



# **The Moderating Effect of Location on Online Business Performance in the Philippines**

**SALCEDO, NATHANIEL C.**

**BALLESTEROS, ARTHUR.**

**MARIE ANTOINETTE L. ROSETE**

[nathaniel.salcedo.comm@ust.edu.ph](mailto:nathaniel.salcedo.comm@ust.edu.ph)

[arthurvincent.ballesteros.comm@ust.edu.ph](mailto:arthurvincent.ballesteros.comm@ust.edu.ph)

[mlrosete@ust.edu.ph](mailto:mlrosete@ust.edu.ph)

Business Economics Department  
College of Commerce and Business Administration  
University of Santo Tomas, Philippines

## **ABSTRACT**

It has been proven that business location greatly affects the performance of traditional businesses. The rise of online businesses was mainly due to their convenience in terms of location and customer proximity. The study aims to determine whether location serves as a moderating factor in the newer online businesses in terms of various determinants. With the prevalence of e-commerce, we would like to determine if these variables still play a factor in choosing an online business location as likewise with traditional businesses. This research demonstrates whether or not an online business location is correlated with business firm size, capital, and internet connection. The results indicate that location does in fact serve as a moderator in the relationship between firm size, starting capital, internet connectivity, and firm performance.

Keywords: E-commerce, Online Business, and Business Performance



## 1. Introduction

It has been proven for a while that a business's location greatly affects its income and overall, its operation. Kumar and Tripathi (2017) Ma and Delios (2013) Additionally, geographical proximity to other companies or businesses is proven to be beneficial. A business in a location near research centers and universities can increase the chances of survival. Also, being close to other businesses is helpful, as it allows for improved information flow and simpler access to various kinds of transportation Mate-Sanchez-Val et al (2018). It was also concluded in Mate-Sanchez-Val (2018) That failed businesses are more likely to be surrounded by other failed businesses.

Businesses in rural areas face a lot of obstacles in order to see their survival chances increased. One of these obstacles is the absence of skilled workers in rural labor markets. It may be a significant challenge for businesses looking to expand or acquire skilled personnel. This shows that either worker mobility is impeding the establishment of small businesses in rural areas, or that the existing workforce in rural areas could benefit from skill development (N Lee, M Cowling, 2015). Lee et al. (2015) regarded the four most significant barriers to success are institutional (regulatory and tax), financial (cash flow), and national-level (economy) considerations. Three of the four concerns have significant geographical diversity. Regulation is seen as a barrier to success by 28.7% of rural businesses, compared to 21.9 percent of semi rural businesses and just 15.0 percent of urban businesses ( $t$ -statistic = 115.1,  $P < 1\%$ ). The economy is a hindrance to 8.0 percent of urban businesses, compared to 7.4 percent of semi rural enterprises and 6.5 percent of rural firms ( $t$ -statistic = 2.53,  $P < 10\%$ ). When it comes to taxation, more urban (8.6%) and semi rural (10.1%) enterprises regard it as a barrier to expansion (compared to 5.8% for rural firms,  $t$ -statistic = 12.59,  $P < 1\%$ ). The issue of financial flow, on the other hand, is rather evenly distributed across spatial classifications. Lee et al. (2015)

E-commerce on the other hand has become more popular with the prevalence of social media. Susenas (2017) Also the rise of the global pandemic gave way to the mass adoption of e-commerce worldwide. Damuri, Fauri, and Rafitrandi (2021) The growth of e-commerce and online stores allows for businesses to thrive without much seller to consumer face to face contact. In Jimenez, Dulce; Valdes, Sade; Salinas, Mariana (2019) study, they concluded that most consumers are getting more accustomed with online



shopping and the purchasing process is getting easier with the passage of time. Also, there are a lot of advantages of e-commerce, such as the creation of new opportunities for businesses and new ways of distribution that can access new customers while expanding to new markets resulting in increased competitiveness. More importantly, the swift response to needs and quicker delivery chains, all of which leads to a reduction in the final product prices and better customer experience.

In Damuri (2020) study it was stated that in general, online firms think that e-commerce has a positive impact on their sales. The percentage of online retail firms who perceive positive impacts from e-commerce is higher than manufacturing firms. This is fairly expected considering that adopting a new sales network is more important for retailers than manufacturers. Additionally, the larger firms tend to see that incorporating e-commerce has boosted their sales. While the ratio is lower, smaller firms also observed that online trading has a positive effect on their sales performance. While there is a hypothesis that online trading has negatively affected non-online business, most of the respondents saw no effect on their sales. Only micro firms identified a negative effect from increased online trading, while medium and large firms saw that the online trend did not impact their sales performance. The result gave an idea that smaller firms are more prone to the negative impacts of disruptive technology than larger firms. Ensuring the adoption of technology among small firms is crucial to keep up with the changes and overall, for their survival

It has been proven that the use of technology itself creates an opportunity for firms to widen their market coverage which results in increasing their number of consumers. Danmuri (2020) In the same study it was found that online firms have a higher proportion of consumers outside Java (Island in Indonesia) compared to offline firms. Of online firms, 70% have consumers outside Java, compared with only 24% of offline firms. Do note that all respondents are from firms located in Java, thus having consumers out of the island can be attributed to having larger market coverage. In addition, the research also aimed to see whether there is a clear association between online sales proportion and the location of firms' consumers outside Java. As all these firms are in Java, they assumed that having an online sales channel will assist them to have more consumers outside Java. In the study they found that there is a positive association between firms' online sales proportion and their share of consumers outside Java. It indicates that businesses that have greater online sales proportion relative to total sales are more likely to



have a better percentage of consumers outside Java. This showed us that e-commerce is a gateway which allows firms to connect to more customers blurring the boundaries of geographical location. The development of rural e-commerce by accessing highly integrated markets through online platforms is expected to bring significant economic advantages, not least inclusive growth, poverty lessening and decreasing inequality. Kong (2019)

