



## INFORMATION INTEGRATION WITH COVID-19 TO SUPPORT START UP ENTREPRENEURS IN THAILAND

Manuscript submission Date: 2020, August 25

Article Editing Date: 2020, October 1

Article Accepted Date: 2020, September 10

Thitiya Klobsanthia\*

### ABSTRACT

Information integration is importance for improving start up entrepreneurs in Thailand. Through an empirical study this study aims to identify the key factors that influence financial and non-financial performance through information integration in Thai agricultural start up entrepreneurs. We surveyed start up entrepreneurs operating in Thailand, and analysed data through SPSS. The study findings revealed that information sharing, information technology can positively influence both financial performance and non-financial performance. Overall, this research opens up the unexplored information integration elements, through which the sector can be benefited to improve the start-up entrepreneurs in Thailand as well as improve the business efficiency with COVID-19.

**Keywords:** information integration, financial, non-financial performance, COVID-19, Thailand.

### INTRODUCTION

In December 2019, an outbreak of coronavirus disease (COVID-19) began in China and spread rapidly worldwide. It is unknown whether hemodialysis patients represent a distinct group of patients with certain characteristics (Wang et al., 2020). In April 2020, 28 new cases of laboratory-confirmed COVID-19 were announced by the Ministry of Public Health of Thailand, bringing the total number of cases to 2,700. There were many Thai start up entrepreneur affected to financial performance and

---

\* Lecturer, Faculty of Business Administration, Sripatum University-Chonburi Campus  
e-Mail: thitiya2531@hotmail.com



non-financial performance (Bank of Thailand, Online, 2020). Thus, start up entrepreneurs are lack the knowledge that they require to find the strategy to improve non-financial and financial performance in COVID-19 outbreak (VOX.LACEA, Online, 2020).

## RESEARCH OBJECTIVES

This research will examine:

1. Factors that have significance in information sharing, information technology, financial and non-financial performance in Thai start up organisation.
2. Whether information sharing has a positive influence on financial performance for start up entrepreneurs in Thailand.
3. Whether information sharing has a positive influence on non-financial performance for start up entrepreneurs in Thailand.
4. Whether information technology has a positive influence on financial performance for start up entrepreneurs in Thailand.
5. Whether information technology has a positive influence on non-financial performance for start up entrepreneurs in Thailand.

## HYPOTHESIS DEVELOPMENT

Non-financial performance (NFP) can be help overcome the limitations of financial performance measures as a single indicator. In addition, NF performance measures (NFPMs) can effectively enhance communication between people in the organization. Research also suggests that NFP measures able to boost long-term firm success. Non-finance earning include operational performance, product and service innovations, relationship with customers, relationship with employees, relationship with suppliers, alliances with other organizations, community, environmental (Yuliansyah, 2015). The Covid-19 outbreak will have a drastic impact on the Thai Firms (Thailand Board of Investment, Online, 2017). Thus, Thai start up Entrepreneurs need to find the strategy to encourage on The Covid-19 outbreak.

The impact of COVID-19 outbreak on households and businesses as support small and medium-sized enterprises (SMEs), which are the backbone of the Thai



economy and a primary source of employment, to have sufficient funding and liquidity to bridge through these testing times and retain their workforce. It is also necessary to have measures to stabilize the corporate bond market to ensure the normal functioning of the market as the financing source for the private sector and to safeguard the economy and financial stability as a whole (Bank of Thailand, Online, 2020). However, entrepreneurs requires the financial to operate their business, they need to improve their management by using information technology as Thai government to support the policy Thailand 4.0 (Thailand Board of Investment, Online, 2017).

In the context of information integration, it is widely recognized that information technology capabilities and information sharing have significant effects on firm performance (Prajogo & Olhager, 2012 a). Therefore, the focus should be on addressing this discrepancy in order to make the start up production as efficient and as uniform as possible, irrespective of the entity size. The appropriate IT capability can be optimally utilized by using existing telephone, fax, and internet facilities to ensure that financial and non-financial performance in Thai start up organisations with managerial effectiveness.

