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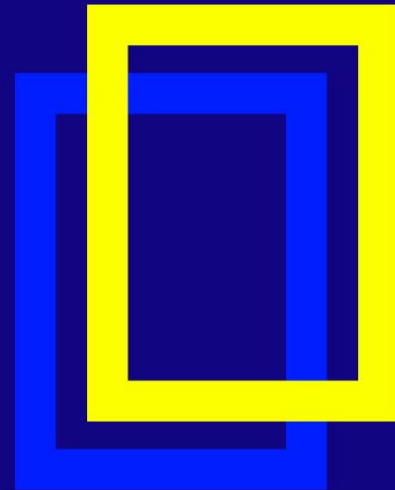
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Center for Industry,
SME and Business Competition Studies
Trisakti University, Indonesia



Sustainable Development Management
PhD Program
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Exploratory Study on Personal Finance in the Context of COVID-19

Deyanira Bernal-Domínguez

*Facultad de Contaduría y Administración; Universidad Autónoma de Sinaloa Culiacán,
Sinaloa, México*

Email: deyanira2673@hotmail.com

José G. Vargas-Hernández

*University Center for economic and Managerial Sciences. University of Guadalajara. Zapopan,
Jalisco, 45100, México*

Email: josevargas@cucea.udg.mx

Abstract

The world is currently experiencing a dramatic crisis that has not yet reached bottom. Only in Mexico in the second quarter of 2020 there was a drop in the Gross Domestic Product of -18.9% compared to the same quarter of 2019. Derived from the economic effects of the pandemic Covid-19 among other factors. In this context, the objective is to identify types of personal expenses in households located in Culiacán, Sinaloa, Mexico as of July 15, 2020, for which an exploratory study was carried out; 488 surveys with 48 items were applied electronically. The main results were that most of the respondents' budget, spend according to their income, have had no problem paying their bank loans on time, would consider a fund for future contingencies, have not purchased health insurance, have not bought a computer or cell phone among other issues analyzed. The limitations were that the surveys were applied to the social network contacts of the person in charge of this study. The main findings are oriented to the fact that the studied population has not acquired additional medical insurance despite the pandemic. It is also concluded that the population under study has become aware of having savings for contingency funds and that digital life still shows resistance in making personal financial decisions.

Keywords: personal finances, family budget, personal expenses, financial education.

JEL codes: D14, D15, E32

Introduction

The present investigation arises from the need to know how spending is being oriented in the families of Culiacán, Sinaloa, Mexico, in the current macroeconomic context, which is not positive. The annual percentage variation in the first quarter 2020 in the United Mexican States was -1.28% and in Sinaloa it was -0.67%. Likewise, the quarterly indicator of state economic activity, base 2013, for Sinaloa is the percentage variation compared to the previous quarter of -0.2% and the percentage variation compared to the same quarter

of the previous year is of -0.9%. Then, Mexico has had the worst drop in the Gross Domestic Product in the second quarter of 2020, at -18.9% compared to the quarter of the previous year, comprising a drop in secondary activities of -26%, tertiary 15.6% and primary -0.3%, this, according to data published by the National Institute of Statistics and Geography (INEGI, 2020).

In relation to the economic effects of Covid-19, based on the survey on the expectations of specialists in private sector economics in June 2020 published by the Bank of Mexico, annual GDP growth is expected by 2020 be -8.8. %, and for 2021 of 2.80%. Regarding the behavior of household income and expenditure published in 2018 in the National Survey of Household Income and Expenditure (ENIGH), of the INEGI, they show that in Mexico the average quarterly current income per household is higher than the expenditure quarterly average current, being 49,610 pesos and 31,913 pesos, respectively.

Likewise, in Sinaloa, the income is 55,474 pesos and the expense is 32,643. In addition, according to data from the ENIGH in Mexico as well as in Sinaloa, where the most is spent on food, beverages, and tobacco, followed by transportation, acquisition, maintenance, accessories and services for vehicles, communications, later education services, educational articles, entertainment items and other entertainment expenses. The item of expenditure that is spent the least is in health.

Thus, the objective of this research is to identify types of personal expenses in households located in Culiacán, Sinaloa, Mexico as of July 15, 2020.

Literature Review

Finance is defined as the art and science of managing scarce financial resources, by individuals or legal entities with the objective of making decisions about income

generation and application of cash expenses; and the percentage of expenses with respect to their income, the percentage of savings, and investment, framed these in the principle of maximization of wealth. Likewise, the purpose of personal finances is to achieve the well-being of the individual and for companies it is the generation of profits, how they are applied in the same business or if they are distributed among the partners. Finance management is mainly directed to the analysis and control of cash flows, considering the inflows and outflows of money, to generate solvency and face credit obligations and acquire assets to meet the established goals (Gilman & Sutter, 2016).

The purpose of personal finances is to analyze weekly, biweekly, or monthly consumption habits that allows establishing an action plan on these habits according to the priorities that are been set up. This is achieved with a “budget that determines how much you have and how much you can spend and save while maintaining balance” (Rodríguez-Raga, 2017, p. 7). Personal finances are also known as family finances, that is, it deals with the way in which money is earned to acquire their assets, how they save and interact in the financial system. The purpose is to support families to achieve financial security, some contextual issues are financial education, ability, and well-being. (Dew, 2016). For Chiodi in 2020, he asserts that what can be more controlled in personal finances are the outflows of money or expenses, compared to the inflows of cash. He recommends that each spending decision be taken long enough to evaluate.

An analysis of the state of the art on personal finance was carried out by López-García in 2016. The main finding was that the most relevant topic is the budget, this is the basis of adequate personal financial management. This tool makes it possible to determine the financial situation in each time, plan and manage the strategies to achieve compliance and define the control and evaluation mechanisms.

It is worth mentioning that Figueroa-Delgado (2009) also proposes that a budget be made of all income and monthly expenses, so as not to spend more than necessary. First, it is necessary to identify where the income comes from and what it is spent on. Usually, the income in a family is wages, pension or retirement payments, interest or dividends and others. Expenses can be fixed or variable expenses. The former can be rent, mortgage, taxes, insurance, childcare, elderly care, car payments, loans. Variable expenses for example are savings, utilities, food, transportation, gasoline, car maintenance, education, personal expenses, and entertainment. (p. 137).

Likewise, personal financial planning for Rojas-López, et al. (2017), deals with a dynamic process of activities oriented to action plans to satisfy currently and future needs of the individual. Its components are asset and investment management, indebtedness, cash income and expenses, commodities and cash management, risk management and insurance, tax and retirement, and succession. The budget consists of listing the income and expenses in a period, allowing to have control of expenses, identify potential problems before their occurrence and that they become unmanageable, adequately plan the future and thus be able to achieve personal goals of short, medium, and long term. All this is achieved with a budget of expenses lower than income and a rational management of debts, which allows to live with greater flexibility and peace of mind. Although savings are not really an expense, they play a central role in budgeting (Guthrie & Nicholls, 2015).

A key aspect is to have control of expenses, which can be divided into mandatory and unnecessary. The first correspond to those necessary to be able to lead a normal life, among which are the payment of the house (mortgage or rent), food, public services, transport, social security, and cleaning supplies. The latter are related to whims and cravings, which, although we should not completely avoid them, if it is necessary to have control over them, cited by (Villada, et al., 2018, p. 44). Thus, the financial statement on cash flow is another that can be

applied in personal finance. A cash flow is the variation and cash equivalent, which results in the changes between increases and decreases in operating, investment, and financing activities (Duque-Sánchez, 2015, p. 74). It should be noted that this cash flow applied in organizations can be transferred to a family, for example the variations are the increases and decreases of investments or assets such as houses, land, cars, as well as financing or debts acquired for these investments.

In relation to operational activities, they are weekly, biweekly, or monthly expenses in relation to food, clothing, security, gasoline, water services, electricity, telephone, among others. Some other relevant personal finance topics according to Zapata-Lambraño (2020) are, first of all, thinking about personal goals that involve the management of financial resources, defining savings objectives, not falling into misleading or flashy offers, education and financial advice are essential, when making a financial decision think it over carefully, keep the money in a safe place until you know what will be done, future forecasts, do not make emotional panic purchases, define goals and meet them, do not be influenced by anyone outside on financial decisions, manage the cash on a budget, don't lend money, don't buy brands, and take responsibility for all financial decisions.

The topic of personal finance is underdeveloped in academia and therefore in scientific research. However, there are a variety of blogs and applications that can be useful when making decisions, among them, for example, they are published in CONDUSEF (National Council of Users of financial services) in the case of Mexico. Likewise, an investigation was carried out by Hoffmann, & Otteby, in 2017, who found that the use of blogs could be a positive alternative of financial education for advice on personal finances and efficient decision-making.

Finally, it should be mentioned that in relation to how to make decisions in pandemic contexts such as the current one, Amat (2020), affirms in his work that the measures when in a crisis, is to rescue people, companies, and sectors most affected and vulnerable; recognize the

strengths of the staff and above all efficiently manage the cash flow and profit margin; This has an impact on economic reactivation and job creation.

Materials and Methods

The study presented is exploratory, on how they decided on their personal finances in this context of the covid-19 pandemic. A survey was applied using Google forms, shared through social networks to the contacts of the person in charge of this study, and it was addressed to heads of household from June 29 to July 15, 2020. The instrument consisted of 48 research variables that were related to some elements of personal finances assumed as family expenses. It is presented in Table 1 the questions that were applied with the number of the respective variable.

Table 1. Variables and Items of the Survey

V	Items	V	Items
	Sex	v24	Have you paid your car insurance in a timely manner?
	Age	v25	Do you think the government is doing what is necessary to face this health crisis?
v1	Do you budget for expenses in your home?	v26	During confinement at home, did you, or your spouse, require medical services?
v2	Is the expense budget according to your income?	v27	Have you had the need to contract a new loan in a banking institution?
v3	Do you think you spend more than you earn per month?	v28	Have you had the need to take out a new loan at a pawn shop?
v4	Do you maintain or keep a fund of money for household expenses contingencies?	v29	Have you bought any computers or accessories during home confinement?
v5	After this confinement experience, do you think that from now on you would consider saving money for a contingency fund?	v30	Have you bought any cell phones or accessories during home confinement?
v6	Do you have a retirement and retirement savings fund?	v31	Did you buy medicines as a reserve during the quarantine?
v7	Have you reduced your personal care expenses?	v32	Did you buy food as a reserve during the quarantine?
v8	Have you increased cleaning and hygiene expenses at home?	v33	Have you paid for your water, electricity and gas services, in a timely manner during the quarantine?
v9	Have you ever needed to use your bank credit card more often?	v34	Have you paid for television, landline and cell phone services, in a timely manner during the quarantine?
v10	Have you bought non-essential products recently?	v35	Have you taken advantage of vacation package deals to travel soon?

V	Items	V	Items
v11	Do your children study in private schools or colleges?	v36	Have you purchased non-essential products and / or services online?
v12	Have you complied with the tuition payment in a timely manner during confinement?	v37	Do you work from home?
v13	Do you currently pay a credit for the purchase of a car for personal use?	v38	How often do you buy food at restaurants?
v14	If the previous question is yes, have you been behind in payments?	v39	Do you usually buy your food at the supermarket?
v15	Have you been busy delaying the maintenance service for your car due to lack of money during this period of confinement?	v40	What time do you go to the supermarket?
v16	Have you negotiated with the banking institutions about any grace period support to pay your credit cards or commercial loans?	v41	What day of the week do you go to the supermarket?
v17	Have you covered the monthly payments of your credits in a timely manner?	v42	Do you make the purchase in the supermarket by attending a list of necessary items at home that you previously make?
v18	The house where you live is: own, rented or loaned?	v43	That is, do you carry your shopping list?
v19	Do you pay a mortgage on your house?	v44	According to your buying habits, how do you make your decisions?
v20	Have you had trouble paying the amount of your mortgage or rent in the last three months?	v45	Do you buy all your food at the supermarket (Walmart, Ley, Soriana, others)?
v21	Have you purchased any major medical insurance during this stay-at-home period?	v46	Do you buy your meat and dairy at local butchers?
v22	Before quarantine, did you have any insurance for major medical expenses?	v47	Do you buy vegetables and fruits, in greengrocers at the market or in small stores?
v23	Have you paid your insurance for major medical expenses in a timely manner?	V48	What kind of medicines have you bought?
			Do you consider that your family can save?

The survey items compiled an exploratory study on personal finance elements exposed by Figueroa-Delgado (2009), who classifies a matrix of expenses as urgent, which can be important and not important; as well as non-urgent, in the same way, important and not important. It should be mentioned that items with non-urgent and non-important aspects of expenses were not made, which are, for example: expensive clothes, expensive housing, luxurious cars, since it was not considered relevant to know if the respondents made this type of expenses in this lockdown. Now, based on some of these expenses raised by the cited author, as shown in Table 2, some variables and their

respective items are observed. These were presented with frequency tables in the results section.

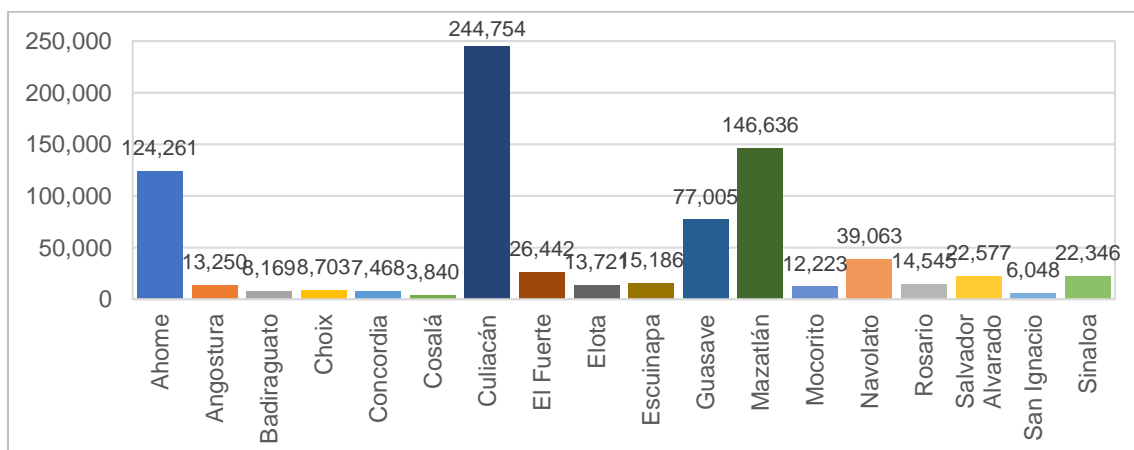
Table 2. Research Variables and Item Numbers

Variables	Items
Data: Sex and age	
General considerations	v1, v2, v3, v25, v37, v42, v48
Important and urgent expenses: Housing, rent or mortgage, utilities, food, tuition, health.	v8, v11, v12, v18, v19, v20, v26, v31, v32, v33, v34, v39, v40, v41, v43, v44, v45, v46, v47
Important and non-urgent expenses: Emergency funds, Savings for future situations, Insurance, Retirement, and retirement fund.	v4, v5, v6, v21, v22, v23, v24, v35
Unimportant and urgent expenses: excessive expenses in technology, and communications, consumption of credit card, high expenses in personal care, non-essential expense.	v7, v9, v10, v13, v14, v15, v16, v17, v27, v28, v29, v30, v36, v38

Source: prepared by the author, based on Figueroa-Delgado (2009).

On the size of the sample, the total of the statistical sample was calculated based on the total of households in the city of Culiacán, Sinaloa, Mexico, being $N = 244,754$ to solve the statistical formula in the Decision Analyst STATS 2.0 software. The total of the statistical sample is of 384 households (see the figure below).

Number of Households in the Different Municipalities of the State of Sinaloa.



Source: INEGI. Tabulated from the Intercensal Survey (2015) retrieved from (<https://www.inegi.org.mx/programas/intercensal/2015/default.html>)

The reliability of the instrument was calculated using Cronbach's Alpha, in SPSS 24.0. 488 surveys were processed. The result was 0.676 (Table 3), and this result is considered as a moderate evaluation attitude, according to, (Robinson et al., 1991). Likewise, Hair, et al. (2008), consider that a Cronbach's alpha "can drop to 0.6 in exploratory research" (pp. 105-106), which justifies the alpha 0.676, since this research is exploratory.

Table 3. Calculation of Cronbach's Alpha

Statistics of reliability	
Alfa de Cronbach	Number of elements
.676	48

Analysis of Results

The way of making decisions about personal finances is framed on the principle of doing more with less, under this gaze the scarce resources in a home or in an organization are managed. It is observed in Table 4 that 67.8% of the respondents are men; the age of those who responded to the form is 34.9% of those between 40 and 50 years old, as well as 30% of those over 50 years of age.

Table 4. Description of the Respondents

	Between 20 and 30 years	Between 30 and 40 years	Between 40 and 50 years	More than 50 years	Male sex	Female sex
Age/sex	13.3 %	21.8 %	34.9 %	30 %	67.8 %	32.2 %

It is observed in Table 5 in which the general considerations are grouped that teleworking from home is present in the sample studied, since 56.3% are working from home in this context of a pandemic. In relation to the fact that if they consider that the government is doing what is pertinent to address the health contingency, it is observed that 63.5% of those surveyed do not believe that the government will do what is

concerned to face it. Likewise, the results of the survey show that 80% make a budget according to their income, that 63.5% do not spend more than they earn, 87.1% make a purchase planning through a list and 61.8% have the ability to save. There are coincidences with the proposals of Figueroa-Delgado (2009), Gitman and Zutter (2016), López-García (2016) and Rodríguez-Raga (2017), who argue about the importance of keeping a budget and planning personal expenses according to income.

Table 5. General Considerations

They make a budget: 83.5% they make a budget; 16.5% do not do it.

Budget according to income: 80% budget according to income; 20% do not budget according to income.

They spend more than they earn: 36.5% they spend more than they earn; 63.5% do not spend more than they earn.

Government actions in the face of a pandemic: 63.5% believe that the government does not do what is necessary to face a pandemic; 36.5% consider that the government does what is necessary to face a pandemic.

Teleworking: 56.3% are doing teleworking; 13.5% are going to their office every day; 16.1% do teleworking and go to their office; 14.1% do not work

They use a shopping list: 87.1% use a shopping list; 12.9% do not use a list.

Saving capacity: 61.8% consider that they have saving capacity; 38.2% do not have

Important and urgent personal expenses are rent or housing fees; public services, administration; market, schools, health, and gasoline (Figueroa-Delgado, 2009, p. 138). In this exploratory study, some questions were applied in the survey to learn about this type of expenditure in households located in Culiacán, Sinaloa, Mexico. As can be seen in Table 6, that 83.5% of household spending decision-makers have their own house, have paid the public water, electricity and gas services on time and have covered the payment of telephone and television, cleaning and hygiene expenses have also increased. In this context of a pandemic, it is shown that only 7.8% of those surveyed have made purchases via the internet.

Table 6. Important and Urgent Expenses

Housing, rent or mortgage

Increase in cleaning and hygiene expenses: 83.5% has increased; 16.5% has not increased

Own house, rented or loaned: 83.5% have their own house; 10.2% rented 6.3%; house loaned

Pay a mortgage: 32.4% pay a mortgage 46.3%; do not pay a mortgage; 21.4% does not apply.

Public services

Paid on time for water, electricity, and gas: 88.6% did pay on time; 11.4% did not pay on time.

Paid on time for television, landline, and cell phone: 84.5% did pay; 15.5% did not pay

Food

Bought reserve food: 64.7% did buy; 35.3% did not buy

Shopping at the supermarket: 77.1% go to the supermarket; 7.8% asked for it online; 13.3% go directly and ask for it online; 1.8% I do not go to the supermarket.

Time that goes to the supermarket; 52.2% during the morning; 14.9% noon; 32.9% from 4 in the afternoon onwards

Day to go to the supermarket: 18% from Monday to Wednesday; 5.7% Thursday to Friday; 19.8% Saturday and Sunday; 50.4% do not have a day to go; 6.1% always ask at home.

Shopping habits: 21.8% buy the cheapest; 19.4% buy quality regardless of price; 17.6% buy brands 46.1% all the above.

You buy everything in the supermarket: 30.4% yes, they buy everything in the supermarket; 54.7% almost everything; 14.9% do not buy everything in the supermarket.

Purchases in butchers: 71.2% do buy in butchers; 28.8% do not buy in butchers.

Purchases in greengrocers: 74.5% do buy in greengrocers 25.5%; do not buy in greengrocers
Tuition

Your children study in schools: 31.8% yes; 47.3% no; 21% does not apply.

Complied with the tuition payment: 34.7% yes; 9.4% no; 55.9% does not apply.

Health

Required medical services: 9.4% in public hospitals; 13.5% in private hospitals; 3.1% both; 73.9% did not require medical services.

Bought medicines by reserve: 46.5% did buy reserve medicine; 53.5% did not buy.

Types of medicines bought: 13.3% patent; 20.2% generic; 47.5% the previous two; 19% have not bought medicines

The food shopping preference is also 71.2% made in butchers and 74.5% in local greengrocers. Only 21.8% buy the cheapest; 64.7% did buy reserve food during the analyzed period. In addition, 9.4% have had problems with paying tuition; Lastly, 46.5% have bought a reserve of medicines and 73.9% did not require medical services.

The important and non-urgent expenses in the classification matrix of expenses exposed by Figueroa-Delgado (2009), are: “pension savings, basis for home purchase, emergency fund, automobile savings, insurance, leisure savings and others (holidays) and taxes” (p.138).

It is observed in Table 7 that the respondents affirm in relation to this type of expenses in this pandemic context, that 55.3% have a contingency fund, and 93.5% would consider having one in the future. However, 93.5% of the respondents did not consider it urgent to have insurance for major medical expenses during the analysis period. Finally, 96.5% have not been interested in taking advantage of offers to travel in the future.

Table 7. Important and Non-urgent Expenses

Emergency funds

Accounts with a contingency fund: 55.3% yes; 44.7% do not have a contingency fund.

Would you consider a contingency fund in the future? 93.5% yes; 6.5% no.

Savings for future situations.

You have taken advantage of offers to travel in the future: 3.5% yes; 96.5%; have not taken advantage.

Insurance

Have you purchased major medical insurance? 6.5% yes; 93.5% no.

You already had insurance for major medical expenses: 24.5% yes; 75.5% no.

You have paid the medical expenses insurance on time: 25.7% yes; 8% no; 66.3% does not apply

Finally, in this analysis of frequencies of the applied Google form, according to the classification matrix of non-important and urgent expenses, such as excessive expenses

in technology and communications, credit card consumption, high expenses in personal care (Figueroa- Delgado, 2009, page 138). With respect to personal care expenses, 71.2% have decreased this type of expenses during this pandemic context. Regarding that, if they have borrowed more in this time with the use of credit cards, it is observed that 62.4% have not done so. They have not required 58% to request a grace period to pay their debts, nor have they had 59.6% problems to pay their credit on time. Similarly, 92.9% have not needed new loans either in banks or 94.3% in pawn shops (Table 8)

The people who keep control of family expenses in the surveyed households, 62.4% have not bought non-essential products, neither have 59.8% of those consulted via the internet. Similarly, the frequency of buying food in restaurants is occasionally 44.1%.