E-commerce however isn't all safe from the same issues that traditional businesses face, there are still various factors that cause e-commerce to fail or threaten its sustainability. In Zheng's (2019) research it is stated that shipping companies in China have failed in integrating e-commerce due to the lack of high-quality technicians and management staff that is necessary in integrating e-commerce in traditional shipments. Meanwhile, Pilisuk (2018) concluded that even within Rwanda's business-friendly environment, most start-ups fail within the first three years. Business owners are often experts in their own product or service, but they frequently lack the basic financial skills, business skills, and entrepreneurial mindset to successfully navigate daily challenges and to make sound management decisions. He concluded in his research that the educational system does little to prepare graduates to effectively start or manage a business. Access to finance continues to be a major problem for nearly every young business seeking growth capital. Friends and family rarely have the means to invest in early-stage companies, venture capital is practically non-existent, and bank loans require collateral and offer high-interest rates that are out of reach for most business owners. Gregg and Parthasarathy (2017) came with the same conclusion. In their study they showed that eBay business survival rate is much lower than that for traditional business in the USA with only 65% of the new eBay businesses remaining in business after 2 years; only 33% in 5 years; and after 10 years, only 10% of the new eBay businesses remained in business.

Despite all that, there are still various things to consider in establishing a business especially in the modern world. At the start, most business owners were only concerned with minimizing costs and maximizing profit. As a result, only economic factors such as energy, labor, transport, or construction costs were considered. As globalization intensified and government regulations shifted over time, such as the increase in environmental regulations, taxes, and tariffs while duties decreased, more factors were considered in the discussion of location. Even with these additions, some researchers brought up the gap



between theoretical research and actual practices. More firms indicate that while economic factors are used to eliminate infeasible regions for building facilities, other qualitative factors, such as quality of life and place image, determine the final selection. For firms to make the final decision to locate their facilities in a certain region, the image of the place should match the image of the company and its employees. Dixit (2021)

E-commerce has already been proven to be getting more effective over traditional businesses as time goes by. Luo, Ba, and Zhang (2014), Damuri (2020), Chosin and Ghaffari (2016). With this, we must consider the same criteria and factors tied to traditional businesses especially when tackling business sustainability of online firms. The main goal of the study is to examine the effects of store location when it comes to online businesses or e-commerce. Edwards, Leeb and Ferle (2013) The main factors in mind are, operation, risk, and business sustainability. Business sustainability can be defined as the ability of firms to respond to their short-term financial needs without compromising their (or others') ability to meet their future needs. Bansal & Desjardine (2014)

To determine this, the researchers would be using Minai and Lucky (2011) theory measuring The Moderating Effect of Location on Small Firm Performance: Empirical Evidence. By conducting a correlational analysis followed, we would determine the correlation between store various business determinants and overall profit. Meanwhile, Hierarchical multiple regression would be used to determine the moderating effect between store location and specific areas of business. The data would be collected through a survey to be answered online. The researchers would gather the following variables needed to determine the performance of the business: Business location, starting capital, firm size, net income, and finally technical issues that arise from the online setup.

## **2. Literature Review**

### ***2.1 Traditional Business and online business***



It was concluded in the study of Damuri (2019) that e-commerce is a boost of sales especially for retail firms. The only major issue is the lack of infrastructure needed to sustain the operation which was a huge turning point in 2020 with the rise of the global pandemic. Manning (2020)

## ***2.2 Business Performance***

Various researchers in the field have measured performance differently in the past. Performance have mostly been measured between two main categories; financial and non-financial measures. Some researchers argued that financial measure is the best way to measure performance Murphy (1996) This is mostly due to the ease in which financial performance is measured. Meanwhile others have argued that non-financial measure of performance should be considered more as it is less prone to data manipulation Ittner and Larcker (2003)

The studies and discourse above shows that using only one set of performance measurement may not be adequate enough to measure firm performance, Panigyrakis (2007) claimed in their study that it is crucial to use both financial and non-financial indicators when measuring business performance as it may provide a broader or less bias perspective on performance measurement and thus giving us a deeper context of the issue between the non-financial and financial aspects of entrepreneurial performance (Panigyrakis 2007) As a result, Murphy (1996) proposed that scholars and researchers should always take into consideration numerous financial and non-financial methods of measuring small business performance in order to achieve a more accurate result

**H1: An online business's location does not affect the performance of the business.**

## ***2.3 Online Businesses and location***

In Mate-Sanchez-Val (2018) study, the effect of geographical proximity variables on company failure was analyzed using a spatial probit model. Their findings support spatially co-localized tendencies in two failing businesses. As a result, bankrupt businesses are more likely to be surrounded by other failed businesses. Furthermore, proximity to external economic actors lowers the risk of failure, particularly in the case of logistic centers and industrial estates. In Fauri, and Rafitrandi (2021) he concluded in his book that firms are more likely to concentrate on areas where internet connection is more accessible.



Davis, Fisher, and Whited, (2010) showcased in their studies the effects of agglomeration on per capita consumption growth in different cities. It showcased how the business industry tends to snowball towards larger cities.

**H2: An online business's location does not affect the relationship between online business profit and firm size.**

### ***2.4 Business location and Firm Size***

Tripathi and Kumar (2017) concluded in their study that larger firms tend to place their businesses in smaller cities as smaller cities have lower rent, lower wage rate etc. The study also showed that domestic firms which produce output for the domestic consumer prefer to locate in the large cities in order to reduce transport cost and also proximity to inputs. Meanwhile, firms that prefer the exportation market would rather to locate in the small cities or hinterlands or small towns to reap the advantage of low-cost production through the low land rent, wages etc.

**H3: An online business's location does not affect the relationship between online business profit and starting capital.**

### ***2.5 Business location and starting capital***

A firm with a higher capital is more likely to start their business in larger cities as observed by Tripathi and Kumar (2017) This result is due to the reason that firms with higher capital and money prefer to locate in the large cities to reap the economies of scale. It's also more likely for firms with higher capital to locate

**H4: An online business's location does not affect the relationship between online business profit and internet connection speed.**

### ***2.6 Business Location and Internet Connection***

Business location needs to be considered as it affects the whole operation of the business, in Damuri



(2020) he concluded in his study that firms are more likely to locate in areas in which there's a good reception of internet connection.