In the context of agricultural distribution logistics integration with IT and relevant performances, this research proposes the following hypothesis:

H1: Information sharing and financial performance are positively correlated for start up entrepreneurs in Thailand.

H2: Information sharing and non-financial performance are positively correlated for start up entrepreneurs in Thailand.

H3: Information technology and financial performance are positively correlated for start up entrepreneurs in Thailand.

H4: Information technology and non-financial performance are positively correlated for start up entrepreneurs in Thailand.

The proposed research model consists of five key constructs, including two independent variables, and two dependent variables. The independent variables are (i) information sharing (Prajogo & Olhager, 2012 b), (ii) Information technology (Lai, et al, 2008) and the dependent variable are (i) Financial performance and (ii) Non-financial performance (Yuliansyah, 2015). The research model is shown in Figure 1.

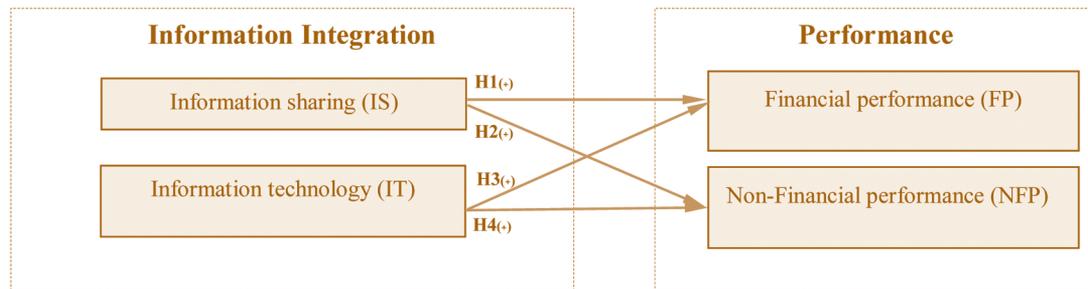


Figure 1. Conceptual framework of the study (indicating H1, H2, H3, and H4)

## METHODOLOGY

This research used the positivist paradigm through quantitative research method. For example, in social science research, the positivist paradigm has its roots in physical science, as it adopts a systematic, scientific approach to research (Veal, 2005). The key features of the scientific method include: (1) observation and data collection, (2) search for patterns and theory development, (3) forming hypotheses to test the theory, (4) conducting research to test the hypotheses, and (5) providing support for the theory, or making adjustments, if needed (Coolican, 2014). Based on these characteristics, quantitative approach can be said to align with the positivist paradigm (Sachan & Datta, 2005). In this research, survey is used as a data collection instrument, as it enables quantification of gathered information, through statistical tests and analyses, in order to meet the set objectives. Surveys can be employed in quantitative research that aims to test the hypotheses in order to answer the research questions (Veal, 2005).

### Sample, Data Collection and Analysis Techniques

**Population:** This research involves start up entrepreneurs in Thailand, the total target population consists of 5,370 organizations operating in Thailand (The Office of Small and Medium Enterprises Promotion (OSMEP), 2016)

**Sample size:** Sampling design and the sample size are important for establishing the representativeness of the sample in terms of generalizability of the subsequent findings to the entire population of interest (Veal, 2005). For this study, sampling is the process of selecting a sufficient number of members of the



population of interest, which can be done purposefully or randomly. For this study, as the population size was small, it was important to include the entire population as potential study participants (i.e., survey respondents) (Sekaran, 2003). As the study aimed to investigate start up entrepreneurs in Thailand, the total target population consisted of 5,370 organizations (The Office of Small and Medium Enterprises Promotion (OSMEP), 2016). As the target result consist of 420 entrepreneurs. These are located throughout of Thailand including Thai start up entrepreneurs that join the start up project with OSMEP in 2016. Sample method of this research was conducted with accidental sampling.