Table 8. Unimportant and Urgent Expenses

Excessive spending on technology and communications

You pay credit for car: 28.4% yes; 71.6% no; If yes, have you fallen behind in credit: 8.2% yes; 26.3% no; 65.5% does not apply.

You have delayed car maintenance: 25.9% yes; 50.8% no; 23.3% does not apply.

Have you bought a computer or accessories? 19.8% yes; 80.2% no.

Have you bought a cell phone or accessories: 19.4% yes; 80.6% no.

Credit card consumption

Have you used your card more during this pandemic? 37.6% yes; 62.4% no.

You requested a grace period for your credits: 19% yes; 58% no; 22.9% does not apply.

You have paid your credit on time: 59.6% yes; 17.8% no; 22.5% does not apply.

You have had problems in the payment of the mortgage in this confinement: 10.2% yes; 41.8% no; 48% does not apply.

You have needed new credit: 7.1%; 92.9% no.

You have taken out credit at a pawn shop: 5.7% yes; 94.3% no.

Have you reduced your personal care expenses? 71.2% yes; 28.8% no.

Non-essential expenses

You have bought non-essential products 37.1% yes; 62.4% no.

You have purchased non-essential products online 20.8% yes by Amazon; 21.8% by Mercado Libre; 0.2% yes by eBay; 14.9% yes through the company's website; 59.8% no.

Frequency of purchase in restaurants

1% daily; 8.2% no more than 3 times a week; 26.3% only on weekends; 7.5% every fortnight; 44.1% occasionally; 12.9% did not buy.

Discussion

The methodology used was exploratory, to identify the types of personal expenses in the homes located in Culiacán Rosales, Sinaloa, Mexico as of July 15, 2020 from the theory of personal finance; For this, 488 surveys were applied electronically through the google form shared on social networks, the research instrument consisted of 48 items applied to the heads of the family as of June 29. Derived from the context of the pandemic, the surveyed families have directed their personal expenses, increasing products for cleaning and hygiene in the home, reducing personal care expenses and purchases of non-essential products; as well as the acquisition of food for reservation. They also develop budgets and have can save.

Important and urgent expenses were covered in the first place according to the classification given by Figueroa-Delgado (2009), from mortgage expenses, rent, payment of public services, food, tuition and health. They agree with the cited author, in relation to the purchase of insurance and contingency funds, most of those surveyed consider them important, but not urgent. But not so important and urgent expenses, since most of the respondents have not considered excessive expenses of technology and communications, credit card consumption, high expenses in personal care and non-

essential expenses, for example 82.8 % have not acquired new cell phones or accessories, have not borrowed more, and 62.4% have not bought non-essential products.

Conclusions

The people surveyed who oversee making decisions about types of family expenses report that, derived from the context of the pandemic, they have now considered having savings for contingency funds. They maintain that they develop budgets to control their finances. There are important coincidences with what was stated by Aguilar (2020) and Cardona (2020), since they advise those who see their income diminished due to the pandemic, make financial plans and prioritize expenses on food, prescription drugs, transportation to move food and medicines, try to save, not go into debt and negotiate with credit institutions in case of debt. Spend in a measured way and only what is mandatory. For those who do not have a change in their income, that is, who receive their salaries regardless of the situation, they recommend not suspending their obligations, likewise, creating and strengthening their emergency fund.

Some studies affirm that digital life begins in this context Covid-19 and that it will come to stay, however, in the families analyzed they still do not make digital purchases to a greater extent. Finally, it is worth mentioning that some future research is aimed at improving the design of the applied research instrument, for which it is recommended to calculate the factor analysis and reduce factors or items. Likewise, include data on professional profiles and levels of financial education in the information collection, since López-Salido (2020) observes that 63% of the Americans surveyed with a university level have done work from home and have been less affected in their finances personal in the current context. Another future topic is to carry out an analysis on the importance and urgency of certain expenses such as insurance for major medical expenses in times of

uncertainty. Finally, develop the financial education line to identify investment alternatives for family savings.

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Gender Equality as The Missing Link Towards the African Renaissance.

Koliswa Matebese- Notshulwana

*Department of Political Science, University of Pretoria
Pretoria, South Africa
Email: kolinotsh@yahoo.com*

Teboho J. Lebakeng

*School of Social Sciences, University of Limpopo,
Polokwane, South Africa
Email: tebzalebza@gmail.com*

Abstract

This advocacy paper seeks to problematise the marginalisation, if not total exclusion, of women in one of the major African projects aimed at revitalising and re-awakening the African continent, namely the African renaissance. This marginalisation is not by default but is a result of historical, cultural and social factors that fostered gender inequalities characteristic of African societies today. Despite the African renaissance being touted as a way to address poverty, instability and social inequalities the continent is still in a debilitating cycle of crises. Taking cognisance of the above unpalatable situation, the paper reaffirms the enduring and critical contributions of women historically and in the present in various spheres. Thus, it argues that there is an urgent need to engender the African renaissance and to strategically reposition women to be indispensable role players in what is fundamentally their future. This call is premised on the fact that women constitute a critical mass as a majority on the continent hence the need to mainstream them in policy formulation, decision making and implementation so that they also determine the future of the continent. This advocacy paper is methodologically based on the existential reality of women on the continent and interactions with women across the board personally and in terms of encounters with their writings. The paper concludes that unless this critical resource is considered, and not overlooked, and Africans inaugurate an epistemic break in the way the re-awakening of the continent is conceptualised, the African renaissance will remain illusive and a pipe dream or mirage.

Keywords: African renaissance, gender inequality, women empowerment

JEL codes: P16, F63, J16

Introduction

This advocacy paper seeks to problematise the marginalisation, if not total exclusion, of women in one of the major African projects aimed at revitalising and re-awakening the African continent, namely the African renaissance. Marginalisation of women is not by default but is a result of historical, cultural and social factors that result from gender

inequalities and women disempowerment worldwide. In essence it refers to the act of perceiving or assuming that a particular individual or a group of individuals do not have certain characteristics, qualities or traits that would make them equal to other people in the society. A person who does not have certain traits that the society considers desirable may be marginalised from receiving certain benefits in the society or may be excluded from being involved in certain social activities within the society, for example, employment, finance or access to education, not to mention quality education. Individuals who are marginalised in the society often live desperate lives as a result of the range of discriminations and variety of maltreatments meted out on them.

After all, the word gender describes the socially-constructed roles and responsibilities that societies consider appropriate for men and women. In the particular case of Africa, the form gender inequality takes reflects indigenous, pre-colonial, and European influences hence explanations for this phenomenon range from (a) historical legacies, (b) cultural modernity, (c) economic modernity, (d) institutional design, (e) symbolic interactionism, (f) structural functionalism, (g) modernisation and (h) inequality theories. These contending, but sometimes complimentary explanations, are so because women's gender subordination emanated from complex socio-political, economic and cultural context.

For instance, European expansion into Africa during the colonial period both undermined sources of status and autonomy that women had and strengthened elements of indigenous male dominance or "patriarchy." At the same time, Western gender ideology and practices that promote male dominance and female dependency have been superimposed on Africa. Since independence, Africa's male leaders have continued to add laminations to the patriarchal structures they inherited from their colonial masters (Anunobi, 2002).

While the status of women in precolonial Africa varied greatly, the impact of European colonialism was mainly to reverse or further diminish their position in society. This was not coincidental since colonial rule was introduced at a time (in the nineteenth century) when Victorian England and other European societies had rather restricted views of women's roles (Charlton, 1989). Like in other areas of African life, colonisation introduced European cultural norms, traditional values, aesthetical preferences, systems and symbols into Africa as part of their so-called civilising mission. In so doing, it destroyed indigenous African indigenous knowledge systems, cultural norms, traditional values, aesthetical preferences, systems and symbols. In retrospect, it is now generally acknowledged that instead of civilising the Africa, Europe set the continent on a downward spiral. In the process, African women were the worst victims as they suffered from utter marginalisation.

Premised on this historical understanding, we assert that gender gaps favoring males - in education, health, personal autonomy, and various other areas - are not inherently African although they are systematically heightened in poor countries than in rich countries. Poor countries by no means have a monopoly on gender inequality. It is only that disparities in health, education, and bargaining power within marriage tend to be larger in countries with low GDP per capital (Jayachandran, 2015). However, although much of the relationship between development and gender inequality can be explained by the fateful colonial encounter with Europe and is sustained by the current levels of development in Africa, society-specific factors are also at play (Jayanchandran, 2015).

Despite women's contributions to the struggle for decolonisation and political independence and rhetoric in favor of equality for all, the new African states and social organisations have failed to assert the position of women in African societies. Rather, they

have replicated the position imposed by the colonial predecessors with the levels of development being a compounding factor. Advantages men had gained in access to education, jobs and property helped them to gain control of most of the wealth, jobs and leadership positions in newly independent African states. The objective evidence with regard to the role of women both in the struggle for decolonisation, and their communities and families does not sustain their continued marginalisation in contemporary Africa. In fact, such evidence provides credence to the need to empower women urgently.

The key proposition in this paper is that the realisation of the African renaissance need an inclusive and participatory concerted effort that draws from the totality of the African human capital. In this regard, women need to be part, and not apart, of efforts aimed at such realisation. The issue of women's empowerment and gender equality should be at the top of agendas across the continent. Granted that various ratifications of international and regional conventions and commitments have been made by African countries, but gender inequality is still prevalent on the continent. The practical aspects of implementing such undertakings have been suspects.

Gender equality means that men and women have equal power and equal opportunities for financial independence, education, and personal development. In this regard, women's empowerment is a critical aspect of achieving gender equality. It includes increasing women's sense of self-worth, their decision-making powers, their access to opportunities and resources, their power and control over their own lives inside and outside the home, and their abilities to effect change (Peace Corps – Global issues: gender equality and women's empowerment) and the ability to play a critical role in the future of their communities and the continent. The above reasons are critical in light of the fact that Africa needs a renaissance. Despite the much touted 'Africa Rising', it is

increasingly clear that the continent's development has stalled and there is a crisis (Lebakeng, 2018). Otherwise how do we as Africans account for the hundreds of African youths crossing perilous seas to try to eke out a living in Europe?

Challenges Posed by Gender Inequality

A nuanced appreciation of the marginal status of women in Africa points to the fact that women are not a homogenous and unified group. Therefore, the tendency to lump them should be avoided because women hardly constitute a monolithic group with identical problems. Even within the African continent women live in countries with diverse historical experiences and development levels, and within each country, the issues pertaining to women vary according to race, ethnicity, class, religion, tribe, residence and educational levels. Notwithstanding such obvious differences, the common denominator for women in all societies is their subordinate status. In fact, women compose the poorest and the least powerful segment of the population (Anunobi, 2002). Gender gaps are widespread in access to and control of resources, in economic opportunities, in power, and political voice and jeopardise the continent's efforts for inclusive human development and economic growth. For instance, in Africa, women-owned enterprises make up as little as 10 percent of all businesses.

In Africa, inequalities between women and men are among the greatest in the world and continues to be a major challenge to tapping the full potential of women to move the continent forward. African women and girls are among the world's poorest, and they have the highest rates of illiteracy. This became obvious as we travelled from Nigeria, Ghana, Benin to Tanzania, Kenya, Ethiopia to Morocco, Algeria, Egypt and Lesotho, Angola and Namibia. The picture was more or less depressingly and excruciatingly the same. Women's participation in the formal labour sector is low, and in

many parts of the continent discrimination against female entrepreneurs workers and managers negatively affects their productivity and results in large disparities in income between women and men. Thus the majority of women are working in the informal sector or on small pieces of land and are engaged in care work, where the work is invisible and unpaid (Wekwete, 2012). Even in agriculture, which is heavily dominated by women, women's productivity is 30 percent lower than men's because women lack access to vital inputs.

According to the Africa Human Development Report (2016), in terms of impact, gender inequality is costing sub-Saharan Africa on average US\$95 billion a year, peaking at US\$105 billion in 2014 which translates to six percent of the region's GDP. Over and above adding to the growing body of evidence on the very real costs of exclusion and the positive impact of women's participation, it serves as "a stark reminder that gender equality is a critical enabler of all development. According to Dollar and Gatti, the most influential evidence on the importance of women to economic development has come from research used to support the World Bank's gender mainstreaming strategy' launched in 2001 (Dollar and Gatti 1999; Klasen 1999). Essentially, this research highlights that societies that discriminate by gender tend to experience less rapid economic growth and poverty reduction than societies that treat males and females more equally, and that social gender disparities produce economically inefficient outcomes (World Bank 2001). Clearly, gender inequalities undermine the effectiveness of development policies in fundamental ways and thus hinder sustainable socio-economic development.

According to the World Bank, countries with greater gender equality are more prosperous and competitive. This is so because gender equality, central in human rights, is recognised both as a development goal on its own and as vital to accelerating

sustainable development. When women participate in civil society and politics, governments are more open, democratic and responsive to citizens. When women are at the negotiating table, peace agreements are more inclusive and durable. Empowered women and girls contribute to the health and productivity of their families, communities, and countries, creating a ripple effect that benefits everyone. Hence the need to turn the vicious situation into a virtuous environment by taking into account indicators associated with women's empowerment such as education, employment and political participation.

Although issues of gender inequality are no longer at the periphery of policy dialogue and decision-making, both in national and international arenas, the issues are still theoretically rather than practically addressed. Ironically, while disparities in basic rights; in schooling, credit, and jobs; or in the ability to participate in public life take their most direct toll on women and girls, the full costs of gender inequality ultimately harm everyone (Alexandra, 2014).

However, the picture of women's marginalisation on the African continent is not completely bleak. One area where Africa is leading in relation to world averages is in women's political participation. In Africa specifically, women have made significant strides in the political arena over the past few years. The continental political body, the African Union (AU), took a major step by promoting gender parity in its top decision-making positions (Mutume, 2005). The voices of women are dynamic, insightful and provide a qualitatively different perspective to societal and development issues. Currently, around seventeen countries in Africa now have quotas for women's political participation at the national or sub-national level. However, women's empowerment is direly needed in all spheres of life not just the political sphere. Women empowerment should thus mean a multi-dimensional social process that helps people gain control over their own lives (Endalcachew, 2016).

The importance of this is highlighted by the fact that there is a growing acceptance and recognition of the important role women play in the development process. Women are crucial to the success of family planning programs; bear much of the responsibility for food production and account for an increasing share of wage labor in Africa. Despite their significant contributions, women continue to face formidable social, economic and political barriers (Anunobi, 2002). Gender inequality has to be addressed if women are to be a critical part of realising the much touted African renaissance as a way to address poverty, instability and social inequalities on the continent.

Deeply-rooted structural obstacles such as unequal distribution of resources, power and wealth, combined with social institutions and norms that sustain inequality are holding African women, and the rest of the continent, back (Africa Human Development Report, 2016). A central message is clear: ignoring gender disparities comes at great cost to the continent's ability to grow sustainably, to govern effectively, to reduce poverty and thus to realise the African renaissance. The key for the future of the continent is the capability to attract, develop and retain the best talent. This talent lies dormant and untapped among African women across the continent. The tragedy of women's marginalisation is that on the continent women account for one-half of the potential human capital.

Another tragedy is that since African leaders launched the African Women's Decade 2010-2020 and the Fund for African Women to accelerate the implementation of all commitments on gender equality and women's empowerment on the continent, very little progress has been noted. Such a launch was preceded by a solemn declaration on gender equality in Africa in 2004.

Imperatives and Challenges in Engendering the African Renaissance

Unless Africa invests heavily in gender equality, it will neither sustain its growth nor meet its continental development goals. The cost of not prioritizing women's well-being is rapidly becoming the differentiating factor between a growing and a stagnating economy (Garijo, 2017).

In the 1970s, the Women in Development (WID) approach emerged out of the realisation that research on African farmers which concluded that far from being gender neutral, development was gender blind and could harm women. Women's subordination was seen as having its roots in their exclusion from the market sphere and their limited access to, and control, over resources. The key was then to place women 'in' development by legislatively trying to limit discrimination and by promoting their involvement in education and employment. Around a decade later, the Gender and Development (GAD) approach arose out of the critique of WID. GAD recognised that gender roles and relations are key to improving women's lives, with the term 'gender' suggesting that a focus on both women and men is needed. The GAD approach recognises that it is not sufficient to merely factor women and girls into existing processes of development but there is also a need to problematise why they are excluded, advocating that the focus should be on addressing the imbalances of power at the basis of that marginalisation, if not total, exclusion (Bradshaw et al., 2013).

Flowing from the preceding, gender equality is a moral imperative for Africa, especially in areas of government, business, non-governmental organisations or research institutions as it is simply the 'right thing to do'. Moreover, women are key managers of natural resources and powerful agents of change. More importantly, they are more vulnerable to environmental degradation and climate change but also have different perspectives, concerns and ideas for change. Until these are taken on board, with

women empowered to play a full part in decision-making at all levels, environmental sustainability will remain a distant goal (Hawley, 2016) and the realisation of the African renaissance will remain a pipe-dream or mirage.

Gender equality can enhance economic growth and improve other development outcomes in three ways: (i) increasing women's access to and control over resources can generate broad productivity gains, (ii) improving women's status and improves many other development outcomes (health, nutrition, etc.), and (iii) crucially, women's economic gains benefit not only themselves but also the next generation, magnifying the development impact.

The importance of the African renaissance in relation to women lies in that African renaissance is the concept that posits that African people and nations shall overcome the current challenges confronting the continent and achieve cultural, scientific, and economic renewal. It has its central goal the right of African people, women and men, to determine their own future and that of the continent. Although first articulated by Cheikh Anta Diop in a series of essays beginning in 1946, which are collected in his book *Towards the African Renaissance: Essays in Culture and Development, 1946-1960*. This concept has since been further popularised by former South African President Thabo Mbeki during his term of office. The African renaissance merely sought to set out an inspiring vision and lay down the policy actions that could create the conditions for Africa's rebirth.

Therefore, there is an urgent need to engender the African renaissance and to strategically reposition women to be indispensable role players in what is fundamentally their future. This call is premised on the fact that women constitute a critical mass as a majority on the continent hence the need to mainstream them in policy formulation,

decision making and implementation so that they also determine the future of the continent and provide an impetus for the realisation of the African renaissance.

Given Africa's critical political, economic, security challenges, it is increasingly obvious that suppressing the talents and skills of women to protect men's privileges is an enormous waste of human resources that Africa with its vast potential can no longer afford (Anunobi, 2002).

The African renaissance embodies the concept of sustainable development which, itself arises due to the change of human perception as to what development should entail. Historically speaking, development perspectives shifted gradually, leading to what we perceive today as sustainable development. In the 1950s and 1960s, the focus was on the economic growth and productive capacity of a country (ECA, 2015; Gunduz, 2004; Drexhage and Murphy, 2010). However, in the 1970s, the focus shifted to equity matters, thus refocusing to include issues such as social development and income distribution.

Furthermore, in order to address the conditions peculiar to Africa that affect women status and roles, the following observations must be made. First, the overall economic and political problems of Africa make life difficult for most African men as well as women. Inequality, oppression, poverty, and lack of opportunity are widespread societal concerns. Nonetheless, women as a group suffer more and have access to fewer resources and opportunities than do men. It is important to note that African societies and gender roles are highly diverse; this makes efforts at generalisation somewhat tentative and not applicable to every society. Regardless, Africa must of necessity leverage the talents of her women in business, science, technology, education, economy, polity and aesthetics and other diverse areas. Leveraging on women's capabilities in a strategic imperative as the cost of not prioritising women's well-being is rapidly becoming the

differentiating factor between Africa moving forward and remaining underdeveloped and thus failing to realise the African renaissance.

These inequalities can only be addressed by removal of policies that reinforce gender inequalities as well as formulating and enforcing laws that seek to improve women's economic empowerment. Initiatives identified to improve women's economic empowerment include revision of regulations to increase women's participation in the labour market, skills training, policy reforms on regulations that hinder women's empowerment, setting up of micro-credit schemes, use of technology to access markets such as mobile phones to release women's time in caring and domestic work, fostering of partnership by providing funding to women, cash transfers and welfare fund, subsidised or publicly provided child care and skill training as well as improving infrastructure services such as water and electricity (Wekwete, 2012).

Concluding Remarks

In conclusion, unless women as a critical resource are considered, and not overlooked, and Africans inaugurate an epistemic break in the way the re-awakening of the continent is conceptualised, the African renaissance will remain illusive. While there has been some progress on the third Millennium Development Goal to "promote gender equality and empower women," as indicated in the 2013 Millennium Development Goals Report, there is still a long way to go when it comes to some key indicators of gender equality such as equal education and economic opportunities for women.

Most African countries have set up ministries and institutions focused exclusively on women or women and families, following the conventional practice in other regions. To advance gender equality, the UNDP report argues, African states need to integrate it as a shared responsibility across institutions and ministries. But national mainstreaming

is not enough. What is needed to accelerate gender equality or women's empowerment is to deconstruct and dismantle the entrenched harmful social norms and practices on the continent that have become major hinderances to the realisation of the African renaissance.

Since the problems of women since independence are a continuation of policies and forces established during the colonial era, strengthening women's roles as leaders, entrepreneurs, consumers, economic stakeholders peace negotiators and mediators will transform the continent. After all, although African gender relations were transformed during the colonial era to further European economic and political exploitation of Africa, such distorted and unfair policies often continue to be justified by African leaders.

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Evaluating South Asia's Pandemic Preparedness

Chathuni Pabasara

Independent researcher

Colombo, Sri Lanka

Email: dan.chathuni@gmail.com

Ravindri Paranagama

Independent researcher

Colombo, Sri Lanka

Email: ravindriparanagama@gmail.com

Abstract

The COVID-19 pandemic has underscored the need for pandemics to be recognized as serious and imminent threats to national and economic security and henceforth, the need to elevate pandemic preparedness as a critical component of public health infrastructure. Despite the lack of robust pandemic preparedness plans, South Asian countries were able to implement proactive lockdown measures to contain the spread of the virus during the early stages of COVID-19. However, public health systems in the region were soon overwhelmed by the drawn-out pandemic and surges in the number of cases, due to inadequate national public health emergency plans, limited public health infrastructure and human resources. The lack of sufficient resource allocation into preparedness plans and surveillance, exacerbated by the region's socio-economic vulnerabilities, leaves South Asia exposed to future pandemics. While the success of strategies has been uneven across the Southeast Asian region; pandemic preparedness strategies shaped by lessons learned in managing disease outbreaks in the past, have facilitated the sharing of information, expertise and technical support through regional mechanisms. Such tools have been identified as critical to developing policy responses during infectious disease outbreaks. As zoonotic diseases are impossible to eliminate due to their animal origins, pandemics are an inevitable threat. Therefore, South Asia can address the gaps and weaknesses in their existing national preparedness plans and apply Southeast Asia's best practices to improve their national and regional detection and response systems; reforming and elevating South Asia's pandemic preparedness.

