# Incubating Transnational Entrepreneurial Ventures in the ASEAN-X Group: A Quantitative Study

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**Abstract** - This study aims to contribute to the extensive literature on transnational entrepreneurship by investigating the relationship between seven categorical independent variables (IVs) and a dichotomous dependent variable within the ASEAN-X group. Specifically, a large dataset from the World Bank, OECD, InBIA, and Southeast Asia Ecosystem Report provided a sample of N = 967. A binary logistic regression model was used to analyze the study questions and hypotheses following the Transnational Entrepreneurship (TE) theory. The modelling results reported that the remittances measured by total transaction costs (WaldX2 = 22.49, df = 5, p < .001), entrepreneurs' age (WaldX2 = 11.78, df = 4, p =.019), entrepreneurs' education (WaldX2 = 48.33, df = 3, p < .001), and business incubators' ownership or status (WaldX2 = 14.97, df = 2, p = .001) potentially gauged the success of startup businesses. Future studies should also emphasize the implications of phenomenon-based research in business and society to identify specific theories based on the lived experiences.

**Keywords:** Transnational Entrepreneurship theory; remittances; business incubation; startups

## 1. Introduction

In many Asian countries, migrant workers' remittances and money transfers from various community members were regarded as significant income sources that remarkably affected the recipients' economic standing. Given the annual increase in numbers, the inflows were at par with foreign aids and foreign direct investments (FDIs). An estimated 258 million people lived abroad in 20 17 and denoted an approximate increase of 38 million in 2010 (United Nations, 2017). Meanwhile, developed countries accommodated approximately two-thirds (165 million) of the population born overseas in 2017 (United Nations, 2017). The official record of estimated remittances received by developing countries in 2016 was $429 billion (World Bank, 2017). The number highlighted the official development assistance (ODA) level by over three times in developing nations since 2000 (World Bank, 2017). Undeniably, the estimates could reflect numbers below the official count following other unofficial back channels involved in money transfers. The perpetual rise of migrant and non-immigrant populations in developed countries simultaneously reflected an increase

of remittances to countries of origin. Thus, researchers were inclined to examine the various opportunities derived from the situation.

The TE concept was established based on the opportunities presented to migrants and the immediate social setting as a positive from of globalization (Dunning, 2005). For example, transnational entrepreneurs involved financial and non-financial resources, such as employment opportunities for the economic and social development of COO (Riddle, Hrivnak & Nielsen, 2010). Similar to new business ventures, transnational entrepreneurs faced multiple social and economic challenges in daily business operations. Thus, a unique joint venture with another business institutions was required to aid transnational entrepreneur in overcoming inherent business challenges at the preliminary stages of the business setup. For example, business institutions comprised business incubators (BIs) at various levels that motivated entrepreneurs during the initial startup stages of the business. In the study context, the different variables related to the novel link between transnational entrepreneurs' remittances and BIs. Accordingly, the new relationship was deemed more conducive for transnational entrepreneurs than the conventional knowledge transfer methods previously employed (Albort-Morant & Oghazi, 2016). Moreover, BIs generated more successful startups (Mas-Verdu, Ribeiro-Soriano & Roig-Tierno, 2015) with consulting services, office space rental, security services, professional staff training, and availability of utilities, telecommunications, administrative services, technology, and financial capital. The study also examined how several variables (entrepreneurs' gender, age, education and training, business size, ownership, connections, and remittances) influenced the success of startup businesses.This quantitative study employed binary logistic regression modeling to analyze the relationship between transnational entrepreneurs' remittances in terms of transaction cost, demographic characteristics, BI characteristics and startup success in terms of equity funding within the ASEAN-X group. Research questions were developed to guide the analysis of IVs (transnational entrepreneurs' remittances and demographic characteristics and BI characteristics) in investigating the relationship with startup success in the ASEAN-X group context as the dependent variable. Hence, the study questions are listed as follows:

(1) To what extent do transnational entrepreneurs' remittances in terms of total transaction cost predict the success of startup businesses concerning equity funding in the ASEAN-X group?
(2) To what extent do transnational entrepreneurs' demographic characteristics of gender, age, and education or training predict the success of startup businesses concerning equity funding in the ASEAN-X group?
(3) To what extent do BI characteristics of size, ownership, and connections or networks predict the success of startup businesses concerning equity funding in the ASEAN-X group?

## 2. Literature Review

Although TE was generally disregarded in conventional internationalization studies, the concept emphasized individual entrepreneurs and the effects of two distinct institutional structures: COO and country of residence (Drori et al., 2009). Additionally, transnational entrepreneurs engaged in socially-embedded and dichotomous entrepreneurship processes to enhance and maximize international resource bases (Drori et al., 2009). Although home country contacts emphasized transnational entrepreneurs, more networking opportunities with like-minded entrepreneurs in entrepreneurial activities could be actualized through accelerator or BI programs. Regarding entrepreneurial ecosystems, BIs and accelerators

were significant and influential catalysts of transnational entrepreneurship (Brown, Mawson, Lee & Peterson, 2019). As an expanding study field, transnational entrepreneurship needed to emphasize entrepreneurial opportunities and local economic contributions from transnational entrepreneurs for financial growth and development. Hence, the remittance phenomenon triggered the exploration of diverse opportunities related to entrepreneurial activities, particularly among migrant and the non-migrant populations in highly-developed countries. The activities were consequently associated with an increased volume of remittances to COO, particularly in the economic scenario of the ASEAN-X group. The need to examine transnational entrepreneurs' transfer inflows for startup ventures and the significant role of BIs as support systems (Brown et al., 2019) extended the body of knowledge beyond the internationalization theory.

## 2.1 The Business Incubators (BIs)

Generally, business incubators (BIs) denote non-profit organizations affiliated with universities, local and regional governments, chambers of commerce, private companies, science parks, private real-estate developers, and other non-profit institutions that provide various startup services and resources for new entrepreneurs. In this vein, the decrease in errors subsequently increased the success rate of businesses (Al-Mubaraki, 2014). Overall, BIs aimed to leverage entrepreneurial talent and regarded as the connecting link between entrepreneurs and commercialization processes. In 1959, BI was established in Batavia, New York as a privately-owned for-profit institution (Brown, Harrell & Regner, 2000). Additionally, BI resources were derived from local and regional governments, chambers of commerce, private companies, universities, science parks, private real-estate developers, and non-profit organizations. Some of the hybrid incubators possessed specific structural properties to streamline organizational replications and functions (Ahmad & Thornberry, 2018). Notably, BIs providing the best support and services proved essential to tenants or incubatees (Albort-Morant & Oghazi, 2016).

