E-commerce Adoption in ASEAN: Testing on Individual and Country-level Drivers

Abu H. AYOB, Azuddin YAKOB, Roslan JA'FAR

National University of Malaysia

Point of Departure

- E-commerce is a process of selling and buying goods through computer networks by method specifically designed for placing and receiving orders (OECD 2011)

- Although it is conceivably beneficial for all, the prevalence of e-commerce adoption is differed greatly across countries (Martinsons 2008)

- This study empirically examines the e-commerce adoption model of ASEAN, developed by studies in three prominent institutions in Singapore; served as a core input for ASEAN Economic Community 2025

- E-commerce drivers in ASEAN: supply, demand, infrastructure and regulation. We advance and test on socio-cultural value of trust

- The conceptual approach: Institutional theory

Model of the Study
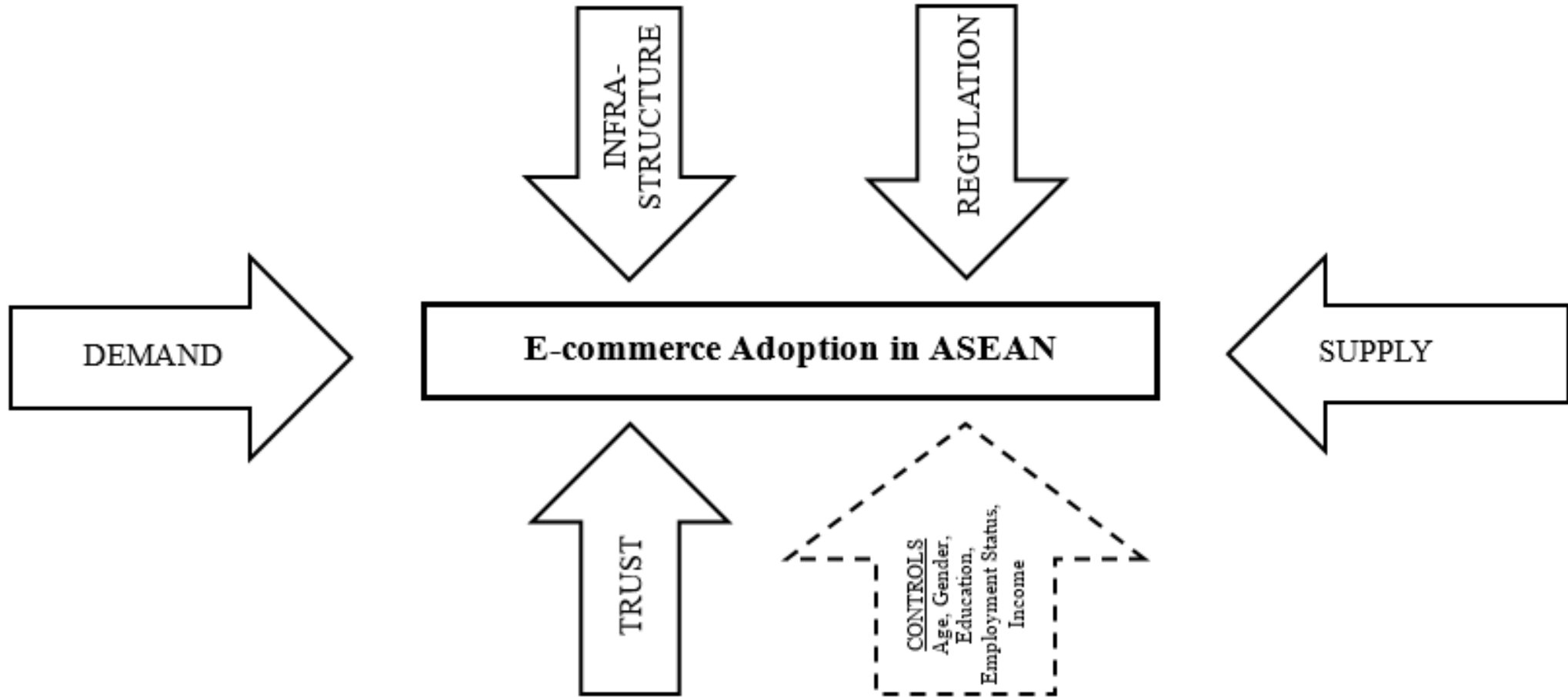
Hypotheses

H1: Stronger demand

H2: Stronger supply

H3: Stronger infrastructure

H4: Stronger regulation

H5: Stronger trust

is related with a higher propensity of e-commerce adoption among citizens in ASEAN

Data

Variable	Definition	Source
Dependent variable		
E-commerce adoption	Dummy, equal to 1 if respondents have personally bought things online using the internet in the past 12 months	FINDEX
Explanatory variables		
Demand	Dummy, equal to 1 if respondents have an account at a bank or another type of financial institution, or mobile money account	FINDEX
Supply (log)	Number of secure servers per million people	World Bank
Infrastructure	Percentage of internet users in the country	ITU
Regulation	Global Cybersecurity Index score, range 0 to 1	ITU
Trust	Percentage of respondents that respond "yes" to "… most people can be trusted…"	WVS
Controls		
Age	Age of respondents	FINDEX
Gender	Dummy, equal to 1 if respondent is male	FINDEX
Education	Range 1 to 3: primary, secondary and tertiary	FINDEX
Employment Status	Dummy, equal to 1 if respondent is currently employed	FINDEX
Income level	Range 1 to 5: poorest to richest	FINDEX

Empirical Approach

- Cross-sectional study in year 2017

- 5883 individuals in six ASEAN countries: Indonesia, Malaysia, Philippine, Singapore, Thailand and Vietnam