Keywords: pandemics, preparedness, resource allocation

JEL codes: H5, I1, F5

Introduction

Approximately 60% of known infectious diseases in humans reported globally are zoonotic diseases - diseases that can be transmitted from animals to humans (WHO, 2014). In just the last three decades, over 30 human pathogens have been found, of which 75% have originated in animals (WHO, 2014). Most emerging zoonotic diseases such as SARS in 2003, Nipah Virus in 1999 and 2001, and COVID-19 by the end of 2019, are often

found to arise from the South and Southeast Asian subregions, with two pathogenic virus pandemics in recent decades originating in Asia (Shrestha, 2019). These alarming trends call for attention; Zoonotic diseases are on the rise and will continue to increase more rapidly if not addressed immediately and actively prepared for with the appropriate mechanisms. Neglected zoonotic diseases kill two million people a year (Earth.org, 2020); therefore, it is in the best interests of governments and health authorities to cooperate in utilising their available resources and expertise strategically, efficiently and responsibly for social, economic and development purposes.

Nation states need to bolster pandemic preparedness strategies which work in the best interests of their people, while supporting their national economies. According to the World Health Organisation (WHO), pandemic preparedness is a continuous process of planning, exercising, revising and translating into action national and sub-national pandemic preparedness and response plans (WHO, 2021a). These plans should be regularly reviewed and revised with the availability of new and emerging information and lessons learned from managing disease outbreaks. This paper studies South Asia's vulnerability to infectious disease outbreaks and evaluates its preparedness strategies implemented during COVID-19. Consequently, it identifies gaps and weaknesses that were exposed during the pandemic, to highlight the importance of pandemic preparedness strategies in mitigating social and economic costs. Considering the merits of preparedness activities implemented in Southeast Asia, this paper also offers recommendations for bolstering national pandemic preparedness and regional cooperation to elevate Asia's outbreak readiness.

Evidence suggests that COVID-19 transmits from person to person, without an assured long-term treatment impending. Good hygiene and social distancing help prevent infection and curbs the spread of the virus. Earlier this year, the rolling out of

various vaccines became the intervention hoping to slow the rate of transmission in South Asia (World Bank, 2021). However, this too is not an effective long-term solution. The annualised expected loss from potential pandemics is more than \$60 billion (GHRF Commission, 2016: 2). With the emergence of COVID-19 variants as the pandemic progresses through to its second year, medical professionals gather greater knowledge about the novel virus. Therefore, the rapid fusion of new knowledge into preventive action is vital.

The article is organized as follows; the next section provides contextual background to South Asia's vulnerability to infectious diseases, explaining the key factors guiding the analysis, including details of the epidemiology of COVID-19 in South Asia. This section then moves on to describe the research methods used for this paper. The third section presents the key findings from the secondary research data sources, organized in tables presenting a comparative analysis between South Asia (SAARC countries) and Southeast Asia (ASEAN countries), from which the data was gathered. A fourth section proposes recommendations from these findings for the way forward, in relation to the best practices learned from national strategies and regional cooperation in Southeast Asia, which can be applied to reform and elevate South Asia's pandemic preparedness. This paper concludes with reflections on South Asia's challenges facing healthcare expenditure and resource availability during a pandemic. Overall, by drawing attention to why pandemic preparedness is essential to shaping policy responses, this paper aims to contribute in re-shaping the socio-political context of South Asia during infectious disease outbreaks.

Contextual Framework and Research Methods

South Asia's Vulnerability to Infectious Disease Outbreaks

To explain South Asia's risk to infectious disease outbreaks and its current circumstances in dealing with the ongoing COVID-19 pandemic, factors contributing to its vulnerability will be highlighted. Home to a rich range of biodiversity, a tropical region such as South Asia - Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka - is a breeding ground for pathogens. In this paper, we explore a number of factors including poverty; scarce resources; dense population; deforestation; rapid urbanization; the growing threat of emerging zoonotic diseases; globalisation and interconnectedness; and unequal access to vaccines, which make South Asia a particularly vulnerable region to the outbreak of infectious diseases.

Among world regions, South Asia, with a population of 1.8 billion, may see the largest increase in the number of poor due to the consequences of COVID-19 (UNESCAP, 2020). Poverty, scarce resources in healthcare infrastructure, a shortage of healthcare workers and a lack of epidemiologists and trained veterinarians in the region, leads to the neglect of zoonotic diseases. According to UNESCAP simulations, as many as 132 million people in South Asia could be pushed into extreme poverty, as a result of COVID-related measures which were proposed given the gravity of the outbreak (UNESCAP, 2020). This has unfortunately led to the undoing of all the developmental progress that has been achieved in the last decade, in relation to the Sustainable Development Goals (SDGs) in the South Asian region; further undermining the region's ability to fight future disease outbreaks.

Since 2018, Asia has had the highest population density compared to other world regions; South Asia as a sub-region is the most densely populated with 380 people per square kilometer of land area (World Bank, 2018). This poses a risk to the region's

inhabitants when a disease outbreak occurs, due to easier and faster transmission between people in a given area. Zoonotic diseases are also becoming increasingly prevalent as the buffer between civilization and wildlife continues to be erased through deforestation, mining and the destruction of animal habitats. There are significant associations observed between epidemics and deforestation especially in tropical areas such as South Asia, therefore, increasing the threat of zoonotic disease outbreaks in the region (Morand and Lajaunie, 2021).

Additionally, rapid urbanisation associated with high-density living in South Asia is a social determinant of the spread of infectious diseases. This overcrowding leads to the lack of proper housing such as slums or shanty towns, which are common in the region, where people are in close contact with each other and prone to health hazards, due to insufficient ventilation and sanitation systems. These poor conditions of living contribute to the creation of clusters that easily spread disease elsewhere in the region, as a result of free movement.

The threat of emerging zoonotic diseases such as the Nipah virus is a growing concern to South Asia, given the number of cases that have already been detected in the region and due to its mortality rate ranging from 40% to 75%, which is significantly higher than that of COVID-19 (Constable, 2021). According to the WHO, the Nipah virus is one of the top 10 pathogens likely to cause the next public health emergency (WHO, 2021b). Outbreaks tend to occur along the Bangladesh-India border, which is known as the 'Nipah-belt'; however, despite this, awareness concerning this virus is considerably low, even in areas where outbreaks of the disease occur (Joi, 2021). Due to the high death rate, early detection and tracing systems for the virus are extremely important to the region.

As zoonotic diseases are transboundary in nature (Shrestha, 2019), with globalisation and the growing interconnectedness of the world through trade, investment and tourism; the transmission rate is heightened. South Asia's proximity and growing integration with East Asia - a subregion endemic to zoonotic diseases, increases its vulnerability. South Asia's growth in travel, trade and connectivity has made it more susceptible to infectious diseases and consequently, the region's tourism and aviation sectors also take a hit, as people become more cautious of where they travel to.

In addition to the various socio-economic and development factors contributing to South Asia's vulnerability to infectious disease outbreaks; some of the poorest parts of the world such as countries in this region are also vulnerable to vaccine nationalism. Developing countries often have limited fiscal capacity to purchase vaccines, thus, affecting their ability to compete with wealthier nations who are able to easily procure doses of vaccines from pharmaceutical manufacturers (Khan, 2021). Advance purchase agreements with pharmaceutical companies ensure that the accessibility and availability of doses of vaccines which are high in global demand, land in the hands of wealthier nations. It is estimated that most developed nations will achieve 75% vaccine penetration in 2021, while countries like Bangladesh and Pakistan will take nearly a decade to achieve herd immunity (Fickling, 2021).

As humans are brought into increasingly close contact with animal species that are potential hosts of infectious diseases, due to continued destructive ecological changes to sustain the pace of human population growth and economic development; pandemics are an inevitable and imminent threat, especially to South Asia. For these reasons, our analysis takes into account that despite these numerous factors contributing to the vulnerability of South Asian nations to the outbreak of infectious diseases, there is still a lack of a pragmatic approach with robust national plans, guidelines or laws in place for

the surveillance and control of multiple zoonotic pathogens that are of increasing concern for public health in the region (Giridhara et al., 2020).

Epidemiology of COVID-19 in South Asia

South Asia has recorded 30,783,928 cases (18.0% of global cases) and 377,296 deaths (10.6% of global deaths) at the time of writing¹. However, it is likely that case numbers are much higher as a result of large numbers of unreported or undiagnosed cases, due to fragile medical systems and limited testing capacity. India accounts for the highest number of cases and deaths in the region, with 28,175,044 cases (91.5% of total cases in the region) and 331,895 deaths (88.0% of total deaths in the region). As of the 31st of May 2021, Afghanistan had the highest case fatality ratio (4.1%), while Bhutan had the lowest case fatality ratio (0.06%) in the region.

Despite South Asia's low level of pandemic preparedness, the region was able to control the initial spread of COVID-19 through interventions such as travel bans, airport closures, lockdowns and mandatory quarantine procedures implemented as early as February and March of 2020. These measures enabled South Asia to mount a reasonably effective response to mitigate the spread of COVID-19 (Giridhara et al., 2020). However, these wide-ranging containment measures constrained the supply and demand of goods and services, debilitating local economies and aggravating pre-existing socioeconomic inequalities due to widespread jobs and earnings losses. As a result, national governments faced mounting pressure to ease mobility restrictions and resume economic activities.

As mobility restrictions were gradually lifted, the region saw a surge in the number of COVID-19 cases, with several countries experiencing a second wave of

¹ As of 31/05/2021.

infections in 2020. Countries across the region began to witness a resurgence in case numbers during the first quarter of 2021 (Amnesty International, 2021). The rapid rise in case numbers as a result of more transmissible variants of the virus has overwhelmed health systems and claimed over 206,524 lives in 2021 alone, accounting for 54.7% of total deaths in the region. The region's latest and most deadly wave of infections signal that the epicenter of COVID-19 has shifted to South Asia.

Since April, India has witnessed 15,953,379 cases (56.6% of total cases) and 168,968 deaths (50.9% of total deaths), with an average of 261,530 new cases a day during April and May. As India's health systems crumbled under the weight of the devastating second wave, citizens were left scrambling to find oxygen and essential medicines. Bangladesh also experienced a rise in case numbers in late March, with the number of new cases averaging at 4,928 cases daily during April. However, the number of cases began to fall as a nationwide lockdown was imposed on the 5th of April. By mid-April, Nepal also began to witness record level increases in case numbers, reporting 7,681 new cases on average each day during May. This overwhelming surge in cases has pushed the country's under-resourced health system to its breaking point. Similar surges in cases were observed in the Maldives, Pakistan and Sri Lanka. The newest wave of the disease has pushed health systems across the region to the brink of collapse with shortages of oxygen, hospital beds, essential medicines, ICU beds, ventilators and human resources. While South Asian governments have taken measures to expand health infrastructure, it is unlikely that short-term fixes such as increasing the number of hospital beds would prove effective in strengthening fragile public health infrastructures in the region.

It is with these understandings of the nature of pandemics; South Asia's vulnerability to the outbreaks of infectious diseases; and South Asia's experiences with COVID-19, that our secondary research was carried out, highlighting the importance of

increasing the allocation of resources towards public health to effectively combat future disease outbreaks. Therefore, this paper contributes to enhancing the understanding of the level of South Asia's pandemic preparedness, comparing it against the exemplary Southeast Asian region.

Research Methods

The research this paper presents was conducted to identify and evaluate South Asia's pandemic preparedness level during COVID-19, while recognising the more favourable tools and mechanisms used in Southeast Asia. This paper utilizes the functions of effective pandemic preparedness and response formulated by the Commission on a Global Health Risk Framework for the Future, to highlight crucial areas where Southeast Asia performs better than South Asia. The research presents how South Asia can reform and elevate their pandemic preparedness by incorporating Southeast Asia's best practices, to shape policy responses for the next disease outbreak and future waves of the current outbreak. This paper draws on findings from qualitative research to analyse the challenges posed by the COVID-19 pandemic, related to public health and healthcare services and the need for sustainable investment into public health security. Participating countries for South Asia used in this analysis include SAARC member countries (Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka), while participating countries for Southeast Asia used in this analysis include ASEAN member countries (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam). Southeast Asia is of particular interest as a comparator region, due to it also being a sub-region in Asia and having similar vulnerabilities to zoonotic diseases. What's more, both sub regions maintain regional organizations that promote intergovernmental cooperation in various areas, including public health security.

Qualitative analysis through the use of secondary literature, highlights why interventions matter and the merits of national and regional health governance in pandemic preparedness in mitigating social and economic costs. Secondary literature is used to identify the gaps and weaknesses in pandemic preparedness strategies within the South Asian region that were exposed during the COVID-19 pandemic. Overall, qualitative research through secondary literature contributes in identifying best practices from Southeast Asia, which could be applied to reform and elevate South Asia's pandemic preparedness.

Quantitative analysis through the use of secondary data was gathered from Our World in Data - Oxford Martin School, the WHO and the World Bank databases, to present visually representative tables showing the comparison between South Asia and Southeast Asia on indicators such as: Global Health Security index (GHS); COVID-19 metrics; number of hospital beds; healthcare expenditure as a % of GDP and as a % of general government expenditure. The Our World in Data, COVID-19 Data Explorer was used to show the number of cases and deaths in South Asia and Southeast Asia, to evaluate the difference between the two regions in pandemic response. Secondary data from WHO and World Bank databases were used to gather data on the number of hospital beds to quantify the comparative analysis between the two regions on their available resources to fight disease outbreaks based on their capacity. Moreover, data on regional healthcare expenditure was gathered to present domestic general government health expenditure, to show that Southeast Asia is more capable in mobilising resources and expertise for public health emergencies and is more diverse in income levels compared to South Asia. The healthcare expenditure indicators are important in measuring the difference in pandemic preparedness between South Asia and Southeast Asia, through national governments' public healthcare investment.

Additionally, the difference between South Asia and Southeast Asia on social healthcare expenditure was analysed to emphasise the importance of investing in pandemic preparedness strategies, as opposed to dealing with the cost of social and economic consequences of pandemics and depending on donor funding. Data on out-of-pocket spending (OOPS) and catastrophic health spending was gathered from UNICEF's 2020 report on South Asia's Social Spending (Bloch, 2020). Out-of-pocket spending data is the payment by households directly to providers for the obtention of services and healthcare products. This measure is used to present how much the health system relies on this means to finance it. Furthermore, catastrophic health spending measures households' financial hardship, reflecting concerns for households having to choose between spending on health for the services and products they need or, meeting other basic needs such as education, housing and food. This measure is used to highlight the need for pandemic preparedness strategies to shape the implementation of appropriate policies, to protect individuals from the hardship arising from overwhelmed healthcare systems during outbreaks of infectious disease.

Given the limited availability of data and the evolving nature of the pandemic, it is difficult to estimate the overall success and level of effectiveness of preparedness and response activities. Limitations of our research method include the reliance on secondary research, with a lack of primary research concerning the effect on livelihoods of the South Asian population, as a result of the COVID-19 pandemic and their respective governments' preparedness strategies. Although a literature review was conducted as part of qualitative research to assess South Asia's handling of the pandemic, it cannot explain the extent of its impact directly on the livelihoods of the population at large. Moreover, measures such as out-of-pocket spending and catastrophic health expenditure also have limitations in their ability to measure all aspects of interest. Nevertheless, the

advantages of the research methods used include, up to date data on regional healthcare expenditure; global health security; and COVID-19 metrics from official reliable sources, which enabled the presentation of quantitative information to be produced visually through tables to show clarity in our research findings, contributing to evaluating South Asia's pandemic preparedness.

Research Findings

Functions of Effective Preparedness and Response

The Commission on a Global Health Risk Framework for the Future was established following the Ebola virus epidemic and has provided peer-reviewed consensus recommendations to create a comprehensive framework to counter infectious disease crises: the strengthening of national public health capabilities and infrastructure; international leadership and coordination and; enhancing research and development efforts in the infectious disease arena (GHRF Commission, 2016).

The outbreaks of SARS and the H1N1 viruses and Southeast Asia's growing vulnerability to zoonoses, has prompted the region to recognize the need for readiness strategies to combat future public health risks. This has spurred greater resource mobilization into the establishment of new institutional bodies, to oversee public health functions and the expansion of public health infrastructure and capacities that included surveillance capabilities, diagnostic laboratory capacities, coordination mechanisms and reporting systems (Coker et al., 2011). While Southeast Asia continues to face challenges and gaps in national health systems, the region has made significant investments towards bolstering its ability to prevent, respond and control infectious diseases. The region has enhanced its surveillance capabilities by integrating elements of animal health. Thailand, a regional example of success, as evidenced by its GHS score and global GHS ranking, has

invested heavily in biosecurity and surveillance systems. For example, a mobile application developed by Thailand's Ministry of Public Health in partnership with the Center for Disease Control and Prevention (CDCP), is used by farmers and animal and human health officers to flag deaths, illnesses and abnormal health events (CDCP, 2018), which allows for faster disease investigations and response to control potential outbreaks. Similarly, Indonesia has ramped up community-based surveillance through training initiatives. Countries have also invested in enhancing laboratory capacity to handle influenza viruses for virus sequencing.

Regional cooperation and cross-border collaboration in the detection and response to disease outbreaks is another crucial element of a preparedness strategy. The existence of an infectious disease in one country endangers the rest of the world, as evidenced by the rising case numbers in Southeast Asia due to the emergence of highly transmissible variants of COVID-19 in other parts of the world. In this regard, ASEAN has established several forms of regional cooperation to mitigate the risk of future outbreaks in the multiple areas of preparedness activities, including animal health, laboratory networks, epidemiology training, risk communication and data analytics. These mechanisms have allowed the implementation of regional-level responses during COVID-19, in addition to the varied responses taken by individual member states. The ASEAN Emergency Operations Centre Network for public health emergencies (ASEAN EOC Network) and the ASEAN BioDiaspora, facilitates risk communication and the timely sharing of information pertaining to infection statistics and policy and response efforts among member countries through a publicly available platform (Djalante, et al., 2020). The network also disseminates key information on disease hotspots and best practices to raise public awareness and combat misinformation. The Regional Public Health Laboratories Network also provides expertise and technical support to laboratories of

ASEAN member states. Cambodia, Laos, Myanmar, Thailand and Vietnam, along with China, are also a part of the Mekong Basin Disease Surveillance Network. Established in 2000, the network facilitates collaboration in the detection and control of infectious diseases in the region, in addition to cooperation during disease outbreaks (GHRF Commission, 2016).

Countries in the region have established bilateral cooperation to bolster local research capacity in the infectious disease research arena to enhance preparedness: the Thai Ministry of Public Health collaborates with the CDCP on emerging infectious and tropical diseases, while the Thai and U.S. armies have a collaborative infectious disease research laboratory, the Armed Forces Research Institute of Medical Sciences; the Institut Pasteur, dedicated towards the study and treatment of diseases, particularly those of infectious origin has established several facilities in Vietnam, a facility in Cambodia, and another currently under construction in Laos; the London School of Hygiene and Tropical Medicine also maintains a research centre in Thailand (Coker et al., 2011). Southeast Asia is also home to EcoHealth Alliance's Emerging Infectious Diseases – Southeast Asia Research Collaboration Hub (EID-SEARCH). EID-SEARCH is a part of the NIAID-funded² Centers for Research in Emerging Infectious Diseases (CREID) Network, facilitating collaboration among scientists in the U.S., Malaysia, Singapore and Thailand in emerging infectious disease research. The networks consist of clinics, laboratories, and research institutes across the region, conducting zoonotic disease surveillance of human and wildlife populations to identify and preempt outbreaks, while enhancing the understanding and response to zoonotic diseases (EcoHealth Alliance, 2021).

² National Institute of Allergy and Infectious Diseases (NIAID).

Resource Allocation and Health Security

South Asia

Despite the growing threat of infectious disease outbreaks in the region, South Asia's ability to prevent, detect, and respond to public health emergencies remains woefully inadequate. The fragility of South Asia's underfunded health systems was exposed during the latest wave of the pandemic as health systems collapsed and countries struggled to manage patient loads and mobilize life-saving equipment and medicines. South Asia's growth momentum softened in 2019, before the onset of the COVID-19 pandemic, due to weak global growth, rising public debt levels and existing vulnerabilities in the banking sector (World Bank, 2020b). As a result, government efforts to mobilize additional resources to the health sector were constrained by tight fiscal positions, exacerbated by weak revenue collection and high public expenditures (World Bank, 2020b).

South Asia, on average, scored 36.6 out of 100.0 on the Global Health Security Index in 2019 (Table 1). The index evaluates countries' capacities and capabilities to prevent, detect and respond to public health emergencies and assesses the robustness of healthcare systems on a national level. India was the most prepared in the region with a score of 46.5, while Afghanistan was the least prepared in the region with a score of 32.3. While the region's performance across all index categories was less than satisfactory, the region performed particularly poorly in terms of health systems (23.7), prevention (29.2) and rapid response (36.0). The category titled 'health system', includes indicators that assess the capacities of national health systems to handle public health emergencies; 'prevention' comprises of indicators that evaluate the emergence or release of pathogens and; 'rapid response' measures emergency preparedness and the ability to mitigate the spread of an epidemic.

Table 1. Categories of the Global Health Security Index of South Asian countries

Country	Lending Group	Global Health Security Index						
		Overall Score	Prevent	Detect	Respond	Health	Norms	Risk
Afghanistan	Low-income	32.3	21.8	44.8	23.6	21.0	56.3	23.3
Bangladesh	Lower-middle income	35.0	27.3	50.9	23.1	14.7	52.5	44.0
Bhutan	Lower-middle income	40.3	35.5	42.8	42.0	27.9	39.7	56.9
India	Lower-middle income	46.5	34.9	47.4	52.4	42.7	47.7	54.4
Maldives	Upper-middle income	33.8	21.8	25.5	40.2	18.1	45.5	58.3
Nepal	Lower-middle income	35.1	43.7	22.0	41.9	28.1	33.5	44.7
Pakistan	Lower-middle income	35.5	24.1	41.7	38.7	19.9	49.7	38.7
Sri Lanka	Lower-middle income	33.9	24.2	43.0	26.4	16.9	41.7	56.7
South Asia		36.6	29.2	39.8	36.0	23.7	45.8	47.1

Sources: GHS Index (2020); World Bank (2021k).

South Asia's poor performance in terms of health systems is evidenced by the limited number of hospital beds available per thousand population which amounted to just 1.6, with just Bhutan (1.7 beds per 1000), Sri Lanka (4.1) and the Maldives (4.3) exceeding one bed per thousand population (World Bank, 2021d). The limited number of beds in the region hinders access to inpatient care, posing a significant challenge to pandemic preparedness. South Asia faced a widespread shortage of beds with the onset of the latest surge in cases with patients being turned away at hospitals and forced to find treatment at home (Pandey, 2021). The region also faced shortages in the number of skilled healthcare personnel available to treat the growing number of patients. The average number of physicians available per thousand population in South Asia amounted to just 0.8 in 2017; slightly above lower middle income levels (0.8) yet below low and middle income levels (1.3) (World Bank, 2021h).

Laboratory capacity, equipped with adequate equipment and personnel, is another crucial component of a public health system (GHRF Commission, 2016: 28). Rapid identification of specimens increases the availability of more precise information such as risk and transmissibility, as opposed to ambiguous warnings that policymakers

often hesitate to act upon (Gaub, 2021). While South Asia was able to increase the number of laboratories and testing capacity, the number of RT-PCR based coronavirus tests remained insufficient given the size of South Asia's population (Rabbi et al., 2021). Low levels of testing lead to lower case numbers, masking the actual number of cases present in the community and undermining the ability of policy-makers to make timely and effective decisions.