## 2.2 Migrant Remittances

Migrant remittances are defined as the financial inflows transferred to relatives in COO from transnational communities living in the country of destination. Kakhkharov and Rohde (2019) indicated a positive effect between remittances and the financial development of recipient countries. Figure 1 presents the leading countries ranked based on received remittances in 2018. Specifically, India ranked as number one with $78.6 billion in received remittances, followed by China ($67.4 billion), Mexico ($35.7 billion), and the Philippines ($33.8 billion.

## 2.3 Transnational Entrepreneur

A transnational entrepreneur defines a migrant who engaged in socially-embedded environments, and sustained business networks with COO and the country of residence while constructing and maximizing the resource base (Drori et al., 2009). Following the dynamism in migrant entrepreneurship, research on migrants and entrepreneurial engagement revealed a complex web of theoretical and analytical tasks concerning the various systems of evaluating and reporting migrantness (Elo et al., 2018). Besides, transnational influence types and networking size significantly impacted the TE dynamics (Brzozowski, Cucculelli & Surdej, 2017).

## 2.4   Startup Venture

Generally, a startup venture refers to a new business in the early operational stages that was generally financed by an individual or small groups (Nalintippayawong et al., 2018). New business ventures were also depicted as a recently-developed entrepreneurial business model following technological and innovative aspects, wherein products or services were marketed in a newly-established market. Accordingly, high uncertainty levels and rapid evolution defined and distinguished startups from stable multinational organizations (Giardino et al., 2014). For example, given that the U.S. has the highest ranking with over 83,000 startups, there are 800 technology-based startups established annually in India with an estimated growth to 11,500 by 2020. Specifically, 43% involved technology-based organizations and 9% were managed by women (Tech Collective, 2018). Given the rise of a digital economy involving 655 million people, Southeast Asia held a vast and untapped potential in the Asia Pacific startup ecosystem and digital industry (Tech Collective, 2018). With 565 digital hubs ensuring the smooth transition of the rapidly growing trend, technology business incubators (TBIs) were vital to startup success (Tech Collective, 2018; Lamine, Fayolle, Wright, Klofsten & Etzkowitz, 2018).

## 3. Methodology

Following the archival databases from the World Development Indicators (WDI), Data on Immigrants in OECD Countries (DIOC), International Business Innovation Association (InBIA), and the 2018 Southeast Asia (SEA) Startup Ecosystem Report, the study population involved 10 ASEAN countries with a target population of 630 million and a combined GDP of $2.4 trillion (Chin, 2017). The study sample consisted of data involving the 10 ASEAN countries in line with the research problem, purpose, and questions. Specifically, non-probability sampling was utilized as only the countries of interest were involved in the study (Cozby & Bates, 2015). Using G*Power analysis to calculate a priori sample size estimate, this study involved a minimum of 725 respondents ($f2 = .02$, $\alpha = .05$, $1-\beta = .8$, number of predictors = 7).

## 4. Results and Findings

This study employed a quantitative method using a binary logistic regression model to assess the relationship between a dichotomous variable (dependent variable) outcome and a set of predictor variables (IVs). Additionally, the regression models were applied using predictor variables (transnational entrepreneurs' remittances, gender, age, education or training, BI size, ownership, and connection or business networks) to predict the dependent variable outcome (startups success measured with equity funding) in the 10 ASEAN countries. Although the few existing TE studies used qualitative case study approaches as alternative and prominent research designs in the early developmental stages of TE (Elo & Freiling, 2015), the research nature, state, and complexity culminated in a quantitative study as the appropriate technique to investigate the relationships between variables (Brown et al., 2019). As this study was based on numerical data and statistical analyses, the quantitative method was suitable following the research questions theoretical assessments.

The regression models employed in this study predicted the probability of an event occurring given the known values of the predictor variables. Specifically, binary logistic regression

was gauged using Maximum Likelihood Estimation (MLE) following the transformation of the dependent variable into a logit variable. In logarithms, a logit variable was the natural log of the odds of the dependent variable occurrences (White, 2005). Additionally, MLE was an iterative procedure applied in SPSS to estimate the model parameters through successive parameter approximations (Field, 2013). The process would end upon reaching a maximum number of attempts. While linear regression utilized Ordinary Least Squares (OLS) approach to find the line that complemented data fit, logistic regression was similar to cross-tabulation following the categorical outcome using Chi-square test statistic. Notably, the basic assumptions of linear regression and general linear models, such as linearity, normality, homoscedasticity, and measurement level did not apply to binary logistic regression. In this study, the ASEAN-X group consists of 10 Asian countries: Indonesia, Malaysia, the Philippines, Singapore, Thailand, Cambodia, Laos, Myanmar, Vietnam, and Brunei.

## 4.1. Entrepreneurs' Demographic Characteristics

Immigrants who were known as transnational entrepreneurs lived in OECD and non-OECD countries (countries of destination) during the 2015/2016 survey. The survey indicated that out of the 967 sample cases, 49.6% were male and 49% were female. The largest age group ranged between 25 and 64 years old (31.5%), followed by 15 to 24 years old (30.2%), and over 65 years old (28.2%). Additional age group ranges were also included in the survey result database: 15 to 64 years old (5.6%) and unknown data (3.1%). Regarding education, the survey reported the highest percentage of individuals with lower secondary education (25.9%), followed by upper secondary or post-secondary (25.6%), Bachelor's, Master's, or PhD degree (23.7%), and unknown data (23.5%). In this regard, the demographics data could not account for the 13 respondents (1.3%) under the entrepreneurs' demographics characteristics (gender, age, and education).