##### **H5: An online business's location does not correlate with profit.**

### ***2.7 Business Location and profit***

As stated in the study of Tripathi and Kumar (2017), firms with higher levels of profit can choose to locate in large cities to minimize the possibility of a reduced profit margin because large cities have a higher degree of consumer demand than small ones.

Indarti (2004) also concluded in his study the significance of location in business starting. However, it depends on the type of business. In his case an online computer café was studied and it performed significantly better in places where the demand is much higher, in this case right in front of a school.

### ***2.8 Synthesis***

Panigyrakis (2007) and Murphy (1996) stated that to accurately measure a businesses performance both financial and non-financial measures should be considered. The following studies have proven that business location is highly correlated with firm size, starting capital, technical issues, and profit. The 4 variables should show a correlation towards business location and business performance as per the study of Damuri (2020) Mate-Sanchez-Val (2018) Zheng (2019) Dixit, Clouse, and Turken (2019). While the model of Minai and Lucky (2011) should be able to identify the correlation between firm performance determinants and location using a regression tool.

The 4 variables should show whether the same relationship is true with online businesses.

#### ***2.8.1 Theoretical framework***





The researchers will be using the theory of Minai and Lucky (2011) used to measure the moderating effect of location on small firm performance. In their study it was concluded that there was a significant correlation between business location and business performance.

In this case a Multinomial logistic regression tool would be used to determine the correlation between online business location and overall business performance. Meanwhile a normal linear regression would be used to determine the correlation between online business location and specific areas of business. The following regression model was used since the dependent variable used is categorical.

*Hierarchical multiple regression*

$$Y = aX + bM + cXM$$

Where:

*a* = “main effect” of *X*

*b* = “main effect” of *M*

*c* = interaction.

*Linear regression model*

$$Y = a + bX$$

Where:

X= Profit

Technical issue

Starting capital

Firm size

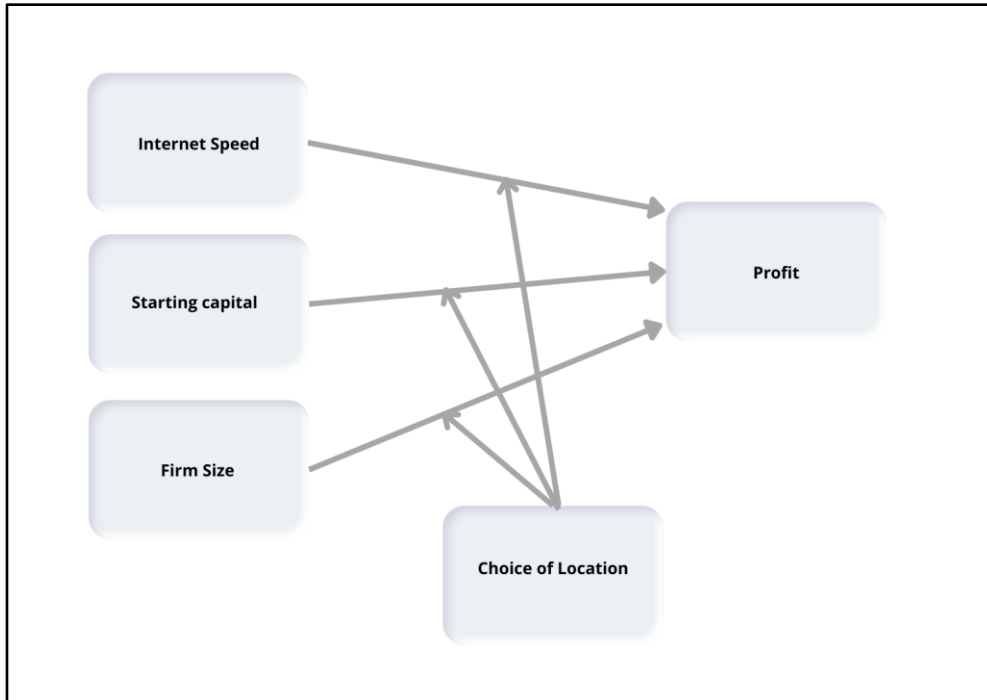
Y= Online business location

a= Slope of the regression line

b= Y-intercept of the regression line



### 2.7.2 Simulacrum



## 3. Research Method

### 3.1 Theory

The researchers aim to measure if location affects the operation of online businesses through common business performance indicators in the country. To determine this the researchers would use the model of Minai and Lucky (2011) focusing on business location and its correlation with firm performance.

To measure this, the researchers would use two tests, a linear regression model to measure the correlation between the individual variables and online business location. The researchers would then use a Hierarchical multiple regression analysis in order to determine if location is a moderator of online and business performance.

Our dependent variable would be profit denoted  $y$  and our independent variables denoted by  $b$  are, firm size, starting capital, internet speed, and business location. Which are common factors related to



business and location as per Mate-Sanchez-Val (2018) Damuri (2020) Tripathi and Kumar (2017) Zheng (2019) Dixit, Clouse, and Turken (2019).

*Cramer's V*

$$\phi_c = \sqrt{\chi^2 N / (k-)}$$

*Hierarchical multiple regression*

$$Y = aX + bM + cXM$$

*Linear Regression*

$$Y = a + bX$$

### **3.2 Sampling**

The research is cross-sectional research with a questionnaire survey approach utilizing a snowball sampling method where entrepreneurs and owners of various online firms in Luzon were selected as the target population.

### **3.3 Data Collection Method**

The Data collection method would be quantitative with a survey questionnaire that would be self-administered by the various online business owners across Luzon. Majority of the respondents would be contacted through E-mail and various social media platforms to inform them about the survey.

### **3.4 Data Analysis Technique**

As stated earlier in the framework, the data gathered would be analyzed by conducting a Hierarchical multiple regression for the overall business performance and a Cramer's V for the individual performance determinants.



**4. Results and discussion**

The researchers aim to measure if location serves as a moderator of the relationship between online businesses and common performance indicators. To determine this the researchers would use the model of Minai and Lucky (2011) focusing on business location and its correlation with firm performance. The following variables that were used were business profit, firm size, starting capital, and internet connectivity speed measured using a likert scale approach. Business location however was measured as a nominal categorical variable divided by regions in Luzon.