What's more, countries lack comprehensive national preparedness and response plans or sufficient surveillance capabilities, to monitor diseases of concern for public health security in the region (Giridhara et al., 2020). The absence of robust surveillance systems across the region hinder the early detection of unusual health trends and emerging infectious diseases and therefore, undermine the region's ability to mount timely and effective control measures and report the occurrence of a Public Health Emergency of International Concern (PHEIC). In addition to this, there is a lack of cooperation through organisations such as SAARC, which could be effectively utilised to relieve the burden on individual nation states during a time of shared uncertainty. Although, there was an attempt for regional cooperation against the pandemic during the initial stage of the outbreak in March 2020, through the 'COVID-19 Emergency Fund'; there has been limited progress in this regard, with no development of a SAARC pandemic protocol through its existing mechanism, the 'Disaster Management Centre' (Pattanaik, 2021). In comparison, ASEAN has played a more active role in establishing several forms of regional cooperation to combat COVID-19 and future outbreaks.

Resource availability and mobilization are critical elements in determining the effectiveness of outbreak response management. However, despite South Asia's socioeconomic inequalities and vulnerabilities to infectious disease outbreaks, overall resource allocation to the health sector by national governments remains poor, affecting

the region's ability to control outbreaks. Inequalities in healthcare service coverage exist within countries in South Asia, where the allocation of resources to health is relatively poor in rural areas. Rural households also have limited access to transport services, further limiting their access to healthcare services.

As per the WHO's recommendations, the standard used for government health expenditure as a percentage of GDP is at least 3% (UNICEF South Asia, 2016). Yet, domestic general government health expenditure as a percentage of GDP only accounted for 1.9% in South Asia in 2018 (Table 2). Average government expenditure for health in the region's most populous countries (India, Pakistan and Bangladesh) was 0.8% of GDP in 2018; well below the expenditure levels in Sub-Saharan Africa (1.9%), lower middle income (1.4%) and low and middle income countries (2.8%). Government expenditure on health as a share of GDP is highest in the Maldives (6.6%), the only country in the region where health expenditure exceeds the WHO recommendation of 3% of GDP and an outlier in the region in terms of health spending. Bangladesh spends the least on health as a share of GDP (0.4%), despite being the third most populous country in the region.

Table 2. Health Expenditure and Infrastructure Indicators Influencing Pandemic Preparedness in South Asia

Country	Population	Domestic general government health expenditure (% of GDP)	Domestic general government health expenditure (% of general government expenditure)	Hospital beds (per 1,000 people)
		2018	2018	2017 (MRE)
Afghanistan	37,172,386	0.5	1.8	0.4
Bangladesh	161,356,039	0.4	3.0	0.8
Bhutan	754,394	2.4	7.6	1.7
India	1,352,617,328	1.0	3.4	0.5
Maldives	515,696	6.6	21.4	4.3
Nepal	28,087,871	1.5	4.6	0.3
Pakistan	212,215,030	1.1	5.3	0.6
Sri Lanka	21,670,000	1.5	8.3	4.2
South Asia		1.9	6.9	1.6

Sources: World Bank (2021a,b,c,d,g,i,y).

Limited fiscal space in most South Asian economies affect their ability to sufficiently allocate resources to social sectors such as public health (Table 3). Revenue generation through tax collection remains below potential in South Asia as a result of low levels of formal employment, tax exemption and evasion, and weak tax administration, thereby increasing fiscal deficits (Bloch, 2020). What's more, studies have found that social spending programs are also more likely to be subjected to budget cuts during fiscal consolidation as opposed to other larger non-productive items such as military expenditures (Ortiz, et al., 2017). Spending priorities are also affected by vested interests and ideological posturing.

Table 3. Military Expenditure and Health Expenditure as a Share of GDP in South Asia

Country	Military Expenditure (% of GDP) 2014-2018 Average	Health Expenditure (% of GDP) - 2014-2018 Average
Afghanistan	1.0	0.5
Bangladesh	1.3	0.4
Bhutan	n/a	2.5
India	2.5	0.9
Maldives	n/a	6.3
Nepal	1.6	1.2
Pakistan	3.7	0.9
Sri Lanka	2.2	1.6
South Asia	2.1	1.8

Sources: World Bank (2021e,f).

While some countries in the region face elevated political and security risks, the human cost of the COVID-19 pandemic has shown that a pandemic could kill as many people as a deadly war. Yet, countries in South Asia allocate greater amounts of resources towards defence spending than on social sectors, in spite of the region's socioeconomic inequalities and the growing threat of zoonotic diseases. In 2018,³ military expenditure as a share of GDP was higher than government expenditure on health in all South Asian

³The latest year for which data on health expenditure is available.

countries⁴ (Table 3). On average, military expenditure as a share of general government expenditure was 9.3%⁵ in South Asia (World Bank, 2021e,f), whereas health expenditure accounted for 6.9% of government expenditure in the region in 2018 (Table 2). Health expenditure as a share of total government expenditure varied across the region, with shares ranging from 1.8% in Afghanistan to 21.4% in Maldives. The allocation of a greater amount of public funds on healthcare in the Maldives, compared to other countries in the region, is reflected in the country having achieved lower mortality rates, higher life expectancy and near universal immunisation rates (Bloch, 2020).

The inadequate allocation of resources to health services by national governments in South Asia has limited equitable access to healthcare services, increasing the burden of out-of-pocket (OOP) health care payments on households. Wagstaff et al. (2018) defines health spending as catastrophic if it accounts for more than 10% or 25% of household consumption. The proportion of the population that spends more than 10% of household consumption or income on OOP health expenditures is significantly high in Bangladesh (13.6%), India (17.3%), Maldives (20.1%) and Nepal (27.4%) (Bloch, 2020). Meanwhile, 4.8% and 3.9% of households in Bangladesh and India respectively spend over 25% of household consumption or income on OOP health payments.

On average, out-of-pocket spending as a share of total health expenditures in South Asia amounted to 50.8% in 2018; well above the out-of-pocket spending levels in Sub-Saharan Africa (33.3%) and low and middle income countries (36.6%) (World Bank, 2021g). The disparities in government health expenditures across the region are reflected in the respective out-of-pocket spending levels (Table 4): Afghanistan, where

⁴Data on military expenditure was unavailable for Bhutan and Maldives.

⁵Data on military expenditure was unavailable for Bhutan and Maldives.

government health expenditure accounted for just 5.2% of current health expenditure, lowest in the region, also accounted for the highest level of out-of-pocket expenditures (78.4%) in the region; while, Bhutan, where government health expenditure as a share of current health expenditure was the highest in the region (79.5%), accounted for the lowest share of out-of-pocket expenditures (13.2%).

Table 4. Government Health Expenditure and Out-of-Pocket Expenditure as a Share of Total Health Expenditure in South Asia

	Domestic general government health expenditure (% of current health expenditure) 2018	Out-of-pocket expenditure (% of current health expenditure) 2018
Afghanistan	5.2	78.4
Bangladesh	17.0	73.9
Bhutan	79.5	13.2
India	27.0	62.7
Maldives	70.6	20.6
Nepal	25.0	50.8
Pakistan	35.5	56.2
Sri Lanka	41.1	50.7
South Asia	37.6	50.8

Sources: World Bank (2021a, g).

Excessive OOP payments on healthcare reduces the ability of low-income households to consume non-health goods and services such as food and education, pushing them deeper into poverty. High healthcare costs could also lead to inadequate treatment or the lack of any treatment. Low-income households are also more likely to suffer jobs and earnings losses during crises, as they have less formal jobs with little to no job security or social protection and are therefore more vulnerable to health shocks (Razvi et al., 2017). Low-income households are also less likely to be able to afford emergency care compared to wealthier households, through private healthcare providers, during crises.

Southeast Asia

Southeast Asia is one of the most dynamic regions in the world, comprising high-income countries like Brunei and Singapore and fast-growing lower-middle income countries like Cambodia, Laos, Myanmar and Vietnam on the other end of the development spectrum. Yet, despite disparities in income levels and resources, while also being closely bound to China through trade and travel; countries across the region were in large part able to outperform the rest of the world in managing the pandemic during 2020. Singapore (Kuguyo, 2020), Vietnam (Tran et al., 2020) and Malaysia (Passeri, 2020), were hailed as success stories in their rapid response to the pandemic.

However, at the time of writing, the region experiences a steep rise in cases due to the rapid transmission of mutated variants of the virus. Clusters have been found at border crossings, hospitals and quarantine facilities and have forced multiple countries into lockdowns (The Economist, 2021). Southeast Asia recorded 4,029,513 cases (2.4% of global cases) and 78,888 deaths (2.2% of global deaths) at the time of writing. Indonesia accounts for the highest number of cases and deaths in the region, with 1,821,703 cases (45.2% of total cases in the region) and 50,578 deaths (64.1% of total deaths in the region). Brunei had the lowest number of cases with just 242 cases. Indonesia has the highest case fatality ratio of 2.8%, while Singapore has the lowest case fatality ratio of 0.05% in the region.

Despite recent surges, Southeast Asia, identified as a hotspot for emerging zoonoses and infectious diseases, is better equipped to detect and respond to new diseases as a result of previous outbreaks, such as SARS, H5N1, and H1N1, which spread throughout the region in the early 2000s. Southeast Asia scored an average GHS of 50.6 out of 100 in 2019, highlighting the region's elevated level of preparedness compared to South Asia. Preparedness levels varied across the region; Thailand with a score of 73.2

was the most prepared in the region (and the 6th most prepared, globally) while Brunei Darussalam was the least prepared, with a score of 32.6. Malaysia ranked 18th globally with an overall score of 62.2 (Table 5).

Table 5. Categories of the Global Health Security Index of Southeast Asian Countries

Country	Lending Group	Global Health Security Index						
		Overall Score	Prevent	Detect	Respond	Health	Norms	Risk
Brunei	High-income	32.6	24.8	30.5	33.4	24.2	23.3	66.7
Cambodia	Lower-middle income	39.2	28.6	57.7	36.7	12.0	60.0	38.5
Indonesia	Upper-middle income	56.6	50.2	68.1	54.3	39.4	72.5	53.7
Laos	Lower-middle income	43.1	18.9	70.4	52.0	19.4	45.9	46.8
Malaysia	Upper-middle income	62.2	51.4	73.2	61.3	57.1	58.5	72.0
Myanmar	Lower-middle income	43.4	30.3	59.2	50.4	19.5	59.1	38.2
Philippines	Lower-middle income	47.6	38.5	63.6	43.8	38.2	49.8	50.3
Singapore	High-income	58.7	56.2	64.5	64.6	41.4	47.3	80.9
Thailand	Upper-middle income	73.2	75.7	81.0	78.6	70.5	70.9	56.4
Vietnam	Lower-middle income	49.1	49.5	57.4	43.0	28.3	64.6	53.4
Southeast Asia		50.6	42.4	62.6	51.8	35.0	55.2	55.7

Source: GHS Index (2020); World Bank (2021k).

Southeast Asia performed well in terms of detection and reporting (62.6), risk environment (55.7), compliance with international norms (55.2) and rapid response (51.8). Early detection and reporting include indicators that assess laboratory systems, surveillance and reporting; elements that are crucial for the identification of epidemics of potential international concern. The risk environment evaluates the political, environmental and security risks as well as public health vulnerabilities that could affect a country's ability to prevent, detect, or respond to a public health emergency. Compliance with international norms entail commitments to improving national capacity, financing plans and adherence to global norms and includes cross-border

agreements on public health emergency response, international commitments and the completion of performance and capacity assessments.

In Southeast Asia, domestic general government health expenditure as a share of GDP accounted for 1.8% in 2018, and the average government health expenditure for the region's most populous countries (Indonesia, the Philippines and Vietnam) was 1.9% of GDP (Table 6). Health expenditure as a share of total expenditure in Southeast Asia was 8.3% in 2019. Spending levels were comparatively higher across Southeast Asia than in South Asia, but the region experienced similar (albeit smaller) variations in expenditure levels; shares ranged from 3.5% in Myanmar to 15.3% in Singapore. Disparities in health systems across Southeast Asia exist owing to differences in economic development between countries, with a mix of public and private service delivery and financing, and new organisational forms such as corporatised public hospitals (Chongsuvivatwong, et al., 2011).

Out-of-pocket expenditure in Southeast Asia, on average, only accounted for 39.8% of current health expenditure in 2018: well below the level for lower middle income countries (55.7%) and slightly higher than the levels for upper middle income (33.2%) and low and middle income (36.6%) countries. Myanmar, where government health expenditure as a share of current health expenditure accounted for just 14.8%, lowest in the region, also accounted for the highest level of out-of-pocket expenditures as a share of total health expenditures (76.4%). Government expenditure as a share of current expenditure was highest in Brunei (95.1%). Brunei also accounted for the lowest level of out-of-pocket expenditures (4.9%) in the region.

Table 6. Health Expenditure and Infrastructure Indicators Influencing Pandemic Preparedness in Southeast Asia

Country	Population	Domestic general government health expenditure (% of GDP)	Domestic general government health expenditure (% of general government expenditure)	Hospital beds (per 1,000 people)	Domestic general government health expenditure (% of current health expenditure)	Out-of-pocket expenditure (% of current health expenditure)
		2018	2018	2017 (MRE)	2018	2018
Brunei	428,962	2.3	7.1	2.9	95.1	4.9
Cambodia	16,249,798	1.3	5.2	0.9	21.3	57.5
Indonesia	267,663,435	1.4	8.5	1.0	49.3	34.9
Laos	7,061,507	0.9	4.4	1.5	38.7	48.5
Malaysia	31,528,585	1.9	8.5	1.9	51.2	35.1
Myanmar	53,708,395	0.7	3.5	1.0	14.8	76.4
Philippines	106,651,922	1.4	6.6	1.0	32.7	53.9
Singapore	5,638,676	2.2	15.3	2.5	50.3	31.0
Thailand	69,428,524	2.9	15.0	2.1	76.3	11.0
Vietnam	95,540,395	2.7	9.3	2.6	45.6	44.9
Southeast Asia		1.8	8.3	1.7	47.5	39.8

Sources: World Bank (2021a,b,c,d,g,i,y).

Conclusion and the Way Forward

Southeast Asia's experience with SARS and H1N1 epidemics exposed the weaknesses of its health system, instilling the need to recognize the threat of infectious disease outbreaks and invest in necessary infrastructure and capabilities to combat future outbreaks. However, it is easy to become desensitised and complacent over time, reverting back to old habits during inter-pandemic periods; hence, the lack of preparedness and the poor execution of these strategies to manage COVID-19. Therefore, sustainable interventions are of utmost importance to prevent the regrettable repetition of another pandemic, which could easily be avoided with the right consistency in preparation; to prevent the same, or even more severe social, economic and development damage. While South Asia was largely spared from infectious disease outbreaks in the

past, COVID-19 has exposed the region to the growing threat of zoonotic diseases. Despite weathering the initial stages of the pandemic with surprising success, given the region's low level of preparedness, the recent surge in case numbers have exposed the deep-rooted vulnerabilities of the region's health systems. Therefore, as South Asia comes to the sobering realization that disease outbreaks are becoming increasingly commonplace, pandemic preparedness must be prioritized as a matter of economic and national security.

For countries to successfully counter the growing threat of disease outbreaks, sustained funding is a necessity. While national governments might find the mobilization of resources to prevent future pandemics, an invisible enemy as opposed to the very real effects of the COVID-19-induced economic downturn, unsavoury; they must realize that the COVID-19 pandemic and its heavy economic cost are in fact the result of past failures to efficiently mobilize adequate resources. As the threat of future pandemics looms over South Asia; preparedness activities should be an ongoing function and therefore, additional resources to strengthen public health capacities need to be mobilized through sustainable sources of domestic financing. Fiscal space for social spending such as health can be enhanced by assessing on-going budget allocations to eliminate spending inefficiencies and reallocate public expenditure from high-cost, low-impact investments to those with larger socio-economic impacts (Ortiz, et al., 2017). Resources can be diverted from military spending, where expenditure is higher than health expenditure in South Asia, to mobilize additional investment towards public health given the growing threat of infectious diseases in the region. In 2001, Thailand financed its Universal Health Care Scheme by reducing defence spending to ensure that the scheme was accessible to a larger proportion of its population, especially those that belonged to the informal agricultural sector.

Revenue for social spending can also be generated by increasing tax revenue if reprioritisation of expenditures is not an option. VAT and consumption taxes on basic goods are regressive and can negatively affect low-income households, increasing inequality. Therefore, tax revenue should be generated through more progressive taxes such as excise taxes and luxury goods taxes. There is also room to improve progressive taxation -direct taxes- in countries like the Maldives and Sri Lanka where inequality is high. Overall tax administration and compliance processes should be reinforced to enhance efficiency and sustain revenue collection. External assistance through international development agencies can also be utilized as additional sources of funding to overcome resource gaps and build capabilities in preparedness activities.

South Asian countries should conduct preliminary assessments to identify pandemic preparedness levels and institutional capacities at the national, district and local levels. A pandemic preparedness plan should establish responsibilities and best practices for public health authorities at the national, state, district and community levels to eliminate ambiguities during public health emergencies. These activities can be regularly reviewed on their effectiveness based on new and emerging information obtained through surveillance and information sharing tools. However, not all countries in the region will have the resources or the expertise to design preparedness plans or successfully implement preparedness activities. And a global pandemic response is only as strong as its weakest link. Inequalities in preparedness capacity and resource availability gaps in countries can be addressed through regular capacity building and training programmes and collaboration with bilateral and multilateral partnerships with institutions such as the WHO, CDCP and the European Centre for Disease Prevention and Control (ECDC).

A comprehensive national pandemic preparedness plan to bolster public health security and strengthen the capacities and capabilities of public health infrastructure should include preparedness activities such as: enhancing disease surveillance capabilities at the national, state, district and community levels, while incorporating elements of animal health; ramping up laboratory diagnostic capabilities to enable the rapid identification of specimens; training programs for field epidemiologists; awareness and training programs to enhance community threat surveillance, especially among agricultural communities; expanding and upskilling the national health workforce through routine training and educational programs; increasing the number of intensive care beds, critical medicines and equipment and personal protective equipment (PPE). These efforts should be supplemented by country level interventions to address socioeconomic inequalities and vulnerabilities that cripple South Asia's ability to fight infectious disease outbreaks: poverty alleviation, improvements in living conditions in densely populated areas, universal health coverage and access to affordable medicines.

In addition to national preparedness strategies, South Asia should devise a preparedness plan at the regional level, considering the cross-border nature of disease outbreaks, to facilitate collective regional action to prevent, identify and respond to future pandemics. A working group on regional health security can be established to formulate and oversee cross-border cooperation in pandemic preparedness activities: disease surveillance, information sharing and early warning systems; capacity building and training activities; laboratory networks; deployment of medicines, vaccines and healthcare equipment.

Pandemic preparedness is not cheap, however, its cost is far less than the alternative that COVID-19 has so callously demonstrated: the human and economic cost of a pandemic. As such, the vulnerabilities that affect the economic, social and

development progress of South Asia with the threat of emerging zoonotic diseases should be taken into serious consideration; the relevant actors and institutions in the region must take responsibility to respond to future pandemics with active consistency and a sense of urgency, in relation to the mechanisms mentioned. These have the potential to enhance regional preparedness for a shared sense of mutual benefit.

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Determination of Parameters of Moving Up and Down of the Price of a Share in the Binomial Option Pricing Model Using the Ito Lemma. A Short Research Memo

Burenin Aleksey

Moscow State Institute (University) for International Relations,

Moscow, Russia

Email: anburenin@mail.ru

Abstract

The article discusses the approach to determining the parameters of the binomial model for estimating the premium of the American stock option, which is presented in the article "Option Pricing: A Simplified Approach" by Cox et al. (1979), and an alternative solution to the problem using Ito's lemma. They determined the parameters of the model based on the return on the underlying stock in the real world, and not on the risk-free rate, as required by theory. However, when passing to the limiting case, their solution to the problem turns out to be correct. The use of Ito's lemma made it possible to obtain a solution similar to the solution of Cox et al. (1979) and to answer the question why, when passing to the limiting case, the technically incorrect solution of Cox et al. turned out to be correct. From the solution of the stochastic differential equation, it can be seen that, at infinitely small time intervals, the variance is the determining parameter of the dynamics of the share price, and the trend becomes virtually indistinguishable. Accordingly, the fact that when finding the model parameters they used the actual stock return as a trend, and not the risk-free rate, did not affect the model parameters in the limiting case.

Keywords: lemma Ito, risk-neutral valuation, geometric Brownian motion, binomial model, Girsanov theorem.

JEL codes: G12, G13, G17

Introduction

The Black-Scholes-Merton formula is used to estimate the premium for European share options that do not pay dividends during the option contract. For American options, it is impossible to determine an analytical formula for their price, since the options can be exercised on any day in the life of the contract. Binomial models are used to evaluate them. There are at least eleven different versions of the binomial model (Chance, 2008).

The most famous and cited is the version of the model proposed by Cox et al. (1979) in

the article "Option Pricing: A Simplified Approach". To assess the option premium, it is necessary to determine such parameters as the growth and fall rates of the share price at each time interval and the probability of these events. Cox et al. (1979) determine the parameters of the model based on the expected return and variance, which characterize the dynamics of stock returns in the real world. However, according to the theory, the option premium is estimated in a risk-neutral world, therefore, to determine the parameters of the model, we need not the actual return on the underlying share, but the risk-free rate, not the actual, but the risk-neutral probability of the share price growth. Nevertheless, the model parameters obtained by Cox et al. 1979) give the correct result in the limiting case, when the number of sub-periods by which the period of the option contract is divided tends to infinity. Thus, with a technically incorrect approach to determining the parameters of the model, the authors received the correct solution (Chance, 2008, 42).

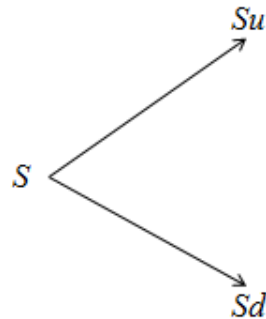
The parameters of the binomial model can be alternatively obtained using Ito's lemma. This approach also makes it possible to clearly explain the indicated paradox, why, with a technically incorrect approach to solving the problem, Cox et al. (1979) in the limit received the correct answer.

Findings

In the article "Option Pricing: A Simplified Approach", Cox et al. (1979) consider the binomial model for determining the price of a stock option (Neftci and Hirsu, 2000). The unknown parameters of the model that need to be determined are the growth and fall rates of the share price at each time interval and the probability of these events. The rate of return on the stock over each period can have two possible values: $u - 1$ with probability q , or $d - 1$ with probability $1 - q$. Thus, if the current stock price is S , the stock price at the

end of the period will be either uS or dS » (Cox et al, 1979, p. 232). The binomial process of the stock price dynamics at the first step can be represented as in :

Binomial One-period Stock Price Model.



Cox et al. (1979) determine the parameters u and d based on the expected return and the variance of the stock return in the real world. They choose these parameters so that they meet the condition (Neftci and Hirsra, 2000, p. 249):

$$\begin{aligned} [q \ln(u/d + \ln d)]n &\rightarrow \mu t \\ q(1-q)[\ln(u/d)]^2 n &\rightarrow \sigma^2 t \end{aligned} \quad \text{as } n \rightarrow \infty$$

Thus, they solve the system of equations:

$$\begin{aligned} [q \ln(u/d + \ln d)] &= \mu(t/n) \\ q(1-q)[\ln(u/d)]^2 &= \sigma^2(t/n) \end{aligned} \quad (1)$$

where t is the life of the option contract;

n is the number of periods into which the time interval t is divided;

μ and σ are the actual expected return and the standard deviation of the return on the stock;

q is the probability of a rise in the share price.