Table 1. Model Accuracy

**Classification Table[a]**

| | | | Predicted | | |
|---|---|---|---|---|---|
| | | | Success/Failure of S/ups in terms of Equity Funding | | Correct Percentage |
| | Observed | | No Success | Success | |
| Step 1 | Success/failure of S/ups in terms of equity funding | No success | 538 | 18 | 96.8 |
| | | Success | 17 | 58 | 77.3 |
| | Overall percentage | | | | 94.5 |

a. The cut value is .500

## Results

Table 1 indicates the degree to which the model predicted group membership using predictor variables to gauge the dependent (outcome) variable. The accurate classification of 538 out of the 556 startups (96.8% of the cases) in terms of equity funding fell under the "no success" outcome. Regardless, 18 other cases were misclassified. Additionally, the model precisely classified 58 out of the 75 startups (77.3% of cases) in terms of equity funding under the "success" outcome. Nevertheless, 17 other cases were misclassified. Overall, the classification accuracy increased from 88.1% (null model) to 94.5% (full model). Also, given that the 18 cases assumed to demonstrate "success" contrarily fell under "no success"

the outcome was identified as false positives. Contrarily, the 17 cases predicted to fall under "no success" but found under the "success" outcome were labelled as false negatives. Furthermore, the first row percentage denoted the model specificity, whereas the second row percentage denoted the model sensitivity.

Table 2. Variables in the Equation with Full Model

| | | B | S.E. | Wald | df | Sig. | Exp (B) | 95% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Lower | Upper |
| Step 1ª | Rem.in ttl TC | | | 22.489 | 5 | .000 | | | |
| | Rem.in ttl TC (1) | -1.280 | .977 | 1.718 | 1 | .190 | .278 | .041 | 1.886 |
| | Rem.in ttl TC(2) | -.227 | .968 | .055 | 1 | .815 | .797 | .119 | 5.320 |
| | Rem.in ttl TC(3) | -.855 | 1.205 | .503 | 1 | .478 | .425 | .040 | 4.515 |
| | Rem.in ttl TC(4) | -3.683 | 1.144 | 10.354 | 1 | .001 | .025 | .003 | .237 |
| | Rem.in ttl TC(5) | -.105 | 1.224 | .007 | 1 | .932 | .901 | .082 | 9.918 |
| | Entrep.gender(1) | -20.557 | 1915.508 | .000 | 1 | .991 | .000 | .000 | . |
| | Entrep. age | | | 11.785 | 4 | .019 | | | |
| | Entrep. age (1) | -.114 | .506 | .051 | 1 | .822 | .892 | .331 | 2.406 |
| | Entrep. age (2) | -.900 | .518 | 3.014 | 1 | .083 | .407 | .147 | 1.123 |
| | Entrep. age (3) | -4.035 | 1.282 | 9.912 | 1 | .002 | .018 | .001 | .218 |
| | Entrep. age (4) | .266 | 13717.959 | .000 | 1 | 1.00 | 1.305 | .000 | . |
| | Entrep.educ. | | | 48.327 | 3 | .000 | | | |
| | Entrep.educ.(1) | -2.908 | .526 | 30.562 | 1 | .000 | .055 | .019 | .153 |
| | Entrep.educ.(2) | -5.012 | .840 | 35.632 | 1 | .000 | .007 | .001 | .035 |
| | Entrep.educ.(3) | -21.978 | 3003.221 | .000 | 1 | .994 | .000 | .000 | . |
| | BI size | | | 1.232 | 2 | .540 | | | |
| | BI size (1) | -.380 | .758 | .251 | 1 | .616 | .684 | .155 | 3.024 |
| | BI size (2) | -1.166 | 1.088 | 1.149 | 1 | .284 | .312 | .037 | 2.626 |
| | BI status | | | 14.975 | 2 | .001 | | | |
| | BI status (1) | -22.339 | 19665.135 | .000 | 1 | .999 | .000 | .000 | . |
| | BI status (2) | -3.221 | .832 | 14.975 | 1 | .000 | .040 | .008 | .204 |
| | BI partners | | | 4.392 | 3 | .222 | | | |
| | BI partners (1) | -1.600 | .968 | 2.733 | 1 | .098 | .202 | .030 | 1.346 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BI partners (2) | -21.469 | 19591.004 | .000 | 1 | .999 | .000 | .000 | . |
| BI partners (3) | -1.297 | .762 | 2.897 | 1 | .089 | .273 | .061 | 1.217 |
| Constant | 5.439 | 1.444 | 14.188 | 1 | .000 | 230.279 | | |

a. Variable(s) entered on step 1: Remittances in terms of total transaction cost, Entrepreneurs' gender, Entrepreneurs' age, Entrepreneurs' education, BI size, BI status, BI partners.

Table 2 reflects the full model values of the regression coefficient (b), S.E. associated with the coefficients, Wald chi-square, and two-tailed *p* value in testing the null hypothesis, df for each coefficients tests, and the odds ratios of the predictors. The β-values for the logistic regression equation to predict the outcome were in log-odds units. For each predictor, the regression slope denoted the predicted changes in the log odds of falling into the target group (startup success) per one unit increase on the predictor (other predictors held constant). In this regard, the coefficient was the predicted change in log odds per unit increase on the predictor variable. A positive regression coefficient indicated that the probability of attaining startup success increased following the increase in the predictor variable while a negative regression coefficient revealed that the probability of achieving startup success decreased due to the increase in the predictor variable. A regression coefficient of "0" indicated no relationship between the IV and dependent variable. The odds ratios for the predictor variables with values under "Exp(B)" were the exponentials of the coefficients (b) or the multiplicative change in odds per one unit increase on the predictor. Typically, an odds ratio higher than 1 (OR > 1) indicated an increase in the predictor variable scores with the probability of event occurrence. In contrast, an odds ratio below 1 (OR < 1) indicated a decreasing probability of event occurrence despite the increase of predictor variable scores. The estimates in the logistic regression equation demonstrated the relationship between IVs and the dependent variable in the logit scale. The equation also indicated the increase or decrease in the predicted log odds of startup success (dummy code = 1) that would be gauged by a one unit increase or decrease in the predictor (other predictors held constant). For insignificant predictors, the coefficients were not significantly different from 0 during coefficient interpretations. In a coefficient that was significantly different from 0, the predictor significantly contributed to the outcome prediction. Accordingly, the predictor variables in this study were categorical variables and dummy-coded following the SPSS output. Each of the six predictor variables demonstrated varying degrees of freedom (df). For example, the remittance in terms of transaction cost variable had five dummies with five dfs. In this study, gender was a dichotomous predictor variable with dummy variables coded to 1 for male and 2 for female respondents.