**4.1 Descriptive Results**

The researchers have gathered data from 100 respondents and here are the initial results:

Table 4.1.1

Respondent statistics						
		Region	Firm Size	Capital	Income	Internet Speed
N	Valid	100	100	100	100	100
	Missing	0	0	0	0	0
Mean		5.9	1.24	2.53	2.14	3.09
Median		7	1	2	2	3
Mode		8	1	1	1	3
Std. Deviation		2.556	0.622	1.956	1.421	1.902

This table shows the descriptive statistics for the collected data. It contains the mean, median, mode, and standard deviation of the variables.



Table 4.1.2

Frequency Distribution - Region					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Region 2	11	11	11	11
	Region 1	7	7	7	18
	Region 5	3	3	3	21
	Mimaropa	9	9	9	30
	CAR	4	4	4	34
	Region 3	7	7	7	41
	Region 4-A	14	14	14	55
	NCR	45	45	45	100
	Total	100	100	100	

The majority of the respondents are located at NCR, which is 45% of the total respondents. Conversely, Region 5 has the least respondents out of the nine regions in Luzon, which is only 3% of the respondents.

Table 4.1.3

Frequency distribution - Firm Size					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Micro	84	84	84	84
	Small	10	10	10	94
	Medium	4	4	4	98
	Large	2	2	2	100
	Total	100	100	100	

In reference to table 4.1.1, the median for firm size is 1.24 since most of the respondents own Micro businesses with 1-9 employees, accounting for 80% of all respondents. Large businesses only accounted for 2% of the respondents, which is the least frequent.



Table 4.1.4

Frequency distribution -Capital					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20k Below	46	46	46	46
	20k to 50k	18	18	18	64
	50k to 100k	11	11	11	75
	100k to 150k	9	9	9	84
	150k to 200k	2	2	2	86
	200k to 250k	6	6	6	92
	250k above	8	8	8	100
	Total	100	100	100	

Based on Table 4.1.1, the Capital variable has a mean of 2.53. This means that the most frequent responses are 20k below, 20k to 50k, 50k to 100k, and 100k to 150k. Respondents with 20k below capital comprise the largest number with 46% of the respondents while 150k to 200k only represent 2% of the respondents.

Table 4.1.5

Frequency distribution - Income					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20k below	43	43	43	43
	20k to 50k	30	30	30	73
	50k to 100k	12	12	12	85
	100k to 200k	6	6	6	91
	200k to 250k	3	3	3	94
	250k above	6	6	6	100
	Total	100	100	100	



In table 4.1.5, the results show that the mean of profit has a value of 2.14 which dictates that the most frequent responses are 20k below and 20k to 50k. Respondents with 20k below profit comprise the largest number with 43% of the respondents while 200k to 250k only represent 3% of the respondents.

Table 4.1.6

Frequency distribution – Internet Speed					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20mbps below	20	20	20	20
	20mb to 50mb	25	25	25	45
	50mb to 100mb	26	26	26	71
	100mb to 150mb	12	12	12	83
	150mb to 200mb	2	2	2	85
	200mb to 250mb	6	6	6	91
	250mb to 300mb	5	5	5	96
	300mb above	4	4	4	100
	Total	100	100	100	

In reference to table 4.1.6, the median for the internet speed is 3.09 since most of the respondents have 20mbps below, 20MB to 50MB, 50MB to 100MB internet speed, accounting for 80% of all respondents. Businesses with 150MB to 200MB only accounted for 2% of the respondents, which is the least frequent.

4.2 <i>Statistical Analysis</i> Table 4.2.1 Test of collinearity Model		Collinearity Statistics	
		Tolerance	VIF
1	Region	0.986	1.015
	Capital	0.494	2.026
	Internet Speed	0.751	1.332
	Firm Size	0.495	2.02

*Values are all (VIF > 10.0) therefore there's no issue of collinearity*



Table 4.2.3 Test of Validity

Reliability Statistics	
Cronbach's Alpha	N of Items
0.639	5

*Values > 0.6 are considered acceptable therefore the data used are valid*

To begin, a Cramer's V correlation analysis was used in order to determine the relationship between our independent variable as well as our dependent variable. The following results are presented in the table below. All data were run through SPSS Version 28.

Cramer's V was used as all the data are categorical variables.

*1. There is a significant correlation between Income and Firm Size (Cramer's V 0.596,  $p < 0.001$ )*

Table 4.3.1

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	1.033	<.001
	Cramer's V	0.596	<.001
N of Valid Cases		100	





2. There is a significant correlation between Income and Starting Capital (Cramer's  $V$  0.511,  $p < 0.1$ )

Table 4.3.2

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	1.142	<.001
	Cramer's V	0.511	<.001
N of Valid Cases		100	

3. There is a significant correlation between Income and Internet Connection speed (Cramer's  $V$  0.325,  $p < 0.1$ )

Table 4.3.3

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	0.727	0.027
	Cramer's V	0.325	0.027
N of Valid Cases		100	

4. There is no significant correlation between Income and Location (Cramer's  $V$  0.252,  $p > 0.1$ )



Table 4.3.4

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	0.382	0.012
	Cramer's V	0.382	0.012
N of Valid Cases		100	

The results from Tables 4.3.1, 4.3.2, and 4.3.3 shows that starting capital, firm size, and internet connection were all proven to be significantly correlated with the profitability of online businesses. These are all in line with the studies of Sefiani, Davies, and Bown (2016) Lee-Makiyama, H. (2018), Tripathi and Kumar (2017) and Damuri (2020) therefore we reject our null hypothesis.

Larger firms tend to be much more profitable as manpower is directly related to productivity. This allows more flexibility for a business to function efficiently. Capital on the other hand is pretty similar to firm size as capital allows a business with more flexibility on where to invest and generally just have higher profit margins Pagano and Schivardi (2003).