This system contains two equations and three unknown parameters, namely u , d and q . Therefore, the following condition is imposed in the model: $ud = 1$. It says that the rate of growth and decline are related as $d = 1 / u$. This assumption becomes more and

more true when dividing the life of the option contract into smaller and smaller sub-periods.

Solving the system of equations (1), Cox et al. (1979) get the answers:

$$u = e^{\sigma\sqrt{t/n}}, \quad d = e^{-\sigma\sqrt{t/n}} \quad \text{и} \quad q = \frac{1}{2} + \frac{1}{2} \frac{\mu}{\sigma} \sqrt{t/n}.$$

One interesting point should be emphasized. Since the equations use the actual values of the expected return and variance of the stock, the resulting probability q also corresponds to the actual probability of the stock price growth. However, it is known that the valuation of derivatives is carried out on a risk-neutral basis. In the risk-neutral world, the probabilities of rising and falling stock prices are not actual, but risk-neutral probabilities. Similarly, the expected return on a stock is not the actual return, but the return equal to the risk-free rate. Therefore, as Chance (2008) notes, the parameters μ and q are not needed to estimate the option premium in the framework of a risk-neutral approach. As a result, in order to guarantee the no-arbitrage condition of the model, the authors discard the solution for q and use the risk-neutral probability in the model. At the same time, they save the formulas for the parameters u and d . Chance (2008) also emphasizes that technically the formulas for u and d is not true for a finite number of subperiods n , but the solution for u and d is true in the limit (Chance, 2008, p. 42), that is as $n \rightarrow \infty$.

The solution for u and d can be obtained without solving the system of equations (1) if we use Ito's lemma. In addition, this approach will explain the paradox noted above, when using technically incorrect parameters, the authors of the model nevertheless received the correct answer for the limiting case.

In the binomial model, the dynamics of stock returns follows a geometric Brownian motion, namely the following stochastic differential equation (SDE):

$$dS_t = \mu S_t dt + \sigma S_t dW_t, \tag{2}$$

where μ is the instantaneous expected return on the stock;

σ is the instantaneous standard deviation of stock returns;

W is a random variable that follows the Wiener process;

dt is an infinitely small time interval.

As known, the option premium is estimated not in the real world, but in a risk-neutral world. To move from an actual world to a risk-neutral one, it is necessary to change the probability measure, keeping the variance of the process unchanged. For this, the Girsanov theorem serves. It says that Brownian motion with measure P and Brownian motion with measure Q are related as follows:

$$dW_t^Q = dW_t^P - \gamma dt, \text{ where } \gamma \text{ is the trend of the generalized Brownian motion.}$$

Hence: $dW_t^P = dW_t^Q + \gamma dt$.

Substitute in SDE (2) the value $dW_t^Q + \gamma dt$ instead of dW_t^P :

$$dS_t = \mu S_t dt + \sigma S_t (dW_t^Q + \gamma dt)$$

or

$$dS_t = (\mu + \sigma\gamma) S_t dt + \sigma S_t dW_t^Q$$

Now the random error in the SDE is modeled by Brownian motion W_t^Q for the measure Q . For this measure, the trend became equal to: $\mu + \sigma\gamma$. Since the option premium is priced in a risk-neutral world, our task is to make it equal to the risk-free rate.

To do this, let's equate the trend to the risk-free rate (r) :

$$\mu + \sigma\gamma = r$$

From here we get:

$$\gamma = -\frac{\mu - r}{\sigma}$$

If the parameter γ is determined in this way, then the trend in the SDE will be equal to the risk-free rate. Accordingly, SDE (2) will take the form:

$$dS_t = rS_t dt + \sigma S_t dW_t \quad (3)$$

Thus, we have moved on to the SDS, which the share price follows in a risk-neutral world. In this case, the variance of the process remained unchanged.

Consider the last equation (3). It consists of a deterministic term $rS_t dt$ and a stochastic term $\sigma S_t dW_t$. The first defines the trend in the movement of the stock price, the second shows how the actual values of the stock price are scattered around the trend line at any given time. A characteristic feature of a trend is that it becomes distinguishable only over relatively long time intervals. Over short periods of time, the dynamics of the share price is mainly determined by its volatility, i.e. the second term.

The binomial model assumes dividing the period of the life of the option contract into a large number of sub-periods. Ideally, the time interval should tend to zero $dt \rightarrow 0$. In equations (2) and (3), W_t is the Wiener process, which is defined as $W_t = \varepsilon \sqrt{dt}$, where ε is the implementation of a normally distributed standard random variable. Taking into account this remark, we rewrite equation (3):

$$dS_t = rS_t dt + \sigma S_t \varepsilon \sqrt{dt}$$

Then, for $dt \rightarrow 0$, the term $rS_t dt$ will tend to zero faster than $\sigma S_t dW_t$. Therefore, let us assume some liberty in our proof¹ and for infinitely small time intervals we omit the first term as a higher order term and write:

$$dS_t = \sigma S_t dW_t \quad (4)$$

Let's solve equation (4). For this we use Ito's lemma. Let $G_t = \ln S_t$. Let us write down Ito's lemma. For simplicity, we omit the time indices for the terms:

$$dG = \frac{\partial G}{\partial S} dS + \frac{\partial G}{\partial t} dt + \frac{1}{2} \frac{\partial^2 G}{\partial S^2} dS^2$$

¹ The liberty in this case is that, according to the general rules in stochastic calculations, the terms of order $(dt)^2$ are infinitesimal, and not dt .

The derivatives of G with respect to S and t are:

$$\frac{\partial G}{\partial S} = \frac{1}{S}, \quad \frac{\partial^2 G}{\partial S^2} = -\frac{1}{S^2}, \quad \frac{\partial G}{\partial t} = 0$$

Substitute the derivatives and the expression for dS into Ito's lemma:

$$d \ln S_t = \frac{1}{S_t} \sigma S_t dW_t - \frac{1}{2S_t^2} \sigma^2 S_t^2 dt$$

or

$$d \ln S_t = \sigma dW_t - \frac{1}{2} \sigma^2 dt$$

$$\int_0^t d \ln S_k = \int_0^t \sigma dW_k - \int_0^t \frac{1}{2} \sigma^2 dk$$

$$\ln S_k \Big|_0^t = \sigma W_k \Big|_0^t - \frac{1}{2} \sigma^2 k \Big|_0^t$$

$$\ln S_t - \ln S_0 = \sigma W_t - \frac{1}{2} \sigma^2 t,$$

since by definition, $W_0 = 0$.

$$\ln S_t = \ln S_0 + \sigma W_t - \frac{1}{2} \sigma^2 t$$

$$S_t = S_0 e^{\sigma W_t - \frac{1}{2} \sigma^2 t} \quad \text{или} \quad \frac{S_t}{S_0} = e^{\sigma W_t - \frac{1}{2} \sigma^2 t}$$

Again, let us take some liberties in our proof in the sense that at infinitely small time intervals, the parameter $\frac{1}{2} \sigma^2 t$ in the numerator of the exponent will disappear

faster than $\sigma \sqrt{t}$. Therefore, for such conditions, we omit the second term and get:

$$\frac{S_t}{S_0} = e^{\sigma W_t}.$$

Let us denote the increase in stock returns in the binomial model by R. It is defined as $R = \frac{S_t}{S_0}$. Therefore $R = e^{\sigma W_t}$. Taking into account that $W_t = \varepsilon \sqrt{dt}$, we get: $R = e^{\sigma \varepsilon \sqrt{t}}$.

We are considering the binomial process, when the stock price can only go up or down. Accordingly, in the last formula, ε can take only two values: +1 if the stock price has risen, or -1 if it has fallen. Substituting the value of $\varepsilon = +1$ into the formula, we get the parameter $u = e^{\sigma\sqrt{t}}$. When substituting the value of $\varepsilon = -1$, we get the parameter $d = e^{-\sigma\sqrt{t}}$. This result is nothing more than the parameters u and d in the model of Cox et al. (1979).

Let us compare equations (2) and (3). They differ only in the first term. Therefore, if we take equation (2) with the actual expected return (μ) and for the condition $dt \rightarrow 0$, then, following the steps already taken, we will again get the result $u = e^{\sigma\sqrt{t}}$ and $d = e^{-\sigma\sqrt{t}}$, since over an infinitely short period of time, the trend plays practically no role in the dynamics of the stock price. Therefore, it is not surprising that Cox et al. (1979) in the limit received the correct solution with a technically incorrect approach to the parameters of the model.

Conclusions

This article discusses the approach to determining the premium of the American stock option, which is presented in the article by Cox et al. (1979) entitled "Option Pricing: A Simplified Approach", and gives an alternative approach to determining the parameters of the model using Ito's lemma. The approach to solving the problem by Cox et al. (1979) can be characterized as technically incorrect, since they determine the parameters of the model not in a risk-neutral world, as required by the option pricing theory, but using the characteristics of the underlying stock in the real world. However, when passing to the limiting case, their solution to the problem turns out to be correct.

The use of Ito's lemma made it possible to obtain a solution similar to that of Cox et al. (1979). In addition, the use of SDE in solving this problem allowed us to give a clear answer to the question why, when passing to the limiting case, the technically incorrect solution of Cox et al. (1979) turned out to be correct. As can be seen from the SDE solution, on time intervals tending to zero ($dt \rightarrow 0$), the determining parameter of the stock price dynamics is the variance, and the trend becomes virtually indistinguishable. Accordingly, it does not play a role in determining the parameters of the model. In this regard, the fact that they used the actual stock return, and not the risk-free rate, as required by theory, did not affect the parameters of the model in the limiting case. They used the actual variance of the stock's return. This parameter is also used in a risk-neutral world and is decisive in solving the problem. They also obtained the correct result because, having received the actual probability of an increase in the stock price, they replaced it with a risk-neutral probability, as required by theory.

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COVID-19 and Its Reflections on SMES in Developing Countries Experience of Sri Lanka

H.M.S.L. Wijeyewardena

National Enterprise Development Authority

Colombo, Sri Lanka

Email: lakshmanwijeyewardena@gmail.com

WJKVMR Jayawardhane

National Enterprise Development Authority

Colombo, Sri Lanka

Email: manjineda@gmail.com

Abstract

In response to the COVID 19 outbreak, many countries have declared restrictive measures in order to protect their community. Due to imposition of these measures, dramatic losses have occurred in human lives as well as to the economies of countries. The economic disruption caused by the pandemic severely impacted on Micro Small & Medium enterprises (MSMEs) in the affected countries including Sri Lanka. Hence many Sri Lankan entrepreneurs were unable to provide for themselves and their families as a result of partial closures of their daily business operations under travel restrictions being imposed. Soon after the outbreak of the COVID 19 pandemic, the Sri Lankan government began extending financial & other forms of non-financial assistance to MSMEs and their workers as these enterprises are became more vulnerable to negative shocks and to their supply chain, particularly labor supply, and marketing for their goods and services. In order to make necessary interventions on behalf of MSMEs, The National Enterprise Development Authority (NEDA) Sri Lanka together with the Ministry of Industries have conducted a survey to identify how this pandemic impacted on Sri Lankan MSMEs. In this regard an awareness campaign was conducted through newspaper advertisements and the Enterprise Development Officers of NEDA who are located around the country. Responses were obtained through a structured questionnaire and analyzed using the SPSS software. Findings of the survey revealed that majority of the MSMEs have collapsed financially, and they face different challenges in increasing the number of daily customers due to the prevailing situation in the country. Further this study depicts the short term, medium term and the long-term interventions to be taken by the government in order to uplift the affected entrepreneurs from the ceasing their business. Also, the pandemic opened up opportunities to mobilize and widen existing local production due to the depletion of foreign reserves. Therefore, aggressive motivation of research and development organization and universities to begin undertaking research that can bring about commercialized out puts using out of the box approaches by relaxing old and archive laws restricting valuable human assets only to teaching and undertaking primary research by restricting them to venture in to commercial activities.

Keywords: COVID 19, Entrepreneurs, MSMEs, Sri Lanka

JEL codes: L2, M1, O3

Introduction

According to the Population and Housing Census, 2012 the demographic composition of Sri Lanka is composed of Sinhala (74.9%), Tamil (15.3%), Muslim (9.3%) and Other (0.5%). And there were also 1,019,681 total economic establishments in Sri Lanka including micro (935,736), small (71,126), medium (10,405) and large (2,412) enterprises covering industry, trade and services (Department of Census and Statistics Sri Lanka, 2015). Due to the COVID 19 pandemic, most of the micro, small and medium enterprises (MSMEs) are facing challenges and difficulties to continue their business operations from 13th March 2020. However, a very small percentage of business are either running or expanded their business operations with the integration of technology and building partnerships with online service providers. Further, MSMEs provide jobs to 45% of the country's working population and generates over half of Sri Lanka's Gross Domestic Product.

The outbreak of COVID-19 pandemic has impeded the political, social, economic, religious, and financial fabric of Sri Lanka and world in general. The pandemic is having a significant impact on global economic growth. Estimates so far indicate the virus could cut the global economic growth by as much as 2.0% per month, if current conditions continue - year 2021 (National Study on Impact of COVID-19 Pandemic on Micro, Small and Medium Enterprises (MSME) in Sri Lanka , 2020). The crisis has already turned into an economic and labor market shock, affecting all businesses irrespective of their size. MSMEs around the world having been hit hard by the impact of the COVID-19. This impact on millions of MSMEs, are a threat of long-term economic development and social welfare worldwide. It is important to protect jobs, the sustainability of enterprises, protect

workers and their families, especially the most vulnerable and those in the informal

economy, in these difficult times. MSMEs around the world can play a crucial role in preventing further increases in unemployment, poverty, and food insecurity rates, especially in low-income and conflict-affected countries. While the containment measures adopted have helped curb the outbreak, they have had a substantial negative impact on economic activity on the domestic front (Central Bank of Sri Lanka, 2020). The declaration of holidays, curfew, restricted public services, and other measures to contain human movement including the shutdown of airports and seaports for passenger traffic will affect several key economic sectors. With approximately 60 per cent of those employed being engaged in the informal sector and an estimated 1.9 million being daily wage earners, a large number of households is likely to be in a precarious position (Central Bank of Sri Lanka, 2020). Depletion of foreign exchange will compel to restrict imports. But, in Sri Lanka, even before covid pandemic, government took decision to mobilize local production of imported items potentially being produced here. Therefore, in that respect, situation created by COVID -19 has motivated local production.

A very small percentage of business are either running or expanded their business operations with the integration of technology and building partnerships with online service providers. Government of Sri Lanka also instructed government and private banks to provide economic relief for citizens including the business community. CBSL has introduced wide-ranging debt moratorium for tourism, plantation, IT and apparel sectors, related logistics providers and MSMEs, including working capital loans and investment purpose loans at concessional rates, leasing loans for three wheelers, small value personal banking and leasing loans and rescheduling of non-performing loans.

Other key initiatives that were undertaken include the introduction of the 'Saubagya COVID-19 Renaissance Facility', which provides working capital for adversely affected businesses to revive their activities. Sub loans have been released to farmers

through licensed banks under the subsidized 'New Comprehensive Rural Credit Scheme' (Central Bank of Sri Lanka, 2020). Over the last century, economies have grown exponentially with greater interdependence, greater international trade, and increased transit. As a consequence, the confusion in economies such as China and the United States will have a huge impact everywhere in the world. It is estimated that the current epidemic will cost the global economy \$ 2-4 trillion (UNCTAD, 2020). As a result, MSMEs that rely on imported goods and raw materials will suffer a major economic downturn. According to the Economy next (2020), the impact of the virus will cost Sri Lanka's economy 1.5% of the GDP. Further, due to the lockdown & global shocks with a slowing economy, Inflation is expected to stay at an average of 5.0% in 2020 from a 4.3% in 2019 driven by high food prices and supply chain disruptions, followed by a marginal decline in 2021 to 4.8%.

MSMBED and its institutions are receiving appeals and requests from MSMEs on how to resolve collateral issues, CRIB report, salary payment and submission of EPF reports as pre-requirements to obtain debt moratorium from banks and financial institutions.

A survey report published by then MSMBED, reflects impacts of COVID-19 pandemic being spread to each sector of businesses, all over the country irrespective of districts with more than 80% negative impact.

The commencement of lay-off / termination is rising due to lack of working capital to pay salaries added to curtailed incentives and bonus. A percentage of 3.3% employment loss is shown in the survey sample and it is forecasted that approximately 224,808 employments loss for the country for two months. Further, it is forecasted that COVID-19 has cost approximately 8.8% of GDP of the country within two months. Cash

flow blockage and insufficient working capital are the serious issues faced by MSMEs. The

minimum average working capital requirement forecasted for a MSME is around Rs. 9 million and this amount can be depicted as Rs. 1- 2 million for micro, Rs. 3-5 million for small, Rs. 6-8 million for medium and above Rs. 10 million for large scale enterprises. The finding of the survey confirms that still Sri Lankan banking system is not fully catering to micro and small entrepreneurs. Young generation's lesser involvement in the entrepreneurship in our country is an alarming fact which portrays the insufficient contribution of the youth in national development process. The Sri Lanka does not have a proper insurance and other protection schemes for micro and small business owners and their business. Findings reveal that when applying COVID-19 economic relief through banks and financial institutions, MSME respondents have faced many challenges and difficulties to produce suitable collateral, EPF documentation and Credit Investigation Bureau clearance.

This survey is a witness that indicate MSMEs in Sri Lanka has a great potential to improve its business models using online technologies where only 10% of MSMEs from rural areas do not have access to online facilities. Still, most of the micro and small entrepreneurs are not capable of online and virtual systems which are the main capacity building and technology transfer areas for the future MSMEs. The 9% of sample respondents are from agriculture, fisheries forestry shows that Sri Lankan MSME owners were not able to capitalize the potential of value-added food products manufacturing using national and international quality and other standards.

Purpose of the Study

By considering this crisis, a research was launched by National Enterprise Development Authority (NEDA) with the collaboration of other relevant institutions in 2020 to understand, how Covid-19 Pandemic was impacting on Sri Lankan MSMEs. The data

gathered through this study, brought out information to make necessary interventions by informing the development of short-term recovery, intermediate term rehabilitation, and long-term development resources in later stages. Furthermore, the research has provided insights into the latest situation of MSMEs in the Covid-19 pandemic and the government to understand the depths of losses of MSMEs.

The following conclusions drawn from the previous survey report are considered in providing short-term financial assistance in order to recover the losses they incurred during the Covid-19 outbreak.

- Cash flow blocked and insufficient working capital
- Highest demand for immediate cash grants
- Lack of confidence on banks and financial institution

In relation to the recommendations made based on conclusions, short term interventions are taken in order to mitigate losses incurred by MSMEs and rehabilitate the businesses being collapsed due to prevailing pandemic situation.

Data Collection Process and Analysis

In this regard, an awareness program was conducted through newspaper advertisements which were published both in Sinhala and Tamil mediums in order to inform MSMEs throughout the country. Apart from the newspaper advertisements, Development Officers (DOs) in all the districts attached to NEDA were deployed for facilitating MSMEs with further details needed and distributing applications to be filled. As a result of this hard work, filled applications were collected through DOs in Divisional Secretariat representing 25 districts. MSMEs who have access to the internet were sent online applications, while others handed over the applications by hand. As a result of the effort made by all the stakeholders involved in the study, 14,855 applications were received as

at 30th of December 2020. Out of the total number of applications received, 7,400 were in Sinhala medium while the rest of the applications from Tamil language.

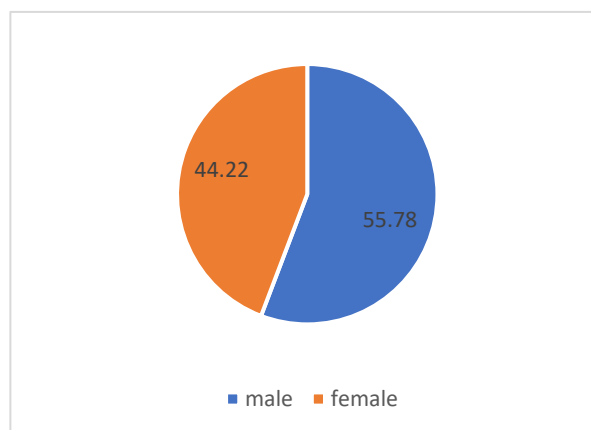
The study was based on the 12,741 applications entered from 20th of January 2021 to 19th of April 2021 by the newly appointed 14 graduate trainees. A questionnaire (annexure 01) was used as a data collection tool in this study and the SPSS software was used to analyze the data. The demographic characteristics and other related data were collected and analyzed through the responses received. The following figures are the analyzed data, collected through the questionnaire.

Profile of the Sample

Gender

There were 55.78% of male respondents and 44.22% of female respondents (Figure 1). It seems the involvement of women participants in the business sector has increased due to their contribution to the economy as self-employers.

Figure 1. Sex of Respondents

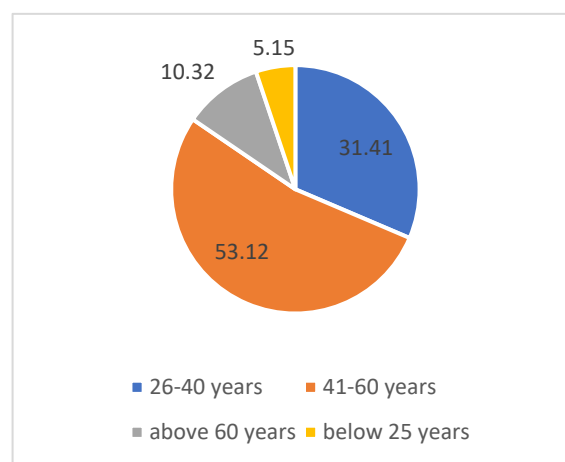


Source: retrieved from data

Age

Further, according to Figure 2, majority belongs to 41-60 age group (53.12%). It reflects that most of the participants who are in middle age are actively engaging in business activities and the proportion of 31.41% of entrepreneurs who are in the ages between 26-40 years which shows the interest that they have to rise as young businessmen who have a vast capacity in making the economy in the country stronger.