The s.e. linked to the coefficients in Table 2 was utilized to test whether the parameter was significantly different from 0, and form a confidence interval for the parameter. In linear regression, the estimated regression coefficients (β) and s.e. were utilized to compute the *t-statistic* in identifying the individual contribution of predictors and the model fit to data. Contrarily, the *z-statistic* (Wald statistic reflected as $z^2$) was used in logistic regression to assess whether the variable was a significant outcome predictor. Regardless, the regression coefficient (β) was large enough in some cases to inflate the s.e., thus resulting in the underestimation of *z-statistic* (Menard, 2002). Consequently, the s.e. inflation increased the probability of insignificant predictors. Nevertheless, the inflation contributed to the model significance (Type 2 error) in reality. The Wald chi-square statistics and sig. values were also included to test the null hypothesis using a two-tailed test comparing each *p* value to

the pre-selected critical *p* value of alpha ($\alpha$ = .05). Coefficients with *p* values of .05 or below were deemed statistically significant. Specifically, the null hypothesis was rejected, and the alternative hypothesis was accepted. In contrast, coefficients with *p* values higher than .05 were statistically insignificant and failed to reject the null hypothesis.

**Research Question 1/Hypothesis**

In this study, the research question (RQ1), null hypothesis ($H1_0$), and the alternative hypothesis, ($H1_a$) were developed as follows:

**RQ1:** To what extent do transnational entrepreneurs' remittances in terms of total transaction cost predict the success of startup businesses in terms of equity funding within the ASEAN-X group?

**$H1_0$**: Transnational entrepreneurs' remittances do not predict the success of startup businesses in terms of equity funding within the ASEAN-X group.

**$H1_a$:** Transnational entrepreneurs' remittances predict the success of startup businesses in terms of equity funding within the ASEAN-X group.

As the study employed binary logistic regression to model the relationship between the predictor variables (categorical) and the outcome variable (dichotomous and categorical), the SPSS output generated the results following the predictor variables. Overall, a highly significant effect ($Wald_X^2$ = 22.49, df = 5, *p* < .001) was observed in the predictor variable (remittances in terms of transaction cost). Thus, the null hypothesis ($H1_{0,}$) was rejected. The Exp(B) column (odds ratio) proposed that for every one unit increase in the fourth dummy variable (significant variable with a negative B value), the odds of achieving a "no success" increased by a factor of 40 (1/.025). Under the 95% confidence interval for the odds ratio column, the researcher was 95% confident that the true value of the odds ratio was between those units.

**Research Question 2/Hypotheses**

The research question (RQ2), null hypotheses ($H2a_0$, $H2b_0$, and $H2c_0$), and alternative hypotheses ($H2a_a$, $H2b_a$, and $H2c_a$) were developed stated as follows:

**RQ2**. To what extent do transnational entrepreneurs' demographic characteristics of gender, age, and education or training predict the success of startup businesses in terms of equity funding within the ASEAN-X group?

**$H2a_0$.** Transnational entrepreneurs' gender does not predict the success of startup businesses in terms of equity funding within the ASEAN-X group.

**$H2a_a$.** Transnational entrepreneurs' gender predicts the success of startup businesses in terms of equity funding within the ASEAN-X group.

Based on Table 2, the predictor variable of gender did not contribute to the model (p = .991). The negative coefficient (-20.557) indicated that the target group (startup success) showed more coding of "2" (females) than "1" (males) despite being statistically insignificant after

controlling other predictor variables (p > .05). Following the variable outcomes for entrepreneurs' gender, no statistically significant effects were identified (Wald$_X^2$ = .000, df = 1, $p$ = .991). Hence, the researcher failed to reject the null hypothesis (H2a$_0$).

**H2b$_0$.** Transnational entrepreneurs' age does not predict the success of startup businesses in terms of equity funding within the ASEAN-X group.

**H2b$_a$.** Transnational entrepreneurs' age predicts the success of startup businesses in terms of equity funding within the ASEAN-X group.

In the study context, entrepreneurs' age was represented by four dummy variables. The first dummy variable was a comparison between the 25-64-year-old group (coded 1 on the variable) and the 15-24-year-old group (reference category coded 0 on the variable). The negative coefficient implied that the 25-64-year-old group were less inclined to contribute to startup success than the 15-24-year-old group. Nonetheless, the difference was statistically insignificant (b = -.114, s.e. = .506, $p$ = .822). Likewise, the second dummy variable compared the over 65-year-old group (coded 2 on the variable) and the 15-24-year-old group (reference category coded 0 on the variable). The difference in groups were statistically insignificant (b = -.900, s.e. = .518, $p$ = .083). The third dummy variable compared the 15-64-year-old group (coded 3 on the variable) and the 15-24-year-old group (reference category coded 0 on the variable). Although the negative coefficient proposed that the 15-64-year-old group was less inclined to contribute to startup success than the 15-24-year-old group, the difference between both groups was statistically significant (b = -4.035, s.e. = 1.282, $p$ = .002).

The fourth dummy variable compared the unknown data comprising participants who did not want to specify the age during the survey (coded 4 on the variable) and the 15-24-year-old group (reference category coded 0 on the variable). The positive coefficient revealed that the specific group was more inclined to contribute to startup success than the 15-24-year-old group. The difference between both groups was insignificant (b = .266, s.e. = 13717.95, $p$ = 1.0). Notably, a highly significant overall effect (Wald$_X^2$ = 11.78, df = 4, $p$ = .019) was observed in the predictor variable of entrepreneurs' age. As such, the null hypothesis (H2b$_0$) was rejected. The Exp(B) column (odds ratio) proposed that for every one unit increase in the third dummy variable (significant variable with a negative B value), the odds of achieving a "no success" increased by a factor of 55.5 (1/.018). Following the 95% confidence interval for the odds ratio column, the researcher was 95% confident that the true value of the odds ratio was between the given units.