However, amongst the three, internet connectivity had the weakest correlation towards profitability and least significant. This may mean that online businesses aren't strictly hampered by weaker internet connection nor faster internet connectivity guarantees higher profit. As per table 4.3.4, location alone however is found not significantly correlated with profitability therefore we accept the null hypothesis that an online business's location does not correlate with profit. This doesn't follow the findings of Indarti (2004) and Tripathi and Kumar (2017) however it just proves that location alone is not a great predictor of business success.

Following that, a hierarchical multiple regression analysis was conducted using SPSS version 28 to prove and measure whether location serves a moderator on the relationship between the Firm Size, Starting Capital, Internet and firm performance through profitability. Usually, categorical variables should be taken with extra caution when working on a regression model however we are following the philosophies of ordinal approximation of a continuous variable (Johnson & Creech, 1983; Norman, 2010;



Sullivan & Artino, 2013; Zumbo & Zimmerman, 1993) stating that likert or ordinal variables with 5 or more categories may be used as continuous variable without any harm to the analysis.

5. Location moderates the relationship between Firm Size and Profit. ( $r=.732, p<0.1$ )

Table 4.3.5

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				Sig. F Change
					R Square Change	F Change	df1	df2	
1	.716a	0.513	0.508	0.997	0.513	103.208	1	98	<.001
2	.732b	0.536	0.526	0.978	0.023	4.824	1	97	0.03
a Predictors: (Constant), Firm Size									
b Predictors: (Constant), Firm Size, Region									
c Dependent Variable: Income									

6. Location moderates the relationship between Starting Capital and Profit. ( $r=.821, p<0.1$ )

Table 4.3.6

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				Sig. F Change
					R Square Change	F Change	df1	df2	
1	.812a	0.659	0.656	0.834	0.659	189.81	1	98	<.001
2	.821b	0.674	0.667	0.82	0.015	4.344	1	97	0.04
a Predictors: (Constant), Capital									
b Predictors: (Constant), Capital, Region									
c Dependent Variable: Income									

7. Location moderates the relationship between Internet Speed and Profit. ( $r=.425, p<0.1$ )



Table 4.3.7

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.373a	0.139	0.13	1.326	0.139	15.8	1	98	<.001
2	.425b	0.181	0.164	1.3	0.042	4.964	1	97	0.028
a Predictors: (Constant), Internet Speed									
b Predictors: (Constant), Internet Speed, Region									
c Dependent Variable: Income									

The study hypothesized that location would serve as a moderator between the relationship between common traditional determinants and profit, proving that location is still relevant when determining an online business's location.

The results showed that location does in fact moderate the relationship between firm performance or profit and firm size, capital, and internet connectivity speed. Therefore we reject the null hypothesis of location not being a significant factor in terms of online business performance. This is consistent with the previous studies conducted towards traditional business models rather than online.

First, the results between firm size and location in table 4.3.5 proves that location still serves as a factor when it comes to determining online businesses despite various firm sizes. Therefore, the study of Tripathi and Kumar (2017) of larger firms placing their business in smaller cities while firms which produce output for the domestic consumer prefer to locate in the large cities can be used in the study of not just traditional firms but also firms that engage in online ventures. This also reaffirms the study by Lanzolla & Frankort, H. T. W. (2016) that concludes customers are way more likely to buy in businesses with higher perceived institutional quality, and geographic location is one of the most credible signals for seller behavior.

This result shows that firm owners and entrepreneurs should also take into consideration location as they do with firm size when it comes to growing their respective online businesses. Similarly, the second result



in table 4.3.6 also follows the same trend with location serving as a moderating factor between starting capital and profit. This is once again in line with previous studies that highlights firms with larger capital locating in larger cities in order to reap the economies of scale. Taking firm size and capital into consideration, Zheng (2019) in his studies also concluded that firms who have a proper modern system of digitalization and shipping methods tend to be more successful in ecommerce and shipping are usually tied with a business location.

The final result in table 4.3.7 shows that location also moderates the relationship between internet connectivity speed as well as firm performance. With a much higher significance compared to starting capital and firm size. This reinforces the idea that internet connectivity is heavily dependent on location. This is in line with Damuri's (2020) study stating that firms are more likely to locate in areas in which there's a good reception of internet connection.

However, as majority of respondents were from NCR, It may also be the fact that business owners do not choose the places with the lowest costs for business activity, but those that both would ensure development of their businesses and ease of living for their families, which in this case living in the NCR. Gierusz & Pęczek, (2017). Additionally, despite the reduction of physical interaction between customers and sellers in the world of online business, Edwards, S. M., Lee, J. K., & Ferle, C. L. (2009) believes that companies are using location to build up trust and increase customer relationships. In their study they concluded that the implication of geographical proximity alone can influence the customers into viewing your products or services more favorably.

## 5.1 Summary

The research focuses on finding the correlation between the online business location and the firm size, profit, capital, and internet speed to determine how it affects the entrepreneurs' decision in choosing the online business location. The study utilized a questionnaire survey approach and a snowball sampling method, with the entrepreneurs and owners of DTI-registered online businesses across Luzon selected as the study's target population. The survey tool asks about the location, capital, average monthly profit, and internet speed of online business owners. A total of 100 respondents were gathered by contacting business owners through social media platforms and E-mail. These collected data are then analyzed using Cramer's V to determine the relationship between the dependent and independent variables. The results



show that there is a significant relationship between profit and firm size ( $p < 0.001$ ), profit and capital ( $p < 0.001$ ), and finally, profit and internet connection ( $p < 0.05$ ) which shows that it has the least correlation among the variables. Hierarchical multiple regression is then administered to measure the moderating effect of location on the relationship between firm size, profit, capital, and internet speed. The results show that location moderates the relationship between Firm size and profit ( $r = .732$ ,  $p < 0.05$ ), Starting Capital and Profit. ( $r = .821$ ,  $p < 0.05$ ), and Internet Speed and Profit. ( $r = .425$ ,  $p < 0.05$ )

## 5.2 Conclusion

This research follows the model of Minai and Lucky (2011) in order to determine whether online businesses follow the characteristics of traditional firms when it comes to its relationship with location. Attention was focused specifically on firm size and capital which are recorded through various studies and literature that has a major effect in the growth of entrepreneurship and business in general. Internet connection was added as it is the major driving factor for the boom of the online business industry we know today.