**Data Collection:** The data collection implemented in this research comprised pilot study with 30 samples and the full samples survey questionnaire by google forms between 1 March 2020 to 31 May 2020 via e-Mail. For the main study, the survey questionnaire comprising six sections was designed. Section A, comprised 5 items and sought participants' views on factors that are critical for information sharing (IS). Section B, consisting of 6 items, sought their views on factors that are critical for Information technology (IT). Section C, examined factors that are critical for financial performance (FP) and included 5 items. Section D, comprised 5 items related to factors that are critical for non-financial performance (NFP). Section E, included items pertinent to general information about the participants and included 4 items. Lastly, Section F, allowed the respondents to express any additional comments in the blank space provided, which can be treated as one item.

**Reliability and validity:** The key indicators of the quality of a measuring instrument are its reliability and validity (Kim, 2009). Thus, reliability and validity tests are conducted with the aim of reducing measurement errors that arise from utilizing the instrument as a part of the data collection. In this study, the questionnaire was subjected to reliability assessment, which included calculation of the Cronbach's alpha coefficient of each construct (factor), as well as composite reliability (CR) and squared multiple correlations (SMC) (Hair et al., 2010). On the other hand, validity is the extent to which the data collected truly reflect the phenomenon being studied. This issue also remains because some degree of uncertainty is always present when attempting to establish the true meaning of responses given in surveys and interviews, in which



the participants are self-reporting on the phenomena of interest (Ticehurst & Veal, 2000). In this study we tested content validity, criterion-related validity, and construct validity (Sekaran, 2003). Content validity was ascertained by seeking input from expert opinion (two professionals, two entrepreneurs in the field), and by conducting the previously described pilot study in which representatives of all sub-populations (start up entrepreneur in Thailand ) took part (Hair et al., 2010).

**Data analysis:** Data analysis was performed by using SPSS such as frequency and percentage, arithmetic means and standard deviation, and testing hypotheses to analyze the influence of independent variables on the variables. Moreover, the data were analyzed by inferential statistics such as t-test statistics by independent variables, samples *t*-test, *F*-test statistics using one-way ANOVA method and multiple regression analysis to set the significance level at .05.

## FINDINGS

Table 1: Means and stand deviations for information sharing (IS), information technology (IT), financial performance (FP), and non-financial performance (NFP).

Factors	Items	Item descriptions	Mean	SD
Information sharing	IS		4.59	0.44
	IS1	1.1 We share sensitive information (financial, production, design, research, and/or competition)	4.58	0.49
	IS2	1.2 Suppliers are provided with any information that might help them	4.61	0.49
	IS3	1.3 Exchange of information takes place frequently, informally, and/or timely	4.59	0.49
	IS4	1.4 We keep each other informed about events or changes that may affect the other party	4.58	0.50
	IS5	1.5 We have frequent face-to-face planning/communication with our suppliers	4.58	0.50



Table 1. (continued)

Factors	Items	Item descriptions	Mean	SD
Information Technology	IT		4.57	0.45
	IT1	2.1 There are direct computer-to-computer links with key suppliers	4.56	0.50
	IT2	2.2 Inter-organizational coordination is achieved using electronic links	4.56	0.50
	IT3	2.3 We use information technology-enabled transaction processing	4.57	0.50
	IT4	2.4 We have electronic mailing capabilities with our key suppliers	4.58	0.49
	IT5	2.5 We use electronic transfer of purchase orders, invoices, and/or funds	4.58	0.49
	IT6	2.6 We use advanced information systems to track and/or expedite shipments	4.59	0.49
Financial Performance	FP		4.54	0.46
	FP1	3.1 Your organisation is effective ROA	4.54	0.50
	FP2	3.2 Your organisation is effective ROE	4.55	0.50
	FP3	3.3 Your organisation is effective sale growth	4.54	0.50
	FP4	3.4 Your organisation is effective cash flow	4.55	0.50
	FP5	3.5 Your organisation is effective share earning with stake holders	4.53	0.50
Non-Financial Performance	NFP		4.62	0.45
	NFP1	4.1 Your operational performance (e.g., safety, on time delivery, cycle time)	4.61	0.49
	NFP2	4.2 Your product and service innovations (e.g., new service products, service development cycle time)	4.62	0.49



