

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

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Although e-commerce is conceivably beneficial for the three main actors: government, enterprises and customers, the prevalence of e-commerce adoption among individuals differs greatly across countries (Martinsons 2008). E-commerce diffusion remains uneven; a digital divide exists, and is widening, between nations (Zhu and Thatcher 2010). Therefore, it is imperative for researchers, practitioners, and policy-makers to further explore this phenomenon to ensure that opportunities offered by e-commerce can be fully exploited by all economies.

In attempt to provide academic and practical evidence, this research empirically examines the e-commerce adoption model of ASEAN. The model of e-commerce adoption in ASEAN emphasizes on four key drivers: demand, supply, infrastructure and regulation. To advance the model, we embed and test the effect of national trust on e-commerce adoption. Our research is guided by institutional theory that considers not only the formal institutions but also the cultural aspects from which individual behavior acquires legitimacy (Hoffman and Ventresca 1999; North 1990; Scott 1998). Also, Agarwal and Wu (2015) proposed on three macro factors: institutional environment, infrastructure, and culture, as predictors of e-commerce adoption. In other words, since online purchasing is conducted virtually and involves greater uncertainty than conventional buying (Alharbi et al. 2013), the inclination for using e-commerce among citizens is influenced by the level of trust nurtured within the society.

Specifically, our empirical approach integrates individual and country-level drivers to empirically test the relationship among demand, supply, infrastructure, regulation, and trust for explaining the propensity for online purchasing among 5883 individuals from six ASEAN countries in 2017.

This research contributes to both academics and practitioners in several ways. First, we advance the literature on those factors that influence e-commerce adoption by integrating and testing multi-level drivers in a single model. This approach not only allows us to control for all possible individual and country factors, but also to perform a cross-country analysis. Second, we capture the comprehensive environment of the country, consisting of both formal institutions and national culture-values for examination. Third, this research focuses in the context of ASEAN member states since little research on e-commerce has been conducted outside of the West, and in particular, outside of the United States (Doern and Fey 2006). Lastly, the findings of this study shed light on the initiatives of ASEAN to become a strong economic community where all members share the same aspiration to fully exploit the opportunities offered by e-commerce, when some are still hindered by institutional and cultural barriers.

## **Hypotheses**

*Hypothesis 1: Stronger demand is related with a higher propensity of e-commerce adoption among citizens in ASEAN.*

*Hypothesis 2: Stronger supply is related with a higher propensity of e-commerce adoption among citizens in ASEAN.*

*Hypothesis 3: Stronger infrastructure is related with a higher propensity of e-commerce adoption among citizens in ASEAN.*

*Hypothesis 4: Stronger regulation is related with a higher propensity of e-commerce adoption among citizens in ASEAN.*

*Hypothesis 5: Stronger trust is related with a higher propensity of e-commerce adoption among citizens in ASEAN.*

## **Data**

To test our hypotheses, we acquired individual-level data from the World Bank Global FINDEX database 2017. The inclusion of data prior to that date is not possible because some of the important variables were not consistently captured. FINDEX is the world's most comprehensive data set funded by the Bill and Melinda Gates Foundation that studies financial inclusion in countries worldwide. For example, in 2017, data are collected through nationally representative surveys of more than 150,000 adults in over 140 economies. For other country-level variables, we gathered data from various resources: the World Bank, International Telecommunication Union (ITU), and World Values Survey (WVS).

One remedy to compensate for the potential bias caused by the selection of variables is to include other confounding measures as controls in the model. Thus, we control for individual demographic attributes: age, gender, education, employment status, and income level.

We use ordinary least squares (OLS) regression to estimate the relationship among all independent variables and the propensity of e-commerce adoption.

## **Findings and conclusion**

In the context of e-commerce, can ASEAN economic bloc ensure equal outcomes from policies it imposes on all member countries, and does the macro environment influence individual behavior? We endeavor to challenge most studies on e-commerce that suggest that adoption is explained by either individual or national characteristics. Instead, we argue that e-commerce adoption results from the integration of both. Hence, online purchasing is not only influenced by who the customer is, but where the customer lives.

First, heterogeneity in institutions stand as a principle barrier to e-commerce diffusion across member countries. Although the collective mission of AEC is to ensure that all citizens have equal opportunities to utilize online businesses, adoption is limited to those who have means to pay, access to the internet and secure websites, and perceive themselves to live in a trustworthy society.

Second, we establish a conceptual link between two important, yet previously isolated, bodies of literature: e-commerce behavior and institutions. In particular, we found that a country's socio-culture is as important as formal institutions in explaining e-commerce behavior. From that, we learn that initiatives encouraging people to utilize online commerce should not merely focus on tangible aspects, such as infrastructure, but should also nurture values related to virtual activity such as trust.

Third, we discover that laws protecting online security and privacy are not entirely effective in bringing confidence to users for embracing e-commerce. It is essential for governments to establish strong regulation, but the eventual decision of whether or not to buy online is driven by other more dominant factors, presumably the customer's personal experiences and those of close friends and family. In other word, what government promotes regarding internet safety is not always what the citizens really perceive or experience.

In summary, for policy makers, our findings suggest that the ASEAN committee should personalize strategies for each member country, instead of deploying a common plan for all. In recognizing that each country faces different types of barriers to adopting e-commerce, aide and assistance can be tailored to each country's needs. Equally important, the efforts to increase e-commerce diffusion should not neglect cultural considerations while continuously focusing on the improvement of formal institutions. Finally, we suggest that the introduction of regulation of e-commerce must be comprehensively conveyed for citizens to fully understand and embrace the trend.