Within the hypotheses established in the study, the following conclusions were drawn. First, despite the biggest benefit of an online business is its ability to function in remote locations, business location should still be considered by online business owners as it is still significantly related with overall business performance. Furthermore, out of all the determinants' location served as the biggest moderator when it comes to internet connectivity proving the importance of location on businesses that relies heavily on internet connection.

## 5.3 Limitations and Suggestions for future study

Edward Deming once said that without data then you're just a person with an opinion, to which I agree. The biggest hurdle our research faced was the small sample size of 100 with only a confidence level of 90%. Additionally, the research was fairly limited in Luzon where online businesses are more developed which in return faces fewer hurdles. The research is limited in these aspects and if carried out again with a larger sample size and a wider location we'll get more accurate results. Additionally, there



are still variables the research did not cover such as the expenses or costs in the location (rent costs, shipping costs, taxes), which are some possible factors that may affect the choice of location.

#### 5.4 Policy Implications

These past couple of years the issue of a weakening local business industry arose mainly due to the collapse of the economy through the pandemic. This emphasized the importance of local businesses during times of economic crisis, especially since traditional businesses fail to function properly during these times. With these in mind, online businesses rose in popularity due to its ease of access and its ability to be more flexible than traditional business means. Our research helps in aiding business owners in understanding the factors that make an online business successful. Just recently the Department of Trade and Industry has signed a memorandum of understanding with the International Labor Organization for the execution of digital entrepreneurship and productivity training for MSME's that focuses on the digitalization of these small businesses. These moves from the government along with the continuous increase of online business popularity just reinforces the belief that online businesses are here to stay and may one day overtake the traditional way of doing business. Lastly, the study is also a contribution to location theory with majority of the studies being conducted studying traditional business, additional information regarding modern firms provides a great avenue for future research.

#### References

- Luo, Ba, & Zhang. (2012). The effectiveness of online shopping characteristics and well-designed websites on satisfaction. *MIS Quarterly*, 36(4), 1131.
- Damuri, Y. R. (2020). An Overview of E-commerce Business and Consumers in Indonesia. *E-commerce in Indonesia: The rise of online commerce and its impact on firms' performance and consumers*, 8-14.
- Lee-Makiyama, H. (2018). E-Commerce and Digital Trade. *Potential Benefits of an Australia-EU Free Trade Agreement: Key Issues and Options*, 211-224.
- Damuri, Y. R., Fauri, A. & Rafitrandi, D. (2021) E-Commerce Development and Regulation in Indonesia. *Centre for Strategic and International Studies*
- Kong, S. T. (2019). E-commerce development in rural China. *The Chinese Economic Transition: Views economists*, 129-142.



Dekker, B. & Okano-Heijmans, M. (2020). Business: e-commerce, the platform economy and digital payments. *Europe's Digital Decade?: Navigating the global battle for digital supremacy*, 15-24.

*Studies*, 44(5), 521–544. Martyniuk-Pęczek, J., Martyniuk, O., GIERUSZ, A. & Pęczek, G. (2017) Determinants of SME location in a suburban area: Evidence from the Gdańsk–Gdynia–Sopot metropolitan area, 28(1), 122-134.

Tripathi, S. & Kumar, S. (2017) Determinants of firm location choice in large cities in India: A binary logit model analysis. *Theoretical and Empirical Researches in Urban Management*, 12(3), 45-62.

Schotter, A., & Beamish, P. W. (2013). The hassle factor: An explanation for managerial location shunning. *Journal of International Business*. Accessed March 4<sup>th</sup>, 2022, retrieved from <https://www.jstor.org/stable/23434160>.

Bowd, K. (2016). Social media and news media: Building new publics or fragmenting audiences?. *Making Publics, Making Places*, 129-144.

Aslam, N. S. & Cheng, Tao. (2018). Smart Card Data and Human Mobility. *Consumer Data Research*, 110-119.

Pilisuk, J. (2018) Inkomoko: creating sustainable businesses in Rwanda. *Forest business incubation: Towards sustainable forest and farm producer organisation (FFPO) businesses that ensure climate resilient landscapes*, 111-126.

Damuri Y. S. (2020). How E-commerce Affects Indonesian Business: Findings from the Business Survey. E-commerce in indonesia: the rise of online commerce and its impact on firms' performance and consumers, 16-24.

Lanzolla, G., & Frankort, H. T. W. (2016). The Online Shadow of Offline Signals: Which Sellers Get Contacted in Online B2B Marketplaces? *Academy of Management Journal*, 59(1), 207–231.

Sridhar, S. & Srinivasan, R. (2012). Social Influence Effects in Online Product Ratings. *Journal of Marketing*, 70-88. Accessed March 4<sup>th</sup>, 2022, retrieved from [https://www.researchgate.net/publication/259145974\\_Social\\_Influence\\_Effects\\_in\\_Online\\_Product\\_Ratings](https://www.researchgate.net/publication/259145974_Social_Influence_Effects_in_Online_Product_Ratings).

Lyubareva, I., Benghozi, P. J., & Fidele, T. (2014). Online Business Models in Creative Industries. *International Studies of Management & Organization*, 44(4), 43–62.

WHITAKER, J., NEW, J. R., & IRELAND, R. D. (2016). MOOCs and the Online Delivery of Business Education What's new? What's not? What now? *Academy of Management Learning & Education*, 15(2), 345–365.

Lesser, J. A., & Hughes, M. A. (1986). The Generalizability of Psychographic Market Segments across Geographic Locations. *Journal of Marketing*, 50(1), 18–27. Accessed March 4<sup>th</sup>, 2022, retrieved from <https://journals.sagepub.com/doi/abs/10.1177/002224298605000102>.

Einav, L., Levin, J., Popov, I., & Sundaresan, N. (2014). Growth, Adoption, and Use of Mobile E-Commerce. *The American Economic Review*, 104(5), 489–494.





Wang, C. C., Zhang, T., & Song, Z. (2019). E-Commerce Adoption and the Dynamics of the SMEs Cluster: Evidence from Zhili Children's Garment Town, China. *China Review*, 19(4), 125–150.