Table 1. (continued)

Factors	Items	Item descriptions	Mean	SD
	NFP3 4.3	Your relationship with customers (e.g., customer satisfaction, customer loyalty)	4.62	0.49
	NFP4 4.4	Your relationship with employees (e.g., employees turnover, employees satisfaction)	4.63	0.48
	NFP5 4.5	Your relationship with suppliers (e.g., input into product/service design, on time delivery)	4.63	0.48

From Table 1, we can be seen that the results as following:

1. The level of opinions on information sharing (IS) in start up entrepreneurs found that the overall level was at a high level (Mean = 4.59, *SD* = 0.44), when considered on an individual side, was found at the highest level of all aspects. Overall, it is at the highest level (Mean = 4.61, *SD* = 0.49), with the highest average, suppliers are provided with any information that might help them.

2. The level of opinions on information technology (IT) in start up entrepreneurs found that the overall level was at a high level by high average (Mean = 4.57, *SD* = 0.45), when considered on an individual side, was found at the highest level of all aspects. Overall, it is at the highest level (Mean = 4.59, *SD* = 0.49), with the highest average, entrepreneurs have frequent face-to-face planning/communication with our suppliers.

3. As opinion level of financial performance (FP). Overall, the high level (Mean = 4.54, *SD* = 0.46), with the most average, is that cash flow (Mean = 4.55, *SD* = 0.50) and ROE (Mean = 4.55, *SD* = 0.50).

4. On final variables, non-financial performance (NFP) in start up entrepreneurs found that the overall level was at a high level (Mean = 4.62, *SD* = 0.45), when considered on an individual side, was found at the highest level of all aspects. Overall, it is at the highest level (Mean = 4.63, *SD* = 0.48), with the highest average including entrepreneurs relationship with employees (e.g., employees turnover, employees satisfaction), and entrepreneurs relationship with suppliers (e.g., input into product/service design, on time delivery).



The findings of this research aim to elucidate the relationship among information sharing, information technology, financial performance and non-financial performance. The research results revealed that information sharing was significantly with financial performance ( $F = 71.000^*$ ,  $p = .000$ ) and non-financial performance ( $F = 27.599^*$ ,  $p = .000$ ). Information technology was significantly with financial performance ( $F = 92.658^*$ ,  $p = .000$ ) and non-financial performance ( $F = 44.123^*$ ,  $p = .000$ ).

Table 2: Regression coefficient of information sharing and information technology affect to financial Performance.

Variables	<i>B</i>	<i>S.E.</i>	<i>Beta</i>
Constant	.501	.170	
Information sharing (IS)	.429	.040	.415
Information technology (IT)	.455	.039	.446

$R^2 = 0.576$ ,  $SEE = 0.297$ ,  $F = 285.554^*$ ,  $p = .000$

\* $p < .05$

The regression equation of financial performance can be written as following:  
Financial performance (FP) =  $0.501 + 0.429IS + 0.455IT$

From the regression equation, it was found that information technology had the first positive overall financial performance, followed by information sharing.

Table 3: Regression coefficient of information sharing and information technology affect to non-financial Performance.

Variables	<i>B</i>	<i>S.E.</i>	<i>Beta</i>
Constant	1.560	.210	
Information sharing (IS)	.290	.049	.284
Information technology (IT)	.379	.048	.375

$R^2 = 0.337$ ,  $SEE = 0.3678$ ,  $F = 107.654^*$ ,  $p = .000$

\* $p < .05$



The regression equation of financial performance can be written as following:

$$\text{Non financial performance (NFP)} = 1.560 + 0.290\text{IS} + 0.379\text{IT}$$

From the regression equation, it was found that information technology had the first positive overall non-financial performance, followed by information sharing.