- *Challenge*: To identify and choose the most accurate variable to represent each driver

Descriptive analysis
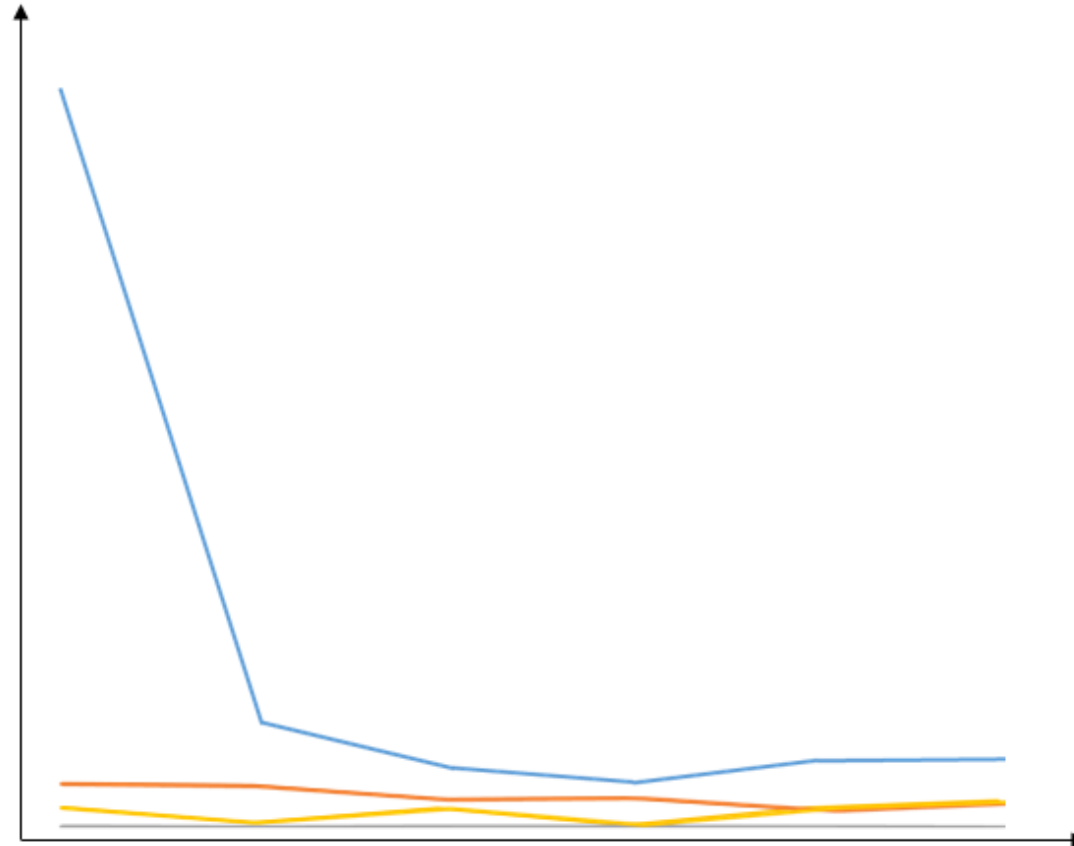
		Singapore	Malaysia	Thailand	Philippines	Indonesia	Vietnam
——	Supply	58690	4837	580	88	1284	1335
——	Infrastructure	84	80	53	56	32	47
——	Trust	37.3	8.4	36.7	3.2	37.2	50.9
——	Regulation	0.925	0.893	0.684	0.594	0.424	0.245

	Model 1	Model 2	Model 3
Demand		0.172***	0.078***
		(0.013)	(0.013)
Supply (log)		0.117***	0.040**
		(0.013)	(0.013)
Infrastructure		0.006***	0.005***
		(0.001)	(0.001)
Regulation		-0.357***	0.029
		(0.052)	(0.051)
Trust		-0.002**	0.003***
		(0.001)	(0.001)
Controls			
Age	-0.003***		-0.005***
	(0.000)		(0.000)
Gender	-0.037***		-0.037***
	(0.011)		(0.010)
Education	0.189***		0.112***
	(0.009)		(0.009)
Employment Status	0.074***		0.059***
	(0.012)		(0.011)
Income	0.026***		0.034***
	(0.004)		(0.004)
Constant	-0.090**	-0.317***	-0.473***
	(0.027)	(0.024)	(0.031)
R^2	0.169	0.148	0.264
Adjusted R^2	0.168	0.147	0.263
F value	238.172***	203.416***	210.834***

*** $p < 0.001$, ** $p < 0.010$, * $p < 0.050$, ᵞ$p < 0.100$ (two-tailed).

Results

H1: Stronger demand - SUPPORTED

H2: Stronger supply - SUPPORTED

H3: Stronger infrastructure - SUPPORTED

H5: Stronger trust - SUPPORTED

H4: Stronger regulation - NOT SUPPORTED

1: Implementation of law needs a time lag for the effects to take place

2: Regulation can be secondary since e-commerce purchase is an individual decision

3: People would only accept the law if it complies with their personal belief (Jackson et al. 2012)

Conclusions

1) E-commerce adoption is resulted from the integration of drivers at both individual and country levels

2) Social value plays as important role as formal institutions

3) Heterogeneity in institutions stand as a principle barrier to e-commerce diffusion across member countries

4) Laws protecting online security and privacy are not entirely effective in bringing confidence to users for embracing e-commerce

CAVEATS

1) Small number of countries

2) Potential bias from selective variables

3) Causality

4) Individual personalities as control

Thank you