Zapata, S. D., Carpio, C. E., Isengildina-Massa, O., & Lamie, R. D. (2013). The Economic Impact of Services Provided by an Electronic Trade Platform: The Case of MarketMaker. *Journal of Agricultural and Resource Economics*, 38(3), 359–378. 2. Accessed March 5<sup>th</sup>, 2022, retrieved from <https://www.jstor.org/stable/44131302>.

Moeti, M. N., Mokwena, S. N., & Malebana, D. D. (2021). The acceptance and use of online shopping in Limpopo province. *SA Journal of Information Management*, 23(1).

Katta, R. M. R., & Patro, C. S. (2017b). Influence of Perceived Benefits on Consumers' Online Purchase Behaviour. *International Journal of Sociotechnology and Knowledge Development*, 9(3), 38–64. Accessed March 5<sup>th</sup>, 2022, retrieved from [https://www.researchgate.net/publication/322781531\\_Influence\\_of\\_Perceived\\_Benefits\\_on\\_Consumers%27\\_Online\\_Purchase\\_Behaviour\\_An\\_Empirical\\_Study](https://www.researchgate.net/publication/322781531_Influence_of_Perceived_Benefits_on_Consumers%27_Online_Purchase_Behaviour_An_Empirical_Study).

Clarke, G., Thompson, C., & Birkin, M. (2015). The emerging geography of e-commerce in British retailing. *Regional Studies, Regional Science*, 2(1), 371–391.

Wagner, G., Schramm-Klein, H., & Schu, M. (2016). Determinants and Moderators of Consumers' Cross-Border Online Shopping Intentions. *Marketing: ZFP – Journal of Research and Management*, 38(4), 214–227. Accessed March 5<sup>th</sup>, 2022, retrieved from <https://www.jstor.org/stable/26426827>.

S. Brima, A., & Sesay, B. (2019b). Barriers to E-Commerce Adoption among SMEs in Sierra Leone: The Moderating Role of Geographical Location. *International Journal of Science and Management Studies (IJSMS)*, 1–12. Accessed March 5<sup>th</sup>, 2022, <https://www.ijmsjournal.org/ijms-v2i1p101.html>.

Edwards, S. M., Lee, J. K., & Ferle, C. L. (2009). Does Place Matter When Shopping Online? Perceptions of Similarity and Familiarity as Indicators of Psychological Distance. *Journal of Interactive Advertising*, 10(1), 35–50. Accessed March 6<sup>th</sup>, 2022, retrieved from <https://www.tandfonline.com/doi/abs/10.1080/15252019.2009.10722161>.

Bi, R., Davison, R. M., & Smyrnios, K. X. (2016). E-business and fast growth SMEs. *Small Business Economics*, 48(3), 559–576.

Gregg, D., & Parthasarathy, M. (2017). Factors affecting the long-term survival of eBay ventures: a longitudinal study. *Small Business Economics*, 49(2), 405–419.

Choshin, M., & Ghaffari, A. (2017). An investigation of the impact of effective factors on the success of e-commerce in small- and medium-sized companies. *Computers in Human Behavior*, 66, 67–74.

Al-Bakri, A. A., & Katsiolouides, M. I. (2015). The factors affecting e-commerce adoption by Jordanian SMEs. *Management Research Review*, 38(7), 726–749.

Zhao, X., Zhao, K., & Deng, J. (2018). Geography Still Matters: Examine the Role of Location in Online Markets for Foreign Branded Products. *Decision Sciences*, 50(2), 285–310.



Maté-Sánchez-Val, M., López-Hernandez, F., & Rodríguez Fuentes, C. C. (2018). Geographical factors and business failure: An empirical study from the Madrid metropolitan area. *Economic Modelling*, 74, 275–283.

Zheng, D., Yang, W., & Wang, D. (2019). E-commerce, Collaborative Innovation Capability and Performance: An Empirical Study of Shipping Companies. *Journal of Coastal Research*, 392–397. Accessed March 7<sup>th</sup>, 2022, retrieved from <https://www.jstor.org/stable/26853971>.

Ma, X., Delios, A., & Lau, C. M. (2013). Beijing or Shanghai? The strategic location choice of large MNEs' host-country headquarters in China. *Journal of International Business Studies*, 44(9), 953–961. Accessed March 7<sup>th</sup>, 2022, retrieved from <https://ideas.repec.org/a/pal/jintbs/v44y2013i9p953-961.html>.

Hsiao, L., & Chen, Y. J. (2012). The perils of selling online: Manufacturer competition, channel conflict, and consumer preferences. *Marketing Letters*, 24(3), 277–292.

Dixit, A., Clouse, C., & Turken, N. (2019) Strategic Business Location Decisions: Importance of Economic Factors and Place Image. *Rutgers Business Review*, 4(1), 73-91.

MANNING, R. A. (2020). Trade and Financial Fragmentation: New Challenges to Global Stability. Atlantic Council.

Chapple, K. (2016). Income Inequality and Urban Displacement. *New Labor Forum*, 26(1), 84–93.

Zhu, F., & Xiaoquan (Michael) Zhang. (2010). Impact of Online Consumer Reviews on Sales: The Moderating Role of Product and Consumer Characteristics. *Journal of Marketing*, 74(2), 133–148. Accessed March 10<sup>th</sup>, 2022, retrieved from <https://journals.sagepub.com/doi/10.1509/jm.74.2.133>

Bansal, P., & DesJardine, M. R. (2014). Business sustainability: It is about time. *Strategic Organization*, 12(1), 70–78.

Jimenez, Dulce, Valdes, Sade, & Salinas, Mariana. (2019). Popularity Comparison between E-Commerce and Traditional Retail Business. *International Journal of Technology for Business (IJTB)*, 1(1), 10–16. Accessed March 10<sup>th</sup>, 2022, retrieved from <https://www.econstor.eu/bitstream/10419/194866/1/19107-78060-1-10-20190316.pdf>.

Goeman, J. J., & le Cessie, S. (2006). A Goodness-of-Fit Test for Multinomial Logistic Regression. *Biometrics*, 62(4), 980–985.

