3: Measuring financial literacy of different groups after the training and after 6 months.**

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THANKS FOR YOUR ATTENTION!

Q&A

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