Figure 2. Age of Respondents

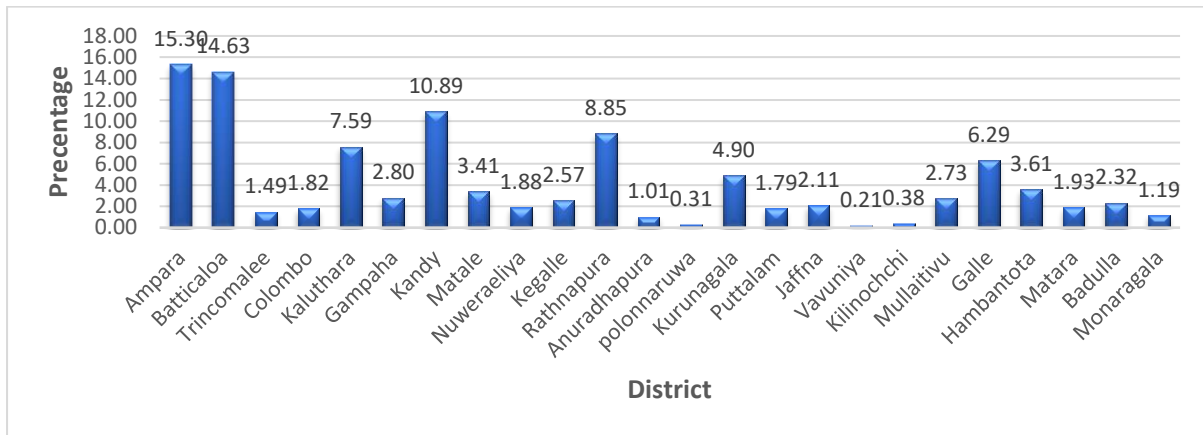


Source: retrieved from data

District wise Representation

Sri Lanka consist of 331 Divisional Secretary (DS) divisions, 24 Districts and 9 Provinces. Most of the samples (15.3%) responded from Ampara district, second highest (14.63%) response from Batticaloa followed by Kandy and Rathnapura districts. Figure 3 illustrates the percentage of respondent from each district. However, Ampara and Batticaloa represent higher percentage of Muslim population.

Figure 3. District wise Respondent for Questioner.



Source: retrieved from data

The following table depicts the distribution of the establishments by Districts and the Respondents who applied for the loans.

Table 1. Distribution of Establishments and the Respondents by District wise

District	No. of establishments (A)	Applicants (B)	Percentage of applicants out of total applications received (B/12741*100)	Percentage of applicants out of total establishments (B/A*100)
Ampara	30,550	1949	15.30	6.37
Batticaloa	29,135	1864	14.63	6.39
Trincomalee	16,565	190	1.49	1.14
Colombo	135,998	232	1.82	0.17
Kaluthara	60,717	967	7.59	1.59
Gampaha	127,734	357	2.80	0.27
Kandy	62,062	1387	10.89	2.23
Matale	25,784	435	3.41	1.68
Nuwaraeliya	24,779	239	1.88	0.96
Kegalle	35,452	327	2.57	0.96
Rathnapura	45,210	1128	8.85	0.28
Anuradhapura	43,715	129	1.01	0.29
Polonnaruwa	21,030	39	0.31	0.18
Kurunagala	86,788	624	4.90	0.71
Puttalam	44,894	228	1.79	0.50
Jaffna	34,128	269	2.11	0.78
Vavuniya	7,351	27	0.21	0.36
Kilinochchi	6,238	48	0.38	0.76
Mullaitivu	4,122	348	2.73	8.44
Galle	48,584	802	6.29	1.65
Hambantota	31,638	460	3.61	1.45
Matara	43,423	246	1.93	0.56
Badulla	30,457	295	2.32	0.96
Monaragala	18,846	151	1.19	0.801

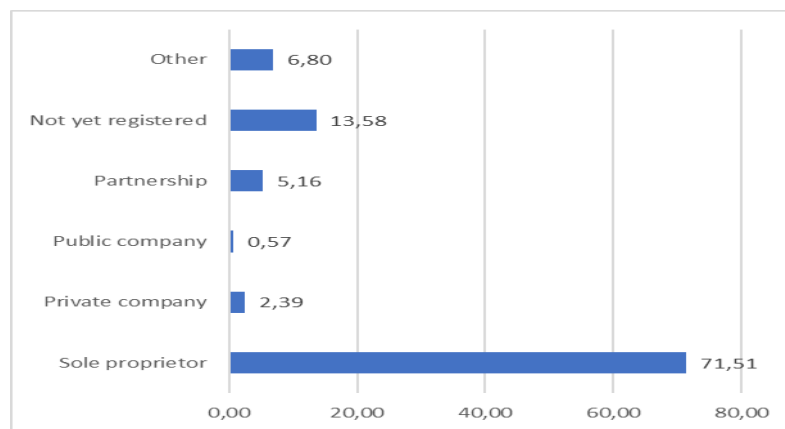
Source: prepared by author

Business Basics

a) Legal nature of business

Almost 71.51% of MSMEs has registered as sole proprietors and 13.58% of MSMEs are not registered their businesses yet as illustrated in Figure 4. It is evident that most of the applicants are sole proprietors. MSMEs who were chosen other option includes informal and micro business owners and those applied for pending registrations.

Figure 4. Legal Nature of Business.

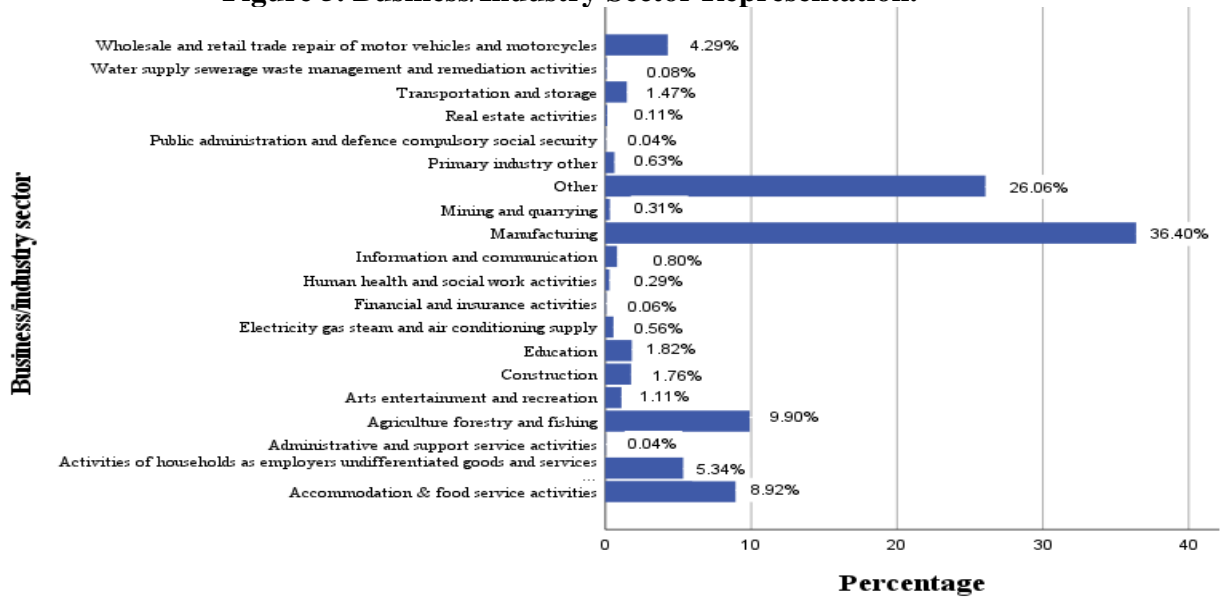


Source: retrieved from data

b) Business/industry sector representation

As shown in the Figure 5 below, about 36.4% MSMEs are classified under manufacturing sector according to the International standard categorization (ILOSTAT, 2020). 26.06% of them included under the other option, this may be due to the unawareness of their business classification. Agriculture, forestry and fishing, accommodation & food service activities, activities of households as employers, undifferentiated goods and services producing activities of households for own use and Wholesale and retail trade, repair of motor vehicles and motorcycles are majority of other sectors respond to this survey.

Figure 5. Business/Industry Sector Representation.

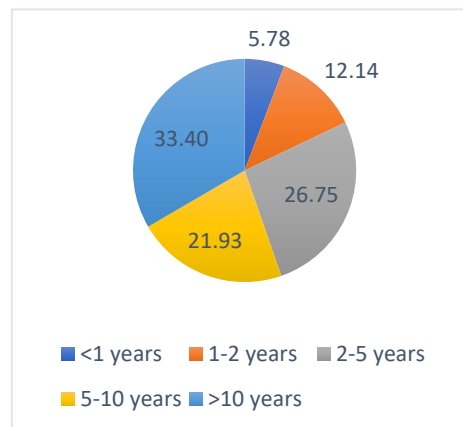


Source: retrieved from data

c) Duration of business operations

Most of the MSMEs carried out their business operations more than 10 years and 5.78% of them involving in business operations less than one year as shown in Figure 6. According to the results most of the participants who requested the loans, engage in business operations for more than 2 years. A very few amount of the MSMEs who are in introductory stages of business life cycle has involved in this survey.

Figure 6. Business Operational Periods.

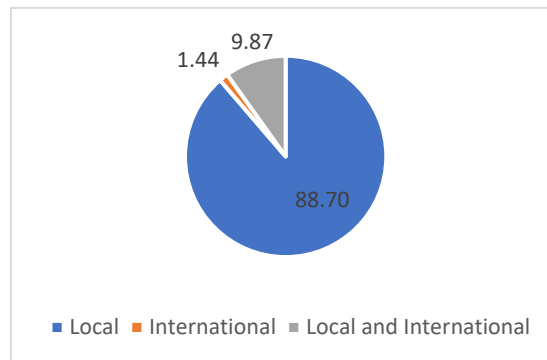


Source: retrieved from data

d) *Market destinations of the business*

The Figure 7 indicates the location of business operations and 88.7% of MSMEs are operate their businesses within the country. Only 1.44% of them are involving in international businesses. International trade sector may not be felt from cash flow issues; it may be due to their well-established organizations.

Figure 7. Business Focus Market.



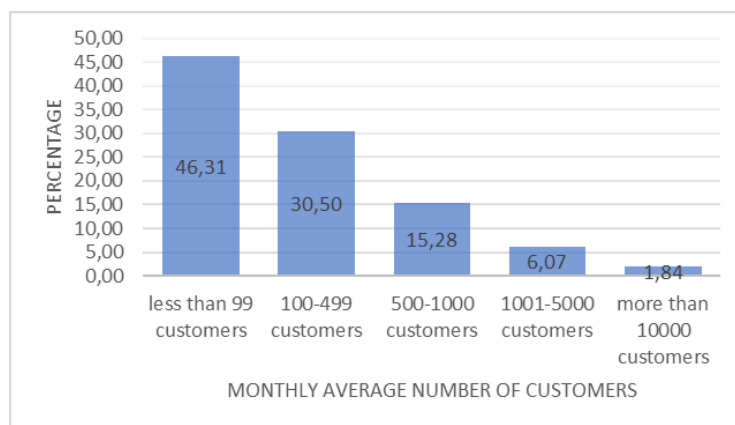
Source: retrieved from data

Findings

Impact on Customers

Before Covid -19, 46.31% of MSMEs had the least number of customer base which was lesser than 99 monthly average of customers while the highest number of customer base which was more than 10,000 customers had the percentage of 1.84 (Figure 8).

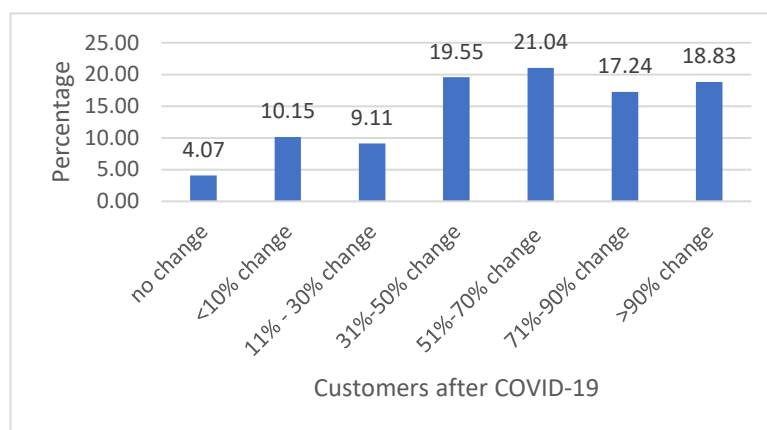
Figure 8. Monthly Average Number of Customers before COVID-19 Pandemic.



Source: retrieved from data

As shown by Figure 9, 57.11% of respondents reported that their monthly average number of customers have decreased more than 50% after COVID-19 Pandemic. Only 4.07% of respondents reported that there is no change in average number of customers. Which means, most of the businesses have been affected due to the pandemic.

Figure 9. Monthly Average Number of Customers after COVID-19.

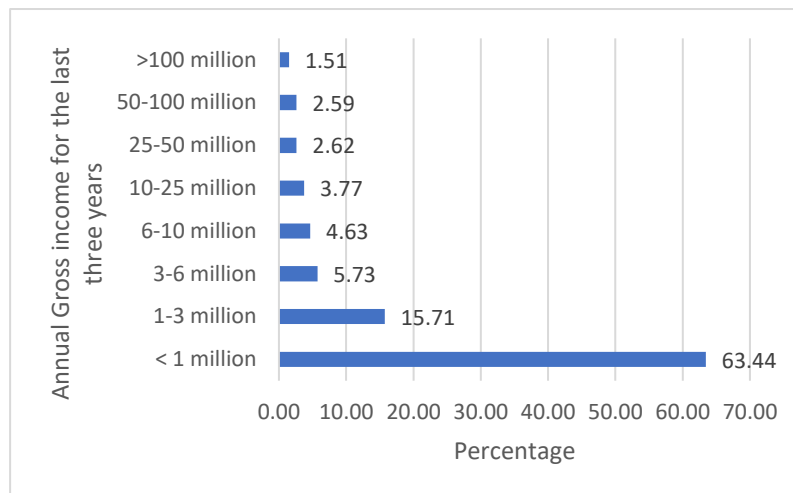


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Impact on Annual Gross Income

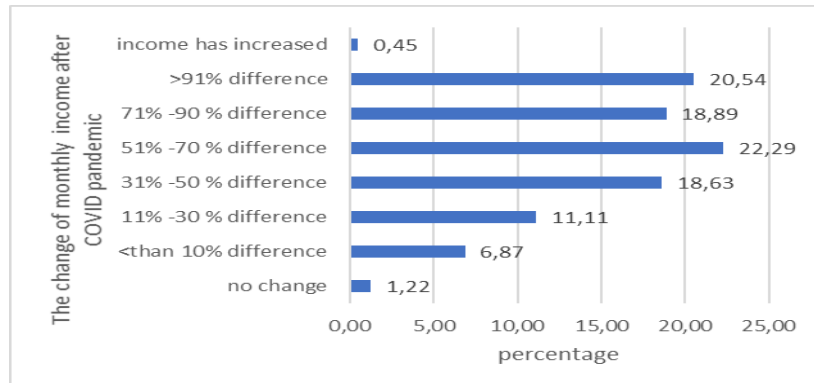
Most of the MSMEs (63.44%) earned less than one million annual gross income for the last 3 years (2017 – 2019) and 1.51% of them earned more than 100 million as average annual gross turnover (Figure 10). Exactly 61.72% respondents reported that their annual income for the last three years has changed by more than 50%. Very few respondents (0.45%) mentioned that their income has increased (Figure 11).

Figure 10. Annual Gross Income for the Last Three Year (2019 – 2017).



Source: retrieved from data

Figure 11. The Change of Monthly Income after the Pandemic.



Source: retrieved from data

Impact on Employees

Range of full-time staffs and part time staffs worked under MSMEs before and after COVID-19 are depicted in below tables. Higher percentage of MSMEs have 0-5 number of full time and part time employees before and after COVID-19. Since most of the MSMEs reduced their full time and part time employees, the percentages of full time and part time employees have decreased after COVID-19 except for 0-5 number of employees' category. After the employee reduction, there was an increase in percentages of 0-5 full time and part time employees. This is because of the reduction in other categories of full time and part time employees (see the following two tables).

Table 2. Full Time Employees before and after COVID-19

Number of employees	Percentage of MSMEs before COVID-19	Percentage of MSMEs after COVID-19
0-5	76.7%	85.4%
6-10	11.8%	7.1%
11-15	4.2%	2.6%
16-20	2.2%	1.5%
21-25	1.4%	0.7%
26-30	0.4%	0.4%
31-35	0.5%	0.5%
36-40	0.6%	0.3%
41-45	0.3%	0.2%
46-50	0.5%	0.4%
51-55	0.1%	0.1%
56-60	0.1%	0.1%
61-100	0.1%	0.2%
101-200	0.3%	0.3%
201-300	0.1%	0.1%
Above 300	0.1%	0.1%

Source: prepared by author

Table 3. Part Time Employees before and after COVID-19

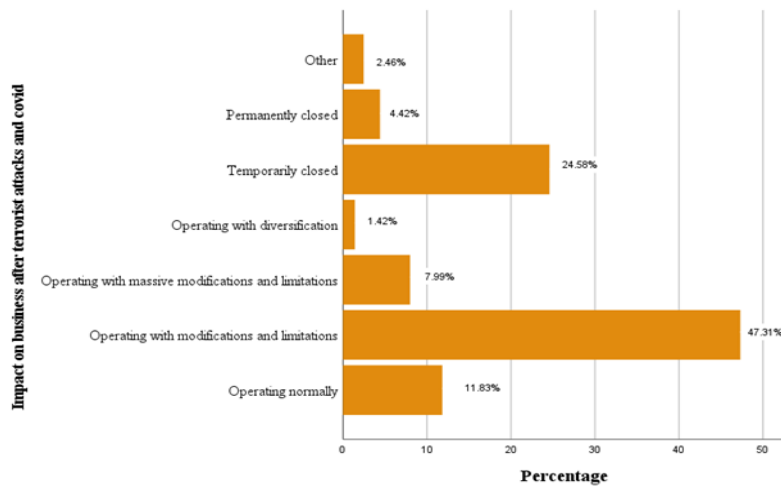
Number of employees	Percentage of MSMEs before COVID-19	Percentage of MSMEs after COVID-19
0-5	78.4%	88.3%
6-10	12.3%	7.4%
11-15	3.9%	1.6%
16-20	2.2%	1.1%
21-25	0.8%	0.4%
26-30	0.8%	0.6%
31-35	0.2%	0.1%
36-40	0.4%	0.3%
41-45	0.1%	0.1%
46-50	0.4%	0.2%
51-55	0.1%	0.1%
56-60	0.2%	-
61-100	0.2%	0.1%
Above 100	0.3%	0.2%

Source: prepared by author

Impact on Business

About 47.31% of MSMEs operating with modification and limitations while 11.8% of them operating normally even after COVID-19. Around 24.6% of businesses have temporarily closed may be due to less capacity of implementing business operations and 4.4% of businesses have permanently closed (Figure 12).

Figure 12. Impact on Business after COVID-19.

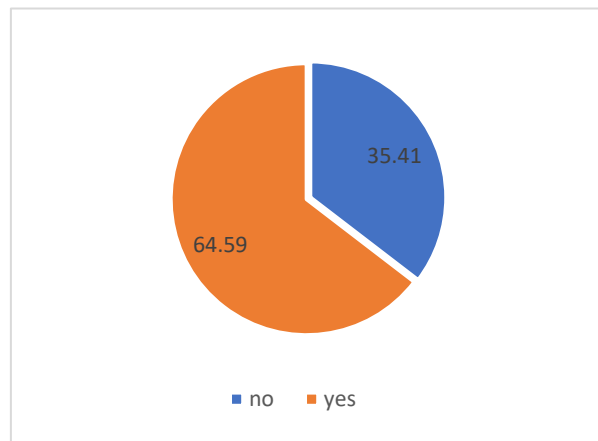


Source: retrieved from data

Sources and Status of MSMEs loans

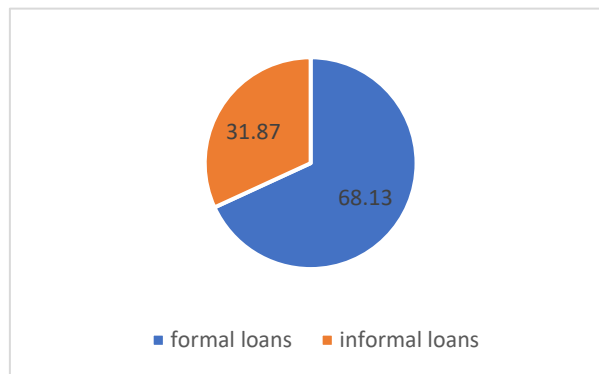
As indicated by Figure 13, 64.59% of MSMEs currently has loans/leases which means more than 50% of MSMEs have borrowed loans to run their businesses. Further, Figure 14 shows the type of loan borrowed by MSMEs. Almost 68.13% of them borrow formal types of loans and 31.87% borrow from informal money lenders.

Figure 13. Loans/leases Status.



Source: retrieved from data

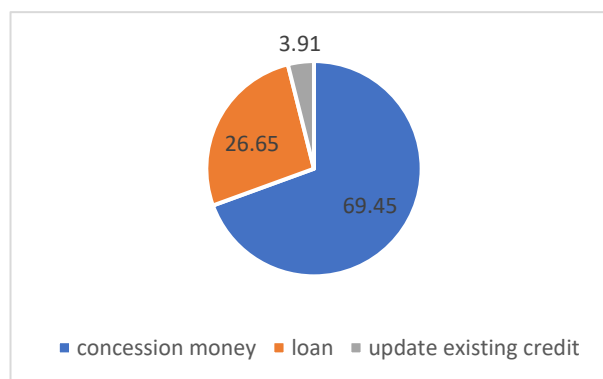
Figure 14. Type of Loan.



Source: retrieved from data

Due to the lack of capacity of paying the loan installments, most of the respondents have requested for concessionary funding and credit update in order to overcome their current problems. As shown by Figure 15, 69.45% of the MSMEs need concession money to revitalize the business while 26.65% are requesting a loan facility.

Figure 15. Source of Money to Revitalize the Business

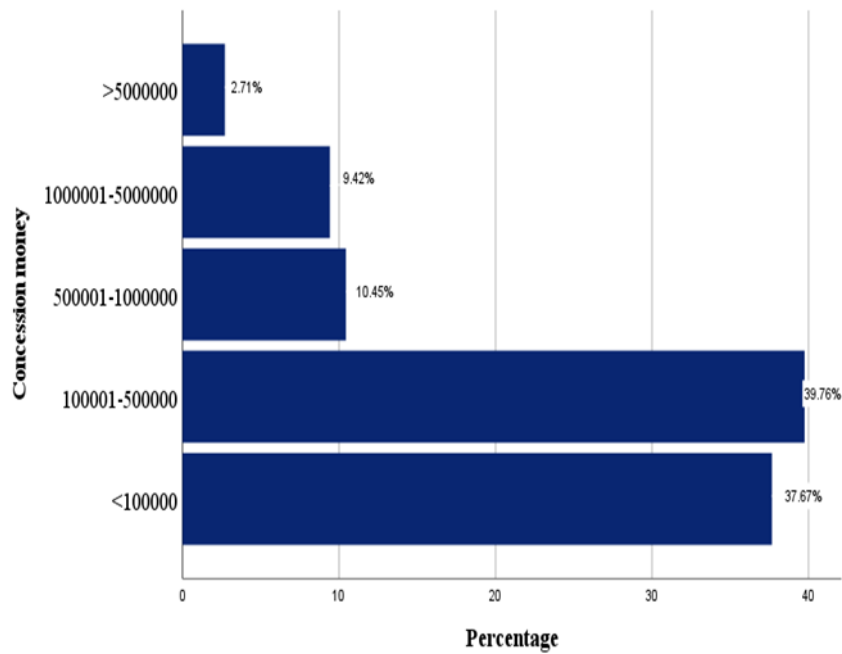


Source: retrieved from data

Range of concession money, loan amount and existing credit update amount to revitalize the MSMEs are shown in Figure 16. Nearly 40% of MSMEs need Rs. 0.1 million to Rs. 0.5 million concession money and 38% of them need less than Rs. 0.1 million concession money. Only 2.7% need more than 5 million. Whereas, according to Figure 17, higher percentage of MSMEs need 0.1 million to 0.5 million loan and 7.5% of them need

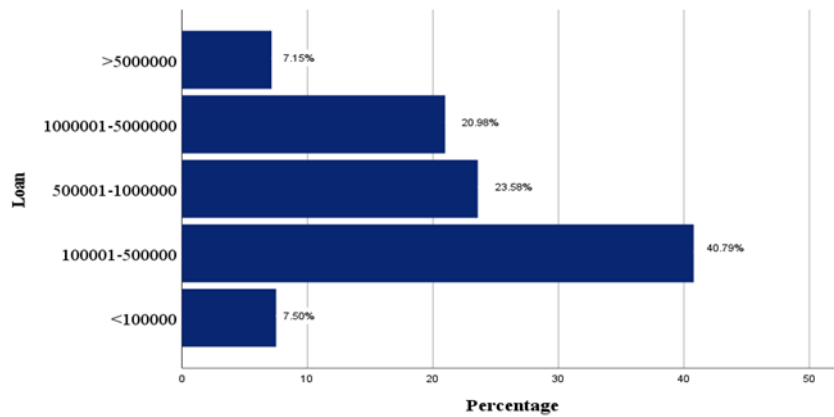
less than 0.1 million loan, and Figure 18 depicts 35.3% of respondents need 0.1 million to 0.5 million money to update their credits and 15.9% of them need more than 5 million.