**H2c$_0$.** Transnational entrepreneurs' education or training does not predict the success of startup businesses in terms of equity funding within the ASEAN-X group.

**H2c$_a$.** Transnational entrepreneurs' education or training predicts the success of startup businesses in terms of equity funding within the ASEAN-X group.

In the research context, entrepreneurs' education was represented by three dummy variables. The first dummy variable was a comparison of the upper secondary or post-secondary group (coded 1 on the variable) and the lower secondary group (reference category coded 0 on the variable). Although the SPSS output indicated a negative coefficient it was implied that the upper secondary or post-secondary group was less inclined to contribute to startup success than the lower secondary reference group. Notably, the difference was statistically

significant (b = -2.908, s.e. = .526, p < .001). Similarly, the second dummy variable compared the group under the Bachelor's, Master's, or PhD group (coded 2 on the variable) and the lower secondary group (reference category coded 0 on the variable). The difference between both groups was statistically significant (b = -5.012, s.e. = .840, p < .001). The third dummy variable also compared the participants who did not wish to reveal the educational level during the survey (coded 3 on the variable) and the lower secondary group (reference category coded 0 on the variable). The negative coefficient proposed that the unknown group was less inclined to contribute to startup success than the lower secondary group. The difference in groups was statistically insignificant (b = -21.978, s.e. = 3003.221, p = .994). A highly significant overall effect ($Wald_X^2 = 48.33$, df = 3, p < .001) on the predictor variable of entrepreneurs' education was identified. Hence, the null hypothesis ($H2c_0$) was rejected. The Exp(B) column (odds ratio) proposed that for everyone unit increase in the first dummy variable (significant variable with a negative B value), the odds of obtaining a "no success" increased by a factor of 18 (1/.055). Likewise, in the second dummy variable (significant variable with a negative B value), the likelihood of attaining a "no success" increased by a factor of 143 (1/.007). Under the 95% confidence interval for the odds ratio column, the researcher was 95% confident that the true value of the odds ratio was between the given units.

**Research Question 3/Hypotheses**
The research question (RQ3), null hypotheses (H3a0, H3b0, and H3c0), and alternative hypotheses (H3aa, H3ba, and H3ca) were developed as follows:

**RQ3.** To what extent do BI characteristics of size, ownership, and connections or networks predict the success of startup businesses in terms of equity funding within the ASEAN-X group?

**H3a$_0$.** The BI size does not predict the success of startup businesses in terms of equity funding within the ASEAN-X group.

**H3a$_a$.** The BI size predicts the success of startup businesses in terms of equity funding within the ASEAN-X group.

As the BI size was represented by two dummy variables, the first dummy variable was a comparison of medium (coded 1 on the variable) and large (reference category coded 0 on the variable) sizes. The SPSS output indicated a negative coefficient, thus implying that medium BIs was less inclined to contribute to startup success than big BIs. Notably, the difference was statistically insignificant (b = -.380, s.e. = .758, $p$ = .616). Likewise, the second dummy variable compared the small BI (coded 2 on the variable) and large BI (reference category coded 0 on the variable) sizes. The difference in groups was statistically insignificant (b = -1.166, s.e. = 1.088, $p$ = .284). The overall variable results reported that BI size showed a statistically insignificant effect ($Wald_X^2 = 1.23$, df = 2, $p$ = .540). Hence, the researcher failed to reject the null hypothesis (H3a$_0$).

**H3b$_0$.** The BI ownership does not predict the success of startup businesses in terms of equity funding within the ASEAN-X group.

**H3b$_a$.** The BI ownership predicts the success of startup businesses in terms of equity funding within the ASEAN-X group.

The BI ownership or status was also represented by two dummy variables. The first dummy variable was a comparison of partnership (coded 1 on the variable) and single proprietorship (reference category coded 0 on the variable). The SPSS output demonstrated a negative coefficient, thus implying that BI partnerships would less likely contribute to startup success than the individual or single proprietorship group. Notably, the difference was statistically insignificant (b = -22.339, s.e. = 19665.135, $p$ = .999). The second dummy variable compared the corporation status (coded 2 on the variable) and the single proprietorship status (reference category coded 0 on the variable). Although the negative coefficient reported that the BI corporation status would less likely contribute to startup success, the difference in groups was statistically significant (b = -3.221, s.e. = .832, $p$ < .001).

Overall, a highly significant effect on the variable of BI status or ownership (Wald$_X^2$ = 14.97, df = 2, $p$ = .001) was observed. Thus, the null hypothesis (H3b$_0$) was rejected. The Exp(B) column (odds ratio) proposed that for every one unit increase in the second dummy variable (significant variable with a negative B value), the odds of attaining a "no success" increased by a factor of 25 (1/.04). Under the 95% confidence interval for the odds ratio column, the researcher was 95% confident that the true value of the odds ratio was between the given units.

**H3c$_0$.** The BI connections or networks do not predict the success of startup businesses in terms of equity funding within the ASEAN-X group.

**H3c$_a$.** The BI connections or networks predict the success of startup businesses in terms of equity funding within the ASEAN-X group.

The BI connection, network, or partnership was represented by three dummy variables. The first dummy variable compared the government institution (coded 1 on the variable) and the private firm groups (reference category coded 0 on the variable). The negative coefficient indicated that government institution partnerships would less likely contribute to startup success than private firm networks. The difference between both groups was statistically insignificant (b = -1.600, s.e. = .968, $p$ = .098). Similarly, the second dummy variable compared NGO (coded 2 on the variable) and private firm networks (reference category coded 0 on the variable). The difference in groups was statistically insignificant (b = -21.469, s.e. = 19591.004, $p$ = .999). The third dummy variable compared university partners (coded 3 on the variable) and private firms (reference category coded 0 on the variable). The negative coefficient demonstrated that university partners were less likely to contribute to startup success. The difference was statistically insignificant (b = -1.297, s.e. = .762, $p$ = .089). Overall, the variable results indicated that BI partners did not show a statistically significant effect (Wald$_X^2$ = 4.392, df = 3, $p$ = .222). Thus, the researcher failed to reject the null hypothesis (H3c$_0$).