## DISCUSSION

The research identified information sharing and information technology for non-financial and financial performance. Previous studies on information integration have yielded very few published articles that information sharing and information technology address leads to improved non-financial and financial performance (Prajogo & Olhager, 2012 b). As the study revealed, these industry practitioners can use information integration, support for improving non-financial performance (Milovanovic, 2014).

## CONCLUSION

The findings indicated that both non-financial and financial performance are significantly affected by information sharing and information technology.

## REFERENCES

- Bank of Thailand. (2020). *Additional measures to assist SMEs affected by COVID-19 and to stabilize corporate bond market* (Online). Available: <https://www.bot.or.th/English/PressandSpeeches/Press/2020/Pages/n2063.aspx> [2020, April 20].
- Coolican, H. (2014). *Research methods and statistics in psychology* (6th ed.). Sussex, UK: Psychology Press.
- Hair, J. F., et al. (2010). *Multivariate data analysis*. Upper Saddle River, NJ: Prentice Hall.
- Kim, S. W. (2009). An investigation on the direct and indirect effect of supply chain integration on firm performance. *International Journal of Production Economics*, *119*, pp. 328-346.
- Lai, F., et al. (2008). The information technology capability of third-party logistics providers: A resource-based view and empirical evidence from China. *Journal of Supply Chain Management*, *44*, pp. 22-38.



- Milovanovic, S. (2014). The role and potential of information technology in agricultural improvement. *Ekonomika poljoprivrede*, **61**, pp. 471-485.
- Prajogo, D., & Olhager, J. (2012 a). Supply chain integration and performance: The effects of long-term relationships, information technology and sharing, and logistics integration. *International Journal of Production Economics*, **135**(1), pp. 514-522.
- \_\_\_\_\_. (2012 b). Supply chain integration and performance: The effects of long-term relationships, information technology and sharing, and logistics integration. *International Journal of Production Economics*, **135**(1), pp. 514-522.
- Sachan, A., & Datta, S. (2005). Review of supply chain management and logistics research. *International Journal of Physical Distribution & Logistics Management*, **35**, pp. 664-705.
- Sekaran, U. (2003). *Research methods for business: A skill-building approach* (4th ed.). New York, NY: John Wiley & Sons.
- Thailand Board of Investment. (2017). *Thailand 4.0 means opportunity Thailand* (Online). Available: [https://www.boi.go.th/upload/content/TIR\\_Jan\\_32824.pdf](https://www.boi.go.th/upload/content/TIR_Jan_32824.pdf) [2017, March 20].
- The Office of Small and Medium Enterprises Promotion (OSMEP). (2016). *Annual report*. Bangkok, Thailand: The Office of Small and Medium Enterprises Promotion (OSMEP).
- Ticehurst, G. W., & Veal, A. J. (2000). *Business research methods: A managerial approach*. Frenchs Forest, Australia: Pearson Education Australia.
- Veal, A. J. (2005). *Business research methods: A managerial approach*. Frenchs Forest, Australia: Pearson Education Australia.
- VOX.LACEA. (2020). *Start-ups in the time of COVID-19: Facing the challenges, seizing the opportunities* (Online). Available: <https://voxeu.org/article/challenges-and-opportunities-start-ups-time-covid-19> [2020, June 26].
- Wang, et al. (2020). COVID-19 in hemodialysis patients: A report of 5 cases. *American Journal of Kidney Diseases*. **76**(1), pp. 141-143.
- Yuliansyah, Y. (2015). Non-financial performance measures and managerial performance: The mediation role of innovation in An Indonesian Stock Exchange-listed Organization. *Problems and Perspectives in Management*, **13**(4). pp. 135-144.