Figure 16. Concession Money



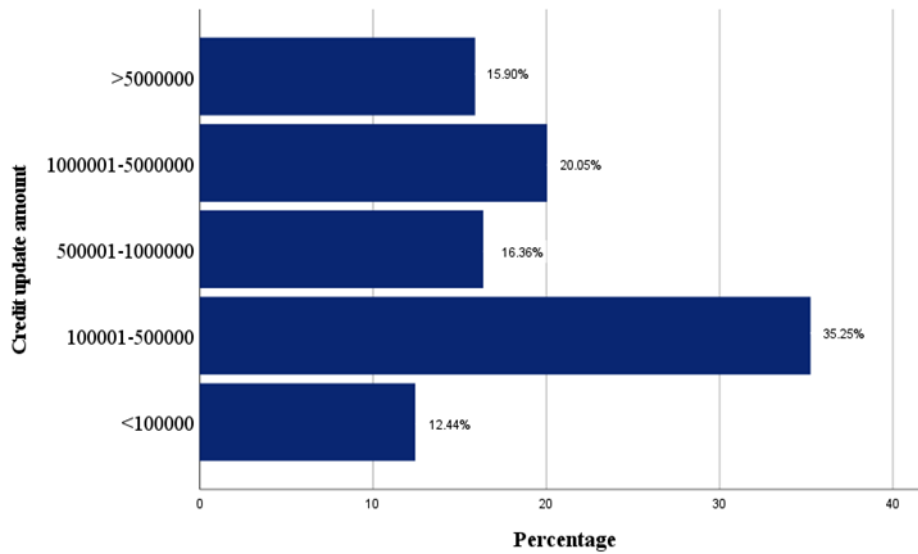
Source: retrieved from data

Figure 17. Amount of Loan



Source: retrieved from data

Figure 18. Credit Update Amount

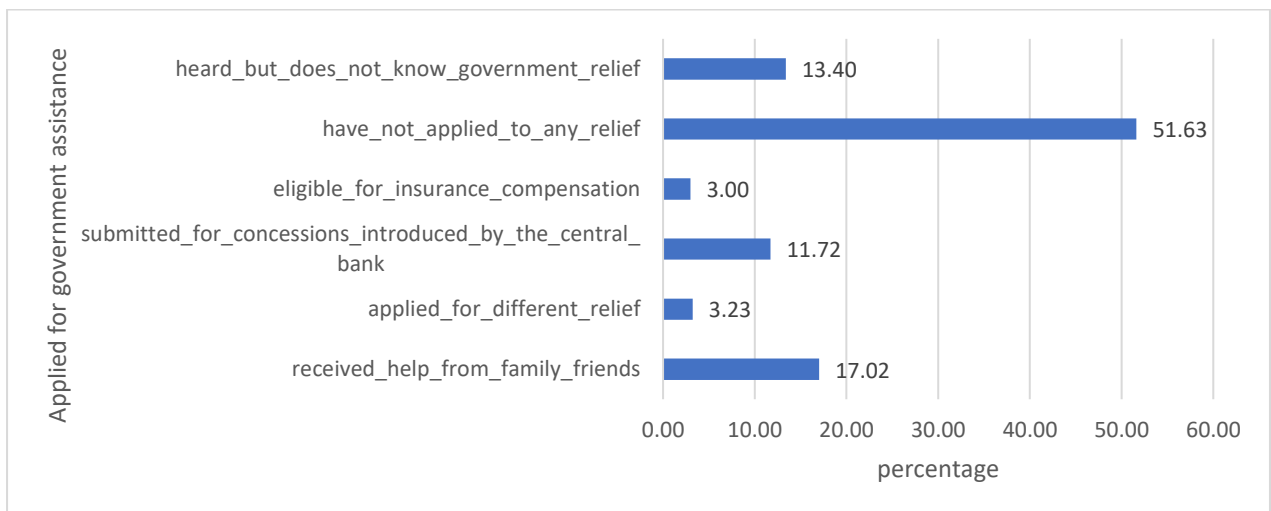


Source: retrieved from data

Status of s and COVID-19 Relief and Support

About 51.63% reported that they have not applied for any relief/financial assistance so far, 11.72% have already applied for concessions introduced by Central Bank and 13.47% do not know about the details of government economic relief (Figure 19).

Figure 19. Reliefs for Loans/Financial Assistance.



Source: retrieved from data

Conclusion and Recommendation

The main purpose of the survey was to investigate the effects and impacts of Covid-19 on MSMEs in Sri Lanka and to make necessary interventions in recovering and rehabilitating the local business sector. Through the responses obtained from the participants of this study, it is clearly identified that majority of the MSMEs have collapsed financially, and they face challenges in increasing the number of daily customers due to the prevailing situation in the country. In order to approve the concessionary funding and requested loan facilities, Development Officers of NEDA should visit entrepreneurs and make physical verification.

The conclusions drawn from the findings of this analysis we have prompted the following recommendations:

- As the findings indicate, Sri Lankan MSMEs should be facilitated with financial reliefs (concession money, loan and money to update current credit) for recovering the business operations.
- It would be effective that MSMEs are provided with more opportunities by facilitating access to markets by conducting trade fairs, Made in Sri Lanka Branding, Trade Portal and Franchising etc.
- With respect to government short-, intermediate-, and long-term interventions, our recommendations are the followings:
 - a) Short-term interventions: most of the economic relief programs are recommended as short-term interventions. It is essential to minimize further layoff and business closure by implementing relief within at least three months' time and make sure MSMEs have received economic relief provided through banks and financial institutes. Another requirement is to define and

implement economic stimulus packages for MSMEs. MSMBED must formulate and implement MSME economic relief package as an immediate measure to minimize losing layoff and income. It is recommended to setup and establish district wise MSME Support and Care Desk with the existing staff of NEDA who can speak required local languages (Sinhala and or Tamil).

- b) Intermediate-term interventions: it is strictly recommended to appoint national MSME Advisory and Steering Committee (ASC) in the Ministry of MSMBED to facilitate, follow up, implement, monitor, evaluate and report the progress of MSME strategic plan of the government. A special national level program should be developed with the engagement of relevant government, private and NGO partners to offer a sustainable solution for those who become unemployed (approximately 300000) as a result of COVID-19 impact. National MSME raw material production, usage policy and plan are to be formulated with required feasibility study. Investors should be provided with special economic incentive and tax holidays. This will provide more opportunities for local entrepreneurs and traditional industries. Government has to provide strategic support to facilitate women economic empowerment and to promote gender equality in MSME development policies and plans. It will help in the future to improve the resilience of women MSME owners and they will also contribute more to the economy. Agriculture and food processing are to be focused on the required blend of traditional methods and systems together with technological advancements. This will help more MSMEs to get new opportunities for engaging in economic activities. New and innovative MSME owners should be introduced the business protection scheme which will help them in future to face this kind of situations in order to minimize layoff and

sudden business closure. “Cloud MSME Sri Lanka” concept, approach and strategies are to be promoted among MSMEs. It is recommended to select and announce suitable approved online, cloud and remote services and solution providers with a promotion. To support gig economy ministry must educate banks and financial institutions that the COVID-19 relief package is not to regularize for micro and small business. First, the government has to support them to survive and then the next step would be transforming them from informal to formal.

- c) Long term interventions: it is recommended to prepare a long term MSME economic development plan with a clear and accurate forecast to generate MSME income for coming 3-5 years in order to achieve targeted percentage contribution for the GDP. This will help the government to receive COVID-19 relief investments back in rewards. Another recommendation is the MSME development plan for 2021-2023 which is to facilitate district level consultative meetings and produce a threeyear rehabilitation and development plan for MSME in Sri Lanka. In line with this plan, the government must strategically deal to recover the cash injected to MSMEs as COVID-19 economic relief. This is the best time for the government to promote entrepreneurship in Sri Lanka.

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SMEs and Innovation: Lessons from Cooperative Relationships between SMEs and Large Firms in Ireland, Japan and Other Asian Countries

Tomoko Oikawa

*Euro-Asia Centre, Department of Economics,
Kemmy Business School, University of Limerick
Castletroy, Co. Limerick, Ireland
Email: tomoko.oikawa@ul.ie*

Abstract

This paper discusses: (1) there exist a variety of small and medium enterprises (SMEs) in terms of nature, (2) SMEs are classified depending on activity in relation to innovation, (3) *kanagata* making enterprise in Japan is taken as an example of relationships with large enterprise, in comparison with tool making enterprises in Ireland, in terms of cooperation and innovation, (4) the community based performance of SMEs is shown in Japan, Thailand, and Indonesia in terms of solidarity, cooperation, and innovation. It would be claimed that innovation in SMEs could be distinctive from the case of large enterprises (LEs), and it is basic for SMEs to cooperate each other to be innovative. The paper argues: (1) there is a difference between Ireland and Asian countries in terms of cooperation among SMEs; the case studies show there exist few cooperation between SMEs or with principle firms in Ireland, (2) community-based innovative activity is picking up in the case of Japan and, apart from scale and scope, Thailand and Indonesia have witnessed the rise of community-based economic performance with innovation. While the nature of innovation between Japan and other South Asian countries is distinctive in terms of a variety of degree, and SMEs is overwhelmingly micro-sized in Thailand and Indonesia, it may be considered that there is a common feature in these countries. (3) It could be that their cultural core values are essentially community derived, but they are also the outcome of a bottoms-up approach to community actualities to the top-down state policy, which is based on the recognition of community power. This can be observed in Japan, Thailand and Indonesia. The paper claims the importance of cooperation for innovation both internally and externally. Cooperative activities are based on the cultural values of social structure, which can be observed in Japan as keiretsu relationships, 'community culture (*watthanatham chumchon*)' in Thailand, and 'mutual spontaneous assistance (*gotong royong*)' in Indonesia. However, the case studies of Irish toolmaking industry have possibly shown that principles such as keiretsu values can be learnt, even if partly so. Key words: SMEs, innovation, cooperative relationships, Ireland, Japan and other Asian countries

Keywords: SMEs, innovation, cooperative relationships, Ireland, Japan, Asian countries

JEL codes: A 13, A 14, Z 13

Introduction

Either in Ireland or in Japan, more than 99 per cent are small and medium enterprises (SMEs) out of a total number of enterprises. Other Asian countries, this situation does not change. Thailand, Vietnam, and Indonesia are overwhelmingly micro enterprises in number. SMEs are fundamental for both national and local economy in terms of job creation and local prosperity. SMEs need to be innovative for survival, development and prosperity. This is especially true and urgent in the case of Japan. Many SMEs are struggling and fighting to survive two major hardships, one is the hollowing out of their clients – large companies, and the other consumers' declining demand for domestic products because of much cheaper other Asian countries' imported products. Against such a trend, Japanese SMEs are challenging to divert it by innovation. Other Asian countries, Vietnam, Thailand and Indonesia, are at the different phase from Japan in terms of innovative performance. Recent studies (Mizuno, 1996; Sakata, 2012) show that rural industries in these countries are independent and showing the gathering of momentum. The paper will take a brief view of these rural industries about their innovative activities.

Innovation of SMEs is distinctive from large enterprises (LEs) and depending on the country. This paper discusses: (1) there exists a variety of SMEs in nature, (2) SMEs are classified depending on activity in relation to innovation, (3) *kanagata* making (toolmaking) enterprises in Japan is taken as an example of relationships with LEs, in comparison with toolmaking enterprise in Ireland, in terms of cooperation and innovation, (4) the community-based performance of SMEs is shown in Japan, Thailand and Indonesia in terms of solidarity, cooperation and innovation. The paper argues: (1) there is a difference between Ireland and Asian countries in terms of cooperation among

SMEs; the case studies show there exists few cooperation between SMEs or with principle

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firms in Ireland, (2) community-based innovative activity is picking up in the case of Japan and, apart from scale and scope, Thailand and Indonesia have witnessed the rise of community-based economic performance with innovation. While the nature of innovation between Japan and other these Asian countries is distinctive in terms of technological and organisational degree, and SMEs in these other Asian countries are overwhelmingly micro-sized, it may be observed that there is common feature in these countries, that the cultural core values as the principles of social structure are the base of innovative performance, and they are the source of the top-down state policy, which is based on the bottoms-up approach of community actualities and on the recognition of community power. This is observed in Japan, Thailand and Indonesia. The paper claims the importance of cooperation for innovation both internally and externally. They are observed as keiretsu relationships in Japan, 'community culture (*watthanatham chumchon*)' in Thailand, and 'mutual spontaneous assistance (*gotong royong*)' in Indonesia. While the case studies of Irish toolmaking industry show a gap between Ireland and Asian countries in terms of cooperative performance, they have possibly shown that principles such as keiretsu values can be learnt, even if partly so.

The paper begins with literature review on innovation, which is followed by SMEs classification in relation to innovation. Then the actuality of SMEs in Japan is discussed. Third, it is argued that *keiretsu* relationships, networking and cooperation are the basis for SMEs' innovative activities, and the core values, trust and dependence, as the principles of social structure underlie all these relationships. Fourth, Irish toolmaking industry is explored in terms of innovative activities and cooperation contrast with its Japanese counterpart. Fifth, SMEs in Vietnam, Thailand and Indonesia are briefly viewed from the aspect of innovation and cooperation.

Literature Review

Whitley (2000, 1991) argues that the characteristics of SMEs are different and thus their innovation strategies as well among countries or regions in different environments. He argues above all the importance of institutional settings, which affect business systems and vary depending on the region or country. The concept of innovation has been defined in different ways. Schumpeter (1934 (2008)) states that innovation is not just technology development but the social process of destruction of *gewohnten bahnen* (beaten tracks). He defines innovation as the setting up of a new production function, which covers the case of a new commodity as well as those of a new form of organisation or merger, or the opening up of new markets (1939). He created the entrepreneur as purely economic existence and carrier of innovation. The entrepreneur appears in the period of economic stagnation and carries out 'creative destruction' for breakthrough to dynamic economy with his followers. Schumpeter (1939) locates the entrepreneur as mediator between economic and social process. This entrepreneur is abstract persona conditioned by history and institutions, not as primary factor of change but as carrier of changing mechanism. This theory looks at 'creative destruction' or 'innovation' and 'innovator' from the viewpoint of historical scale and scope (Ohno, 1970). In the *White Paper on Small and Medium Enterprises in Japan* (e.g. MoETI, 2006,2009,2010, 2011; JSBRI, 2007), innovation is understood as product and process innovation in narrow meanings, i.e. remarkable improvement or small inventions in process or product which lead the enterprise to new market and increased profit. A lot of SMEs are doing low risk but continuous innovation. Importantly, such a small-scale innovation is continuously carried out by SMEs in Japan. Among them an enterprise with 10 employees has the 420 years' history (Suzuki, 2012). Schumpeter (1939) distinguishes innovation from invention, which produces of itself and no economically relevant effect at all. In recent Japan, it is

observed (Shibayama, 2011) that particular phenomenon of fresh relationships between enterprises or personnel has been shaped up in local industry. This phenomenon shows the birth of free and autonomous entrepreneurs in local Japan and it also shows new trend of innovation which is trying to add goods new meanings and values, i.e. innovation (Shibayama, 2011). Shibayama (2011) sees such a phenomenon as preliminary to the main historical event of 'creative destruction', involving cultural and sociological change. On the other hand, empirical studies (Suzuki, 2011, 2012) point out that innovation of SMEs in old industrial district in Tokyo is affected by the district's particular industrial atmosphere. These SMEs have evolved creative SMEs, diverted innovation product and developed into two-types of SMEs manufacturers, 'problem solution product' and 'highly sensitive and functional product'. Marshall (1919, 1920) stated that social trust is important for institutional settings to work smoothly to maintain the 'industrial atmosphere' in 'industrial district'.

Otherwise, it should be noted that many SMEs are struggling to survive two major hardships, one is the hollowing out of their clients – large companies and the other consumers' declining demand for domestic products because of much cheaper other Asian countries' imported products. Against such a trend, Japanese SMEs are challenging to divert it by innovation (MoETI, 2010, 2011). Networking among them is one major way toward this direction. It is assumed that fruitful networking requires trust at the base. Marshall (1919, 1920) remarks that social trust is important for institutional settings to work smoothly to maintain the 'industrial atmosphere' in 'industrial district (Marshall)'.

There is simply two ways of interpreting innovation as seen. One represented by Schumpeter sees 'innovation' from a historical point of view involving cultural and sociological change. Shibayama (2011) argues that new trend of networking among SMEs in local industry is a forerunner of historical new phase of 'creative destruction' in Japan.

However, while highlighting such new trend of networking, he may neglect keiretsu relationships as traditional network which accounts for around 50 per cent on average of suppliers and is evolving (MoETI, 2011). Other view focuses on innovation as continuous and daily work's extension from the viewpoint of SMEs' actualities (MoETI, 2010, 2011; Suzuki, 2012). This paper will take a view that, while a bird's eye view is highlighting a new trend of networking as could-be preliminary to dynamic economy, this paper will look into the actualities of innovative activities in relation to networking and argue the central importance of core cultural values in social structure for innovation in Ireland and Asian countries.

Various SMEs

There are various aspects about how SMEs are related with innovation strategies, as follows. • SMEs' early network establishment of relationships enhance innovation capacity (Jørgensen and Ulhøi, 2010). • There is positive relationship between organizational size and innovation, particularly in manufacturing and profit-making organizations (Damanpour, 1992). • SMEs are similar to LEs concerning to the way that innovation strategy and formal structure are the key drivers of their performance, but do not utilize innovation culture in a strategic and structured manner (Terziovski, 2010).

Jørgensen and Ulhøi (2010) argue this aspect with regard to young SMEs, which focus on innovation, to develop and foster network relationships early on in their evolutionary life cycle in order to support learning, knowledge sharing and innovation. Damanpour (1992) demonstrated the distinguishable influence of organisational types on the size-innovation relationship and concluded that the large firms are more innovative than SMEs in the manufacturing sector. Terziovski (2010), likewise, argued manufacturing SMEs are likely to improve their performance as they increasingly mirror

large manufacturing firms with respect to strategy and formal structure. Further he concluded that SMEs do not appear to use innovation culture in a strategic and structural manner.

SMEs in Japan

Variety of SMEs

The paper examines three types of SMEs in terms of organizational structure and capabilities in Japan. It used *White Paper on Small and Medium Enterprises in Japan* (e.g. MoETI, 2006,2009,2010, 2011) as the basic materials. SMEs in Japan are the pivot of supporting manufacturing industry. This is the case, particularly in the machinery manufacturing industry. In comparison with LEs, they are different in many ways. They account for 99.7 per cent of all firms and about 70 per cent of all employees (MoETI, 2011). In manufacturing industry, they account for about 50 per cent of added value. Not only in their size but also SMEs are different from LEs in their approach to innovation. SMEs are further divided depending on whether they are suppliers or independent enterprises.

Three Salient Features in the Innovation by SMEs

According to MoETI (2009), there are three salient features in the innovation by SMEs reflecting the compact size: (1) Managing Director (MD) himself/herself tackles innovation, taking a leadership from planning measures to contriving ideas or originality in the working place. (2) Outside of continuous R & D activities, there is a great role of creativity and ideas which flashed in the working place and/or in daily life, and which turned into innovative products and improving production processes. (3) SMEs are instrumental for innovation in niche markets. In addition, flexibility and quickness in

decision-making by MD may be taken into consideration as advantage for innovation. Generally speaking they are not willing to take risks

Three Categories of SMEs

In fact, SMEs in Japan may be divided into three categories: suppliers, independent enterprises or entrepreneur, and 'between' (e.g. MoETI, 2006, 2011). With regard to 'between' they are or were suppliers and trying to be successful at independent entrepreneur by innovation. Their approach to innovation is different depending on their nature.

Suppliers are officially, over 60 per cent, in the *keiretsu* relationships¹ in every manufacturing sector: 100 per cent in electronic parts, devices and electronic circuits, 75 per cent in transport machinery and equipment, 72.2 per cent in general machinery (MoETI, 2010). Under subcontracting conditions, they take orders from their clients and fulfill requirement for products and/or processings. SMEs in the *keiretsu* relationship share the plans and prospects of their principal firms (60 per cent), and their MDs involve in mutual exchange with their counterparts of large enterprises (54 per cent). Basically, because of such relationship, they do not have to do marketing activities. They do concentrate on and develop technical know-how and skills for the required products and/or processings. These expertise are fundamental. While the rate of R & D activities among these SMEs was basically low compared with independent entrepreneur, SMEs in the manufacturing sector are confronted with increased competition from cheaper manufactured products from such countries as China and India, and are consequently struggling to develop competitive products, process improvement and services through

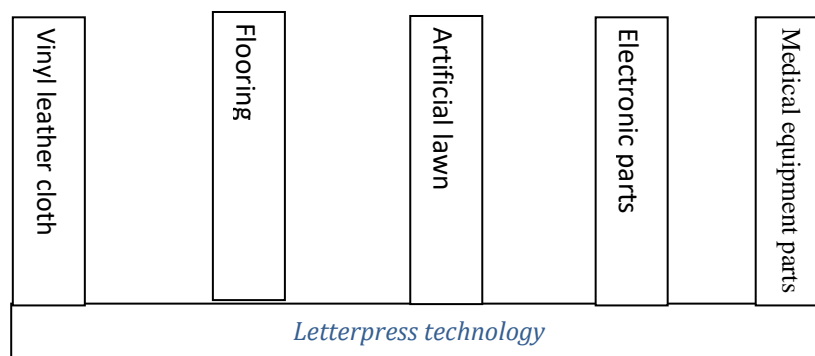
¹ Keiretsu is the vertical relationship system between suppliers and users and lasts for generations since the 1950s. The relationships are based on the principles of social structure – trust and dependence – in Japan (Oikawa, 2011).

innovation. SMEs have a high rate of activities aiming to innovate through non-continuous research and development or methods other than research and development (MoETI, 2009).