**Evaluation of the Findings**

For research question 1, although the predictor variable was linked to TE literature and startup success (Frid et al., 2016; Maier, 2016; McGowan, 2018; Slimane & Rousseau, 2020; Yang & Aldrich, 2017), the study results revealed a significant relationship between remittances in terms of total transaction cost and startup success in terms of equity funding within the 10 ASEAN countries. It was also affirmed that the crucial role of remittances in global entrepreneurial pursuits (Kim & Li, 2014; Lin & Yang, 2017; Vaaler, 2011). Furthermore, the study outcome corresponded to existing works of literature on the flow of

remittances transferred by migrants and the increase in transnational migrants residing outside the COO (Azizi, 2018; Eggo et al., 2019). The findings were also in line with present studies on remittances despite the exorbitant fees related to sending an average of $200 to the migrants' COO (World Bank, 2017).

For research question 2, although the predictor variable of gender corresponded to studies stating that no gender-based variances were identified in potentially achieving success in business (Afandi & Kermani, 2015), the study results demonstrated that gender did not contribute to the model (p =.991). Therefore, the researcher failed to reject the null hypothesis ($H2a_0$). In this manner, insufficient evidence was found to conclude that gender did not predict the success of startup businesses in terms of equity funding within the 10 ASEAN countries. Further, the study results reported that the age variable did contribute to the model, ($p = .019$). Given that the predictor variable displayed statistical significance ($p < .05$), the study outcomes corresponded to relevant literature on younger entrepreneurs. The role of age as a significant aspect in entrepreneurship was evident in developed countries, such as America, Europe, and Australia (Lamotte & Colovic, 2013; Levesque & Minniti, 2006). The predictor variable of entrepreneurs' education made a significant contribution to the model ($p = .001$) and corresponded to existing literature on whether education supported entrepreneurship in creating novel concepts and innovative strategies for profitable ventures (Barba-Sanchez & Atienza-Sahuquillo, 2018; Gelaidan & Abdullateef, 2017). Although entrepreneurs were not required to complete formal schooling, ample evidence highlighted a positive link between entrepreneurs' educational level and high performance or growth towards higher firm profits (Autio, 2005; Ayala & Manzano-Garcia, 2010; de Jorge Moreno et al., 2010; Karadeniz & Ozcam, 2010; Terjesen & Szerb, 2008).

Research question 3 investigated the relationship between BI size, ownership or status, and connections or partnerships to predict the success of startup businesses in terms of equity funding within the 10 ASEAN countries. The study results reported that the predictor variable of BI size did not contribute to the model ($p = .540$). Although BI size did not have a positive or negative impact on tenant development, but the variable was contingent on particular tenant characteristics (Klingbeil & Semrau, 2017). The study results also reported that the predictor variable of BI ownership or status contributed to the model (p = .001). The BI ownership factor enabled access to diversified services among new entrepreneurs. Regardless of whether BI was a corporation, partnership, or single proprietorship, the obtainability of various services by incubatees emphasized the pursuit of entrepreneurial businesses. Consequently, a global network of BIs was established to address sustainable entrepreneurship and poverty issues while encouraging the development of emerging economies through the Asia Pacific Incubation Network (APIN).

The study results demonstrated that the predictor variable of BI connections or partners, did not contribute to the model (p = .222). The result strongly contrasted with existing entrepreneurship research on BIs as significant business partners during the startup and development of new and sustainable entrepreneurial ventures through training and mentorship. Social networks also offered unique privileges to BIs and clients by expediting business processes to save time amid decision- making issues (Fernandez-Perez et al., 2013). The formal and informal partnerships with private firms and NGOs or government institutions and universities provided access to the overall support needed from mentors and business partners during the incubation and post-incubation phases (Alpenidze et al., 2019). As BIs were vital partners during the startup, development, and sustainable stages, startup businesses needed to address particular limitations, such as excessive collateral requirements, high capital costs, and insufficient experiences with financial intermediaries.

## 5. Recommendations for Practice and Future Research

The findings derived from the binary logistic regression modelling results were relevant information for policymakers from government agencies and private institutions in supporting entrepreneurial funding to improve existing entrepreneurial development programs. The current efforts by government agencies in the ASEAN group should also continue to collaborate with inter-agency task forces on migration-related goals, such as sustainable development goals (SDG) in reducing remittance costs (SDG indicator 10.c.1) and goals relevant to reducing the recruitment costs of migrant workers (Ratha, 2020). Policymakers were recommended to collaborate with banking institutions, money transfer operators, and post offices in addressing the exorbitant fees associated with transferring an average of $200 (World Bank, 2017) from migrants to families in COO. An estimated reduction by at least 5% in transaction costs could save up to $16 billion a year (World Bank, 2017).

The study findings indicated the current BI efforts involving startup developments to provide multiple services and resources for new entrepreneurs and minimize errors, thus increasing the potential of success (Al-Mubaraki, 2014). The overall BI objective served to leverage entrepreneurial talents. Essentially, BIs were regarded as the link between entrepreneurs and the commercialization process. Given the inherent study limitations, future research could make improvements in data collection by examining various pools of updated databases, such as the data gathered by the Global Entrepreneurship Monitor (GEM) survey for a particular geographic location in Asia. Future research should also consider qualitative studies using NVivo research tools to report entrepreneurs' motivations to continue business innovations while addressing issues on preliminary-stage finance gaps and leveraging transnational entrepreneurs to develop favorable technological enterprise systems following InfoDev and local governments. Consequently, BIs could become significant to rural communities due to challenging environments and poverty issues.

Phenomenon-based studies should also be considered to outline business and social implications with research questions and relevant theories associated with contemporary and authentic situations. In a dynamic environment involving institutional and socio-economic changes, addressing complex issues and leveraging existing knowledge to support the efforts of social and behavioral scientists are vital in processing the global phenomena (Buckley, Doh, & Benischke, 2017). For example, the detrimental impacts of COVID-19 on migration and remittance flows could trigger long-term and widespread economic crises from the migrants' perspective. Host countries are currently facing additional challenges in health and agriculture sectors that heavily relied on migrant workers' manpower.