Arrfelt, M., Wiseman, R. M., McNamara, G., & Hult, G. T. M. (2014). Examining a key corporate role: The influence of capital allocation competency on business unit performance. *Strategic Management Journal*, 36(7), 1017–1034. Accessed March 10<sup>th</sup>, 2022, retrieved from <https://online.library.wiley.com/doi/abs/10.1002/smj.2264>.

Menard, S. (2011). Standards for Standardized Logistic Regression Coefficients. *Social Forces*, 89(4), 1409–1428.



Kirby-Hawkins, E., Birkin, M., & Clarke, G. (2018). An investigation into the geography of corporate e-commerce sales in the UK grocery market. *Environment and Planning B: Urban Analytics and City Science*, 46(6), 1148–1164.

Chen, Q., & Zhang, N. (2015). Does E-Commerce Provide a Sustained Competitive Advantage? An Investigation of Survival and Sustainability in Growth-Oriented Enterprises. *Sustainability*, 7(2), 1411–1428.

Sefiani, Y., Davies, B., & Bown, R. (2016). The perceptual effects of location on the performance of small businesses.

Chin, J. T. (2020). Location Choice of New Business Establishments: Understanding the Local Context and Neighborhood Conditions in the United States. *Sustainability*, 12(2), 501.

Indarti, N. (2004). Business Location and Success: The Case of Internet Café Business in Indonesia. *Gadjah Mada International Journal of Business*, 6(2), 171.

Hsu, W. (2012). Central Place Theory and City Size Distribution. *The Economic Journal*, 122(563), 903–932. Accessed March 12<sup>a</sup>, 2022, retrieved from <https://online.library.wiley.com/doi/abs/10.1111/j.1468-0297.2012.02518.x>.

Goerzen, A., Asmussen, C. G., & Nielsen, B. B. (2013). Global cities and multinational enterprise location strategy. *Journal of International Business Studies*, 44(5), 427–450. Accessed March 12<sup>a</sup>, 2022, retrieved from <https://www.jstor.org/stable/23434156>

Macroeconomic Implications of Agglomeration. (2014). *Econometrica*, 82(2), 731–764.

Sobri Minai, M., & Lucky, E. O. I. (2011). The Moderating Effect of Location on Small Firm Performance: Empirical Evidence. *International Journal of Business and Management*, 6(10). Accessed March 12<sup>a</sup>, 2022, retrieved from [https://www.researchgate.net/publication/266869083\\_The\\_Moderating\\_Effect\\_of\\_Location\\_on\\_Small\\_Firm\\_Performance\\_Empirical\\_Evidence](https://www.researchgate.net/publication/266869083_The_Moderating_Effect_of_Location_on_Small_Firm_Performance_Empirical_Evidence)

Murphy, G. B., Trailer, J. W., & Hill, R. C. (1996). Measuring performance in entrepreneurship research. *Journal of Business Research*, 36(1), 15–23. Accessed March 12<sup>a</sup>, 2022, retrieved from <https://www.sciencedirect.com/science/article/abs/pii/014829639500159X>

Panigyrakis, G. G., & Theodoridis, P. K. (2007). Market orientation and performance: An empirical investigation in the retail industry in Greece. *Journal of Retailing and Consumer Services*, 14(2), 137–149. Accessed March 14<sup>a</sup>, 2022, retrieved from <https://www.sciencedirect.com/science/article/abs/pii/S0969698906000348>

Ittner, C. D. and D. F. Larcker (2003). Coming Up Short on Nonfinancial Performance Measurement. *Harvard Business Review*, 88-95.

Department of Trade and Industry. (2022, October 20<sup>a</sup>). *MSME Statistics*. Department of Trade and Industry Philippines. <https://www.dti.gov.ph/resources/msme-statistics>.

*More than 1.08 million Establishments Operated in 2021 which Generated Total Employment of 8.57 million (2021 Updating of the List of Establishments Preliminary Results) | Philippine Statistics*



Authority. (n.d.-b). Accessed October 10<sup>th</sup>, 2022, retrieved from <https://psa.gov.ph/content/more-108-million-establishments-operated-2021-which-generated-total-employment-857-million>.

*Urban Barangays Philippines Based 2010*. (n.d.). Philippine Statistics Authority. Accessed October 13<sup>th</sup>, 2022, retrieved from <https://psa.gov.ph/content/urban-barangays-philippines-based-2010-cph>.

*Pearson Correlation Coefficient - Quick Introduction*. (n.d.). Accessed October 19<sup>th</sup>, 2022, retrieved from <https://www.spss-tutorials.com/pearson-correlation-coefficient>.

*How to perform a moderator analysis with a dichotomous moderator variable in SPSS Statistics | Laerd Statistics*. (n.d.). Accessed October 19<sup>th</sup>, 2022, retrieved from <https://statistics.laerd.com/spss-tutorials/dichotomous-moderator-analysis-using-spss-statistics.php>

Statistics Solutions. (2022, June 21<sup>st</sup>). *Can an Ordinal Likert Scale be a Continuous Variable?* Accessed October 19<sup>th</sup>, 2022, retrieved from <https://www.statisticssolutions.com/can-an-ordinal-likert-scale-be-a-continuous-variable>.

Robitzsch, A. (2020). *Why Ordinal Variables Can (Almost) Always Be Treated as Continuous Variables: Clarifying Assumptions of Robust Continuous and Ordinal Factor Analysis Estimation Methods*. Frontiers. Accessed October 19<sup>th</sup>, 2022, retrieved from <https://www.frontiersin.org/articles/10.3389/feduc.2020.589965/full>.

Johnson, D. R., & Creech, J. C. (1983). Ordinal Measures in Multiple Indicator Models: A Simulation Study of Categorization Error. *American Sociological Review*, 48(3), 398.

Talavera, C. (2022, November 12). *DTI, ILO sign MOU for MSME training*. Philstar.com.

Van den Brink, W.P. & Koele, P. (2002). *Statistiek, deel 3* [Statistics, part 3]. Amsterdam: Boom.