In LEs with more than 250 employees, more than 80 per cent of them are tackling innovation through continuous R & D on the one hand, and in small-scale enterprises with 10 to 49 employees, a half of them through continuous R & D and the rest of them through non-continuous or no R & D, on the other.

Independent or entrepreneur SMEs are instrumental in innovation in the niche market, not through R & D activities but ideas or creativity which flashed in daily life. Suppliers, who are trying to be independent, need to be innovative in products and/or process. As suppliers they have fundamental technical know-how and expertise. They exploit their expertise to develop new products and/or process innovation (numerous examples are shown in the *White Paper on Small and Medium Enterprises* every year). These phenomena are interesting. They display the essential importance of fundamental technology and skills. More precisely, they show tremendous potential of such assets for innovation of new products. Figure 1 shows one example.

Figure 1. Approach to Effective Technological Development: An Approach based on a Root Technology



Source: Minato (1982: 10)

Networking

As a general trend, the *keiretsu* relationships are expanding by networking. This is recognised as 'meshing' for survival and development (JSBRI, 2006).

It is noted that 57.1 per cent of SMEs are still under the traditional *keiretsu* relationships, i.e, they belong exclusively to their long-term customers. This pattern is increasing (JSBRI, 2006). Otherwise they exchange information, ideas or knowledge with other enterprises by joining the local industrial association (56.4 per cent) or a kind of heterogeneous business exchange association and studying circles (64.1 per cent). More positively, they pay a visit to other companies on a daily basis and get merits such as, that they are able to judge precisely their customer's level of technology or skills (73.0 per cent), or that it is straightforward for them to modify or to propose technical matters with their customers (65.1 per cent) (MoETI, 2006).

Kanagata (die and mould) makers and users relationship are an exemplar. In fact this relationship has contributed a great deal to product and process innovation. The relationships are characterised as follows:

- 1) the die and mould blueprints and processing data containing the know-how of the manufacture should be considered intellectual property. But it is presumed that there has been no consideration in terms of intellectual property and also that no contract existed between suppliers and customers;
- 2) the above relationship has been institutionalised as a social norm; and
- 3) *kanagata* industry is characterised by its highly specialised and subdivided structure of subcontracting system based on cooperative values.

Kanagata makers are systematically organised based on the social structure of highly developed division of labour (Taguchi, 2001), and *kanagata* makers consist of

three layers, the major, the backbone and the small which correspond to different

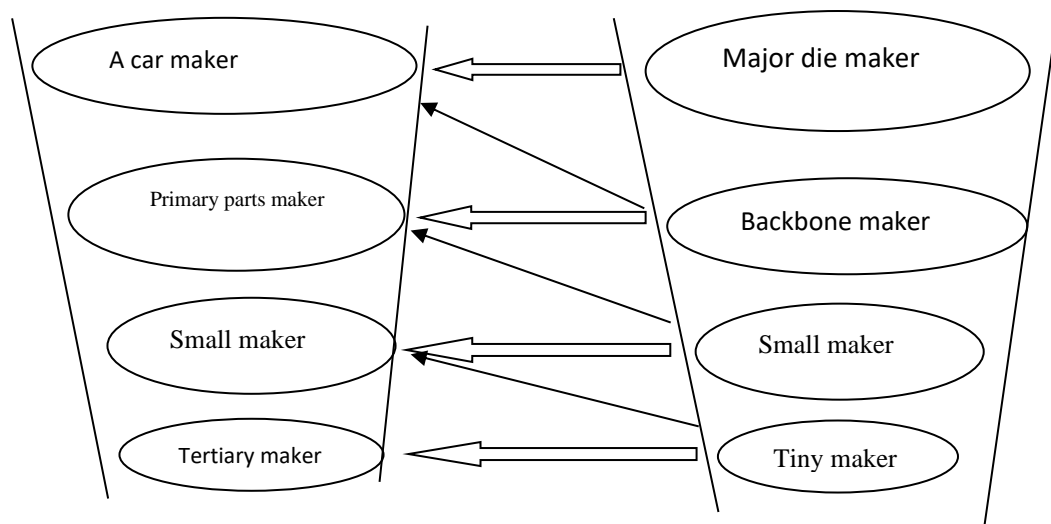
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equipment, technology, and market. The market for each layer parallels the social structure of the mass-produced machinery industry as shown in Figure 2.

Figure 2. The Layered Market Structure of Users and *Kanagata* Makers in the Case of Stumping Dies Supply for Car Manufacturing.



Note: the white arrow shows the major transactions, which are not fixed and the thin black arrow transactions take place.

Source: Taguchi (2001: 57)

Based on such highly specific skills and technological expertise, they could attain innovation or improvement using imagination and/or inference (Asai, 1996; Koike, 1999).

Principles of the *Keiretsu* Relationships

Granovetter (1992, 1994, 2005) argues the importance to recognise how economic action is constrained and shaped by the structures of social relations in which all real economic actors are embedded. Granovetter (1994) also suggested the existence of the principles in the cooperative relations and indicated that these principles are identifiable by such factors as region, political party, ethnicity, kinship or religion. In the case of *keiretsu* it is

identified that they may be 'trust and dependence'². These principles are the foundation of the *keiretsu* relationships and have a basic effect on maintaining cooperative relationships for innovative performance, by sharing skills or tools or exchanging information about new technology or niche market.

SMEs in Ireland – Toolmaking Industry

The Irish economy is particularly characterised by the overwhelming presence of foreign multinational companies. While they have positive effects for both the high-and low-tech sectors (e.g. Görg and Strobl, 2002), for instance, they have shown volatility in terms of presence continuity in Ireland. Further, although foreign multinationals are more engaged in manufacturing, producing three times more than Irish-owned companies in terms of sales, their employment levels-257,000 in 2010-are less than in Irish-owned companies-854,000 in 2010-according to CSO. This explains a major tenet of industrial policies that the Irish government has tried to promote consistently for the indigenous manufacturing industry. As a matter of fact the substantial presence of Irish indigenous companies is vital in terms of employment, ubiquity and consistency for the Irish economy.

The competitiveness of indigenous industry is important as a source of economic growth and employment. The engineering sector is one of the traditional sectors comes predominantly from Irish-owned firms, while the output of modern sectors comes very largely from foreign-owned firms (O'Malley, 1998: 44). Irish SMEs are widely dispersed

2. This is based on my article (2011) 'Economic organization and Social solidarity: *Keiretsuas* a Local/Global Concept' in *Firm-Level Internationalization, Regionalism and Globalization*, Elaine Hutson, Rudolf Sinkovics and Jenny Berrill (eds.).

throughout Ireland and providing substantial employment and basic products in Ireland (WDC, 2004).

Cooperataion and Grouping

The importance of cooperating and grouping to help financial and organisational problems is highlighted and emphasised as follows:

The importance of cooperation and grouping to expansion with other toolmaking companies as joint marketing, joint trading, shared equipment and so forth rather than technical knowledge must be considered, but little evidence of this. The Irish toolmakers seldom consider trading among themselves. Working within a group might make better sense. Participating firms might become subsidiaries, or they might supply to a central toolroom, and these companies would have shares in a joint marketing operation (Kennedy, 1990: 41).

The reality is that *Irish managers think that everyone outside the factory gate is a deadly rival out to take rather than give business (Kennedy, 1990: 42)*. Such a situation appears to have been changing, depending on the company. The case studies of five toolmakers in Ireland show some evidence relating to cooperation. Two companies can be considered a good model as toolmaker in Ireland in terms of the State agencies' strategic policy. Both companies illustrated a clear understanding of the fundamental importance of continuous adaptation in terms of both advanced technology and training. Both companies realised the importance of training to acquire skills for new machine tools. They have also been exploring new markets, through new innovative products and by challenging new difficult materials for component products. Both have invested more in improving technology than the other companies surveyed. The fact that most employees have been working with the company since its establishment (20 years) should have made it possible for greater cooperation on the shop floor. When they encountered a difficult problem, 90 per cent of such problems were resolved jointly. The

other was established in 1998, at a later stage of technological change in Ireland. However, it is assumed that the relationship between workers and between the company and their suppliers and customers, is similar to that as found in the former. The fact that the distribution of profit and reward is transparent to the employees may have encouraged them in working and led to non-absenteeism.

It is thought that both MDs' experiences as employees of the Japanese multinationals have made a profound impact on their management styles, as they referred to it. They have learned the importance of nurturing a continuous and close relationship of intra – and inter companies in order to maintain their customers and to get informal knowledge and/or information about possible markets or technologies.

Issues 1. – Grouping, Cooperation and Cluster: the Government Strategic Policy

The common ideas behind are reduction of expenses for equipment investment, sharing and exchanging knowledge and information for skills and trading with intra-and inter companies. For these strategies a degree of social relations is central. In reality, *a big cultural change for a lot of companies* in the case of Ireland (Thoms McDermott, the AMT Ireland Manufacturing Technologies Centre's manager, quoted in Nolan, 1993: 30)

The 'fostering clusters' which was stressed as one of the central recommendations for industrial policy based on the idea of a cluster drawn from Porter's theory (1990), does not appear to have been put into practice nor adapted as recent empirical studies show. In fact, MD of the toolmaker I interviewed in 2009, said that they had no contact with other manufacturers in the cluster.

Issues 2. – The Concept of Core Technology and Industrial Policy

According to Department of Industry and Commerce (1990) the 'key technologies' is used to mean that on which industrial development depends. It is described as 'enabling

technologies' such as nano technology, biotechnology, microelectronics, optoelectronics, advanced manufacturing technologies. The skills and technology of toolmaking are defined as low to medium technology in Ireland, and there seems to be no concept to approach the dynamics from low to high technology because of the absence of a concept of core technology. In Ireland it seems that they have chosen to deal not with a technological accumulation structure, but with new specific high technologies, which are located at the centre of mapping in terms of different technologies for manufacturing industries. This is a new perspective adopted in the so-called the 'new economy'. As a result, the toolmaking is located on the periphery. It could be said that there are two viewpoints on mapping industrial technologies, one is structural and the other spatial.

Rural Industry in South East Asia – Vietnam, Thailand and Indonesia

The landscape of SMEs in South East Asia is very different from in Japan. SMEs in South East Asia are greatly highlighted as supporting industry for multinationals. This section, however, is concerned with rural industry, which consists overwhelmingly of micro enterprises. It is worth noting that they have shown a remarkable development or they could show the potential for further development, to be the leading or a viable rural industry in Vietnam and Indonesia (Fujita, 2006; Sakata, 2008, 2012; Mizuno, 1996; Sato, 2011).

In the case of Japan, it is rural traditional industry that maintains traditional craftwork and vitalises rural economy as rural based industry (Seki, 1985). In contrast with modern manufacturing industry, which while expanding to local areas, has not always played a role to make the areas prosperous. Such modern manufacturing industry has created only a dearth employment and not much benefit to rural industry. They have just formed a region as dispersed branch factory, isolated from rural society.

Rural Industry in Vietnam

In Vietnam entrepreneurship is quite active; from the 1960s until 2000~2005 there was 75.2 per cent increase of enterprise (Kurose, 2011). There is a view that Vietnam is developing led by rural industry (Fujita, 2006). In fact, it is one of important characteristics that the rural population rate remains 70 per cent of the total in 2010, and the real number is increasing while Vietnam is entering into the real industrialising phase (Sakata, 2012). The question is what are the means rural residents are making a living. In Vietnam small enterprises are overwhelming in number. Enterprises less than 10 employee account for 51.7 per cent of the total number and less than 50 for 85.7 per cent. Almost all of them are of non-state sector. Vietnam has two sectors, state sector and non-state. So far as industrial production is concerned, non-state production showed sharp increase. In line with it the number of micro enterprise (less than 2 employees) increased more than small enterprises (less than 50 employees) (Sakata, 2008). It is noted that rural industry is leading a remarkable development not only after *doi moi* (socialist-oriented market economy started in 1986 in Vietnam) but also after joining WTO. As a matter of fact, rural Vietnam is increasing in construction and service sector, which accounts for less than 40 per cent out of micro enterprises in rural Vietnam (Sakata, 2012). On the other hand, industrialisation of craft villages is quite remarkable, suggesting the considerable importance with regard to economy. Craft village is a typical example of rural industrialisation. Craft village has developed and formed clusters in which micro enterprises produce craftwork in community based clusters. Most prosperous craft village is *Bat Trang* in suburb of Hanoi. Such villages are based on domestic handicraft industry. This kind of village is 1077 to 2000 in total number in 2006. Inside the village division of labour has meticulously and systematically well organised. As a result there

exists no competition or conflict among producers or retailers (author underlined)(Sakata, 2012).

Thailand - Watthanatham Chumchon (Community Culture)

The national culture in Thailand consists of a wide variety of numerous community cultures, which vary depending on the district (tambon). Originally *watthanatham chumchon* is based on local agricultural groups in terms of traditional mutual cooperation and friendships. It is claimed that rural people and their mutual trusted relationships and culture are understood to be 'community'. For example, there was a change to accommodate to economic problems caused by market economy in the rural area. Around the 1980s rural people had created new type of economic organisation such as 'savings cooperative' and 'rice bank'. These organisations are funded and managed by the people themselves (Shigetomi, 2009). This thought, *watthanatham chumchon*, has spread wide in Thai society and had considerable impact on politics in Thailand at present (Shigetomi, 2009).

Watthanathanchumchon has four components: (1) rural people has their own viewpoint and culture; (2) at the base of such culture there is the principle of mutual aid; (3) culture and economy cannot be parted; and (4) community is traditional rural socio-economic system, which provides happiness, identity, and potential to develop negotiating power for the people. It is noteworthy to mention OTOP (one village one product) policy, which started in 2001 and is known it has been successful. In 2004 the gross sales was equivalent to one per cent of GDP (three quarters for domestic use and the rest for export) (Takei, 2007). This policy came originally from Japan and is spreading other Asian countries.

Rural Industry in Indonesia – Gotong Royong (Mutual Assistance)

Distinctive from the case of rural industry in Vietnam or Thailand, Indonesia has no definite leading industry for development and looks that leading developing industry is dispersing (Sato, 2011). The section sheds light on one of them, community-based weaving industry surveyed in two different regions in West Java respectively (Mizuno, 1996; Hashimoto, 2008). These examples show that product and process innovation has been successfully carried out in rural industry based on the cultural core values *Gotong royong* (mutual assistance).

a) Majalaya region (Mizuno, 1996)

The Majalaya region has a long history as weavers. This region showed the will power of independence of the weavers when their textile industry faced the crisis, which was caused by the breakup of its weaving factories. They turned products whose markets had not yet been completely monopolised by large corporations or power-loom operators. In order to these products they cut production costs and resulted in a new division of labour, as a large number of locally based traders took innovative measures to open up new marketing networks. What happened was the formation of a weaving production area/community centring around the village that was freed from dependence on either factories or wholesalers in other regions. Further there is one added point. In spite of the fact that the pay is better working for others as wage labour, the choice of lower paying independence can be attributed to in part to the weavers' character, which prefers self-employed work to working for someone else. Another point is that independent businesses, despite the low income offered for weavers, produce about the same amount of income as rice farming among middle-strata owner operators in the village.

b) Takusimalaya prefecture (Hashimoto, 2008)

It has only around 10 years old history. The West Java silk industry has suffered the sharp rise of imported cocoon after Asian economic crisis and many domestic market-oriented enterprises in silk industry were closed down. Silk industry in Takusimalaya prefecture is maintaining the production. It is an integrated production system based. Such a rural industry above is meticulously and systematically organised by the cooperative and resulted into low cost production system. It is claimed that rural industry creates employment for unskilled labour by forming social division of labour of production

The historical background of *gotong royong* in origin is opaque. However, it is since the independence day of Republic of Indonesia in 1st of June 1945 that *gotong royong* is publicly and officially declared as the embodiment of the principles of the national foundation. There are the three cultural operator in contemporary Indonesia, *koperasi* (cooperatives), *musyawarah* (consensus), and underlying all the others, *gotong royong* (mutual and reciprocal assistance, as in the traditional Javanese village (Bowen, 1986). The term *gotong royong* itself implies spontaneous and mutual aid altogether among people (Gumisawa, 2004).

Gotong royong in the strict sense can be rendered as collective social activities. But the deepest meaning of *gotong royong* can be explained as a philosophy of life that takes the collective life as the most important. The philosophy of *gotong royong* is now a part of Indonesian culture because *gotong royong* is not the property of a particular ethnic group (Sinar Harapan, June 22, 1984: 6; cf. Bowen, 1986:546)

Conclusion

Theories of Schumpeter above all seem great to understand significance of innovation in historical and sociological context. Then, case studies of SMEs in Asian countries and Ireland will provide the concrete, detailed knowledge for SMEs how innovation should

be carried out. The difference of the core cultural values between Ireland and Asian countries may affect the difference of innovation between these countries. The basis of these difference could lie in individualism and community-based culture in the very centre, respectively.

What is missing in the ideas of Schumpeter or Marshall could be the acknowledgement of basic importance how the core values or the principles of social structure affect the industrial atmosphere and cooperative relationships for innovation in SMEs. At least this is the case in Japan and other these Asian countries. In Ireland there may exist not such principles of social structure in Japan– trust and dependence –or cooperative spirit and trust as cultural core values in Vietnam, Thailand and Indonesia, but individualism which is the base of social relations in Ireland, same as other Western countries. From this viewpoint innovation of SMES may vary depending on culture.

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About the Authors

Burenin Aleksey Nikolaevich, Doctor of economic sciences, professor of economic theory, Department of International Finance, Moscow State Institute of International Relations (University) (MGIMO), Moscow, Russia. He got Ph.D. degree and Doctor degree in political economy and was the Head of the Department of Stock Market at MGIMO and the Head of the master program “Stock and Derivative Markets”. He is the author of several books on derivative securities and portfolio management. He has published papers in several journals including Scopus. Teaching and research interests: derivative securities, economic crisis, monetary policy, macroeconomic regulation.

Chathuni Pabasara holds a Bachelor degree in applied economics from Monash University, Malaysia and is an independent researcher in the field of economics. She has previously worked at a foreign policy think tank in Sri Lanka, where she worked on Sri Lanka’s foreign policy issues related to international trade and regional cooperation and published research on various regional and bilateral economic issues. She has also worked in the banking and consulting sectors in Sri Lanka. Her main research interests are in the areas of economics, international development and international relations.

Deyanira Bernal-Domínguez who holds a Ph.D degree in social sciences from the Autonomous University of Sinaloa, Culiacán, Sinaloa, México is a full-time professor and researcher at the UAS School of Accounting and Administration. Her research areas are organizations and finance, and her recent publication include Alcaraz-Ochoa, Daniela, and Bernal-Domínguez, Deyanira (2017), “Evaluation of the technical efficiency of the State Public Universities (UPE) of north-western Mexico through Data Envelopment Analysis (DEA)”, *Nova scientia*, 9(19), 393-410; Bernal- Dominguez, D. (2019), “A correlational analysis of financial ratios of companies listed on the Mexican stock market in the period 2008-2017”, *Journal of Microfinance Planning and Control*,5(16), 1-7; and Villa Benítez, Celia Patricia, Camacho Castro, Carmen, and Bernal Domínguez, Deyanira (2020), “Data analysis as an alternative for evaluating the impact of social programs”, *Intersticios sociales*, (20), 13-48.

H.M.S.L. Wijeyewardena is having an MSc in aquaculture technology management at University of Peradeniya Sri Lanka. He has obtained his Bachelor's Degree in the field of agriculture at the University of Peradeniya, Sri Lanka. Further, he has presented a research paper to an international conference on business. And also he is a certified practitioner and trainer of soft skills development and practical psychology. He is a visiting lecturer at many local and Indian universities. HMSL Wijeyewardena is the Director of the National Enterprise Development Authority, Sri Lanka. His main research is in the field of entrepreneurship, technology commercialization and human resource management (HRM).

José G. Vargas-Hernández who holds two Ph. D. degrees in public administration and organizational economics is a research professor at University Center for Economic and

Managerial Sciences, University of Guadalajara. He is also a member of the National System of Researchers of Mexico. He has published nine books and more than 300 papers in international journals and reviews (some translated to English, French, German, Portuguese, Farsi, Chinese, etc.) and more than 300 essays in national journals and reviews. He has obtained several international awards and recognitions and has also experience in consultancy. His main research is in organizational economics and strategic management. He teaches for several doctoral programs.

Koliswa Matebese-Notshulwana is a post-doctoral research fellow in the Faculty of Humanities at the Department of Political Sciences, University of Pretoria where she obtained her doctorate. Her thesis is on the Role and Function of Legislative Oversight of the Standing Committee on Public Accounts (SCOPA) in promoting accountability. She also holds an MPhil on South African Politics and Political Economy from the Nelson Mandela University (NMU) in Port Elizabeth. She has published a number of journal articles and book chapters and is an active peer reviewer for some journals. Her mentoring and research interests are in the areas of accountability, corruption, procurement, economic development, democracy, and oversight.

Ravindri Paranagama holds a Bachelor's degree in Politics and Sociology from the University of Warwick, United Kingdom and is an Independent Researcher in the field of socioeconomics. She has worked as a researcher at a foreign policy think tank where she produced issues briefs, concept notes and takeaways for conferences, working group meetings and webinars hosted by the institute, concerning foreign policy in the maritime domain and regional cooperation. She has also produced policy briefs and blogs on regional and bilateral issues and business recommendations. Her research interests include sustainable development, diplomacy and socioeconomics.

Teboho J. Lebakeng is a research associate at the University of Limpopo, South Africa. He holds a doctorate degree in sociology from the same university and master's degree in human services management from Springfield College, USA. He has published extensively in accredited journals and book chapters in reputable publishers. He has mentored doctoral and supervised masters at various tertiary institutions. His research interests are in the legislature, democracy socio-economic development; sociology of knowledge and gender development.

Tomoko Oikawa who holds Ph.D. degree in economic sociology and cultural studies is a researcher at University of Limerick for the Euro-Asia Centre. She is a regular invited speaker of V. International Applied Social Sciences (C-IASOS) Congress in Turkey since 2017. Her main subject is comparative study between West and East in terms mainly of management of business and its related social or cultural values. Her published books are four with other authors and one independent. Forthcoming book in 2022 is co-authored, titled "Perspectives on Sustainable Development in Asia" based on her presentation at Euro-Asia Roundtable in 2020. The publishing company is Springer. Her main interest is in presentations for international conferences, mostly ASECU international conferences and V. International Applied Social Sciences (C-IASOS) Congress. Most of them are

available on-line, i.e. research gate. One of her papers was awarded as one of top ten papers presented at the AIB-UKI international conference.

WJKVMR Jayawardhane is having an MBA in human recourse management at University of Colombo Sri Lanka. She has obtained her Bachelor's degree in the field of business management at Sabaragamuwa University of Sri Lanka. Further she has presented a research paper in an international conference on business. She is also a certified practitioner and trainer of soft skills development and practical psychology. WJKVMR Jayawardhane is currently attached to the National Enterprise Development Authority, Sri Lanka. Her main research is in field of entrepreneurship and human resource management (HRM).