As migrant workers face the imminent risk of infection and potential loss of employment, wages, and health insurance coverage, the effect of global trends regarding international economic migration and remittances in 2020 and 2021 are inevitable. Moreover, a projected global economic crisis in 2020 is expected due to the unprecedented event that started in 2019. Remittance flows to low and middle-income countries are expected to drop by an estimated 20% from $554 billion in 2019 to $445 billion in 2020 (Ratha, 2020). Moreover, as migrant remittances to COOs was an economic lifeline to poor households in many countries, a decline in remittance flow could rapidly increase poverty while reducing household access to much-needed health services (Ratha, 2020).

## 6. Conclusions

The research results would potentially benefit local and regional governments, chambers of commerce, private companies, universities, science parks, private real-estate developers, and

non-profit organizations. Additionally, this study was limited by various factors, such as the unavailability of updated or current data on entrepreneurs' demographic characteristics within the 10 ASEAN countries. The second limitation concerned the research methodology and design. Given the binary logistic regression modelling assumptions, the study did not intend to establish causal relationships among variables. Thus, the study results could not be used to propose, infer, or identify the causal relationships among variables. Regardless, the study presented novel ideas worthy of a PhD research topic. Specifically, an intermediate statistical level and a theoretical framework was adopted to depict the complex challenges that contributed to the revitalization of International Business (IB) research.

**References**

Ahmad, A.J., & Thornberry, C.J. (2018). On the structure of business incubators. De-coupling issues and the misalignment of managerial incentives. *The Journal of Technology Transfer, 43*(5), 1190-1212. https://doi:10.1007/s10961-016-9551-y

Afandi, E., & Kermani, M. (2015). Bridging the gender gap in entrepreneurship: An empirical analysis. *Journal of Developmental Entrepreneurship, 20*(2), 1-23 https://doi.org/10.1142/S1084946715500089

Albort-Morant, G., & Oghazi, P. (2016). How useful are incubators for new entrepreneurs? *Journal of Business Research, 69*, 2125-2129.http://dx.doi.org/10.1016/j.jbusres.2015.12.019 0148-2963

Al-Mubaraki, H.M. (2014). Incubator successes: Lessons learned from successful incubators towards the twenty-first century. *World Journal of Science, Technology and Sustainable Development, 11(*1), 44-52 .doi:10.1108/WJSSTD-08-2013-0030

Alpenidze, O., Pauceanu, A. M., & Sanyal, S. (2019). Key success factors for business incubators in Europe: An empirical study. Academy of Entrepreneurship Journal, 25(1). ISSN: 1087-9595

Autio, E. (2005). High-expectation entrepreneurship 2005 summary report, *GEM Research Reports*, 2-14. Retrieved from http://www.gemconsortium.org/ docs/download/268

Ayala, C., & Manzano-Garcia, G. (2010). Established business owners' success: Influencing factors. *Journal of Developmental Entrepreneurship, 15*(3), 263-286. Retrieved from http://www.worldscientific.com/doi/pdf/10.1142/ S 1084946710001555

Azizi, S. (2018). The impacts of workers' remittances on human capital and labor supply in Developing countries. *Economic Modelling, 75*, 377-396 http://dx.doi.org/10.1016/j.econmod.20185.07.011

Barba-Sanchez, V., & Atienza-Sahuquillo, C. (2018). Entrepreneurial intention among engineering students: The role of entrepreneurship education. *European Research on Management and Business Economics 24*: 53-61. https://doi.org/10.1016/j.iedeen.2017.04.001

Brown, M., Harrell, M.P., & Regner, W. (2000). Internet Incubators: How to invest in the new economy without becoming an investment company. *The Business Lawyer, 56*(1), 273-287. Retrieved from www.jstor.org/stable/40687977

Brown, R., Mawson, S., Lee, N., & Peterson, L. (2019). Start-up factories, transnational entrepreneurs and entrepreneurial ecosystems: Unpacking the lure of start-up accelerator programmes. *European Planning Studies, 27(5),* 885-904. https://doi.org/10.1080/09654313.2019.1588858

Brzozowski, J., Cucculelli, M., & Surdej, S. (2017). The determinants of transnational entrepreneurship and transnational ties: Dynamics among immigrant entrepreneurs in ict sector in Italy. *International Migration 55*(3), 105-125. http://doi.org/10.1111/imig.12335.

Buckley, P. J., Doh, J. P. & Benischke, M. H. (2017). Towards a renaissance in international business research? Big questions, grand challenges, and the future of IB scholarship. *Journal of International Business Studies, 48*(9), 1045-1064. ISSN 0047-2506 https://doi.org/10.1057/s41267-017-0102-z

Chin, C. (2017). What are the opportunities for ASEAN? Yale Insights. Retrieved from https://insights.som.yale.edu/insights/what-are-the-opportunities-for-asean.

Cozby, P. C. & Bates, S. C. (2015). Methods in behavioral research (12th ed). Boston, MA: McGraw Hill Higher Education.

de Jorge Moreno, J., Laborda Castillo, L., & de Zuani Masere, E. (2010). Firm size and entrepreneurial characteristics: Evidence from the SME sector in argentina. *Journal of Business Economics and Management, 11*(2), 259-282. http://doi.org/l0.3846/ibem.2010.13

Drori, I., Honig, B., & Wright, M. (2009). Transnational entrepreneurship: An emergent field of study. *Entrepreneurship: Theory & Practice*, 1001-1022. https://doi.org/10.1111/j.1540-6520.2009.00332.x

Dunning, J.H. (2005). Making globalization good. Oxford University Press, Oxford.

Eggo, J., Bangake, C., & Semedo, G. (2019). Do remittances spur economic growth? Evidence from developing countries. *The Journal of International Trade & Economic Development, 28(*4), 391-418.https://doi.org./10.1080/09638199.2019.1568522

Elo, M. & Freiling, J. (2015). Transnational entrepreneurship: An introduction to the volume. *American Journal of Entrepreneurship, 8*(2), 1-8. Retrieved from https://www.ceeol.com/search/article-detail?id=306592

Fernandez-Perez, V., Alonso-Garcia, P.E., Fuentes-Fuentes, M.M., & Ariza, L.R. (2013). Business social networks and academics' entrepreneurial intentions. *Industrial Management & Data Systems, 114*(2), 82-93. https://doi.org/10.1108/IMDS-02-2013-0076

Field, A. (2013. Discovering statistics using ibm spss statistics. Sage Publications Ltd.

Frid, C. J., Wyman, D. M., & Coffey, B. (2016). Effects of wealth inequality on entrepreneurship. *Small Business Economics, 47*(4), 895-920 https://doi.org/10.1007/s11187-016-9742-9

Gelaidan, H., & Abdullateef, A. (2017). Entrepreneurial intentions of business students in Malaysia The role of self-confidence, educational and relation support. *Journal of Small Business and Enterprise Development, 24*(1), 54-67 .https://doi.org/10.1108/JSBED-06-2016-0078

Giardino, C., Unterkalmsteiner, M., Paternoster, N., Gorschek, T., & Abrahamsson, P. (2014). What do we know about software development in startups? *IEEE Software, 31*(5), 28-32. https://doi.org/10.1109/MS.2014.129

Henley, A., Contreras, F., Espinosa, J. C., & Barbosa, D. (2017). Entrepreneurial intentions of Colombian business students: Planned behaviour, leadership skills and social capital. *International Journal of Entrepreneurial Behavior & Research, 23*(6), 1017-1032. https://doi.org/10.1108/IJEBR-01-2017-0031

Kakhkharov, J., & Rohde, N. (2019). Remittances and financial development in transition economies. *Empirical Economics*, 1-33 https://doi-org/10.1007/s00181-019-01642-3

Karadeniz, E., & Ozcam, A. (2010). The determinants of growth expectations of the early-stage entrepreneurs (TEA) using the ordinal logistic model (OLM): The case of Turkey. *Economic and Business Review, 72*(1), 61-84. Retrieved from http://www.ebrjoumal.net/ojs/index.php/ebr/article/viewFile/41122

Kim, P.H., & Li, M. (2014.) Injecting demand through spillovers. Foreign direct investment, domestic socio-political conditions, and host-country entrepreneurial activity. *Journal of Business Venturing, 29*(2), 210-231. https://doi.org/10.1016/j.jbusvent.2012.10.004

Klingbeil, C., & Semrau, T. (2017). For whom size matters – the interplay between incubator size, tenant characteristics and tenant growth. *Industry and Innovation, 24*(7), 735-752, https://doi.org/10.1080/13662716.2017.1319802

Lamine, W., Mian, S., Fayolle, A., Wright, M., Klofsten, M., & Etzkowitz, H. (2018). Technology business incubation mechanisms and sustainable regional development. *Journal of Technology Transfer, 43*(5), 1121-1141. https://doi.org/10.1007/s10961-016-9537-9

Lamotte, O., & Colovic, A. (2013). Do demographics influence aggregate entrepreneurship? *Applied Economics Letters, 20*, 1206-1210. http://dx .doi.org/10.1080/13504851.2013.799747

Lévesque, M., & Minniti, M. (2006). The effect of aging on entrepreneurial behavior. *Journal of Business Venturing, 21*, 177-194. http://doi.org/10.1016/j.jbusvent.2005.04.003

Lin, X., & Yang, X. (2017). From human capital externality to entrepreneurial aspiration:  Revisiting the migration-trade linkage. *Journal of World Business, 52*(3), 360-371 https://doi.org/10.1016/j.jwb.2016.11.001

Maier, E. (2016). Supply and demand on crowdlending platforms: Connecting small and  medium-sized enterprise borrowers and consumer investors. *Journal of Retailing and Consumer Services, 33*, 143-153. https://doi.org/10.1016/j.jretconser.2016.08.004

Mas-Verdú, F., Ribeiro-Soriano, D., & Roig-Tierno, N. (2015). Firm survival: The role of incubators and business characteristics. *Journal of Business Research, 68*(4), 793-796 doi.org/10.1016/j.jbusres.2014.11.030

McGowan, E. (2018). Series a, b, c, d and e funding: How it works. Retrieved from https://www.startups.com/library/expert-advice/series-funding-a-b-c-d-e

Menard, S. (2002). Applied logistic regression analysis. Quantitative applications in the social sciences. SAGE Publications.

Nalintippayawong, S., Waiyawatpattarakul, N., & Chotipant, S. (2018). Examining the critical success factors of startup in thailand using structural equation model. *2018 10th International Conference on Information Technology and Electrical Engineering (ICITEE)*, 388-393. doi.org/10.1109/ICITEED.2018.8534854

Ratha, D. (2020). Covid-19 through a migration lens: Policy responses should be inclusive of migrants. Retrieved from https://blogs.worldbank.org/peoplemove/covid-19

Riddle, L., Hrivnak, G., & Nielsen, T. (2010). Transnational diaspora entrepreneurship in emerging markets: Bridging institutional divides. *Journal of International Management,16,* 398-411 doi:10.10.1016/j.intman.2010.09.009

Slimane, F. B., & Rousseau, A. (2020). Crowdlending campaigns for renewable energy: Success factors. *Journal of Cleaner Production, 249*, 1-13 https://doi.org/10.1016/j.jclepro.2019.119330

Tech Collective. (2018). Top startup accelerators in Southeast Asia. Retrieved from https://techcollectivesea.com/2018/08/20/top-startup-accelerators-in-southeast-asia/

Terjesen, S., & Szerb, L. (2008). Dice thrown from the beginning. An empirical investigation of the determinants of firm level growth expectations. *Estudios De Economia, 35(*2), 153-178. http://doi.org/10.4067/SQ718- 52862008000200003

United Nations International migration report. (2017). New York: United Nations, Department of Economic and Social Affairs, Population Division, 2017

Vaaler, P. (2011). Immigrant remittances and the venture investment environment of developing countries. *Journal of International Business Studies, 42*(9), 1121-1149 https://doi.org/10.1057/jibs.2011.36

White, J. L. (2005). Steps in Interpretation of Logistic Regression. Copyright © 2005

World Bank (2017). Migration and Development Brief 27. Washington D.C: World Bank

Yang, T., & Aldrich, H. E. (2017). The liability of newness revisited: Theoretical restatement and empirical testing in emergent organizations. *Social Science Research, 63*, 36-53 https://doi.org/10.1016/j.ssresearch.2016.09.006