

## ICT AND INNOVATION ENABLED BUSINESS PERFORMANCE: THE EFFECT OF COVID 19

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**Abstract.** Information communication technology has provided a transformative impetus for how an individual lives, interacts and works. COVID-19 has pushed the cessation of social and economic activities that led Information and Communication Technologies (ICT) as significant tool for business can communicate, store, and manage the necessary information. However not all businesses have the aptitude to change and adopt the necessary ICT to survive such a dynamic market. Therefore, this study aims to examine the influence of ICT, innovation, and corporate entrepreneurship on business performance. This is a quantitative study using a non-probability purposive sampling design. The study includes 204 respondents who are business owners currently using ICT to run their businesses. The data was obtained through online questionnaires and all the data processed and analyzed using SPSS and AMOS. The results show a direct and indirect relationship between ICT and innovation towards business performance, with corporate entrepreneurship as a significant mediating variable. The study brings further empirical proof that ICT literacy needs to be paired with innovation and entrepreneurial movement of business that could improve performance.

**Keywords:** Information and Communication Technology (ICT), Innovation, Corporate Entrepreneurship, Performance, Covid-19.

**Abstrak.** Teknologi komunikasi informasi telah mendorong secara transformatif cara kita hidup, berinteraksi dan bekerja. Pandemi COVID-19 telah menyebabkan terhentinya aktivitas sosial dan ekonomi, alhasil Teknologi Informasi dan Komunikasi (ICT) menjadi penting bagi banyak bisnis untuk berkomunikasi, menyimpan, dan mengelola informasi yang mereka perlukan. Namun tidak semua bisnis memiliki kemampuan untuk mengubah dan mengadopsi ICT yang diperlukan untuk bertahan di pasar yang dinamis. Oleh karena itu, penelitian ini bertujuan untuk menguji pengaruh ICT, inovasi, dan kewirausahaan perusahaan terhadap kinerja bisnis. Penelitian ini merupakan penelitian kuantitatif dengan desain model sampling non probabilitas. Penelitian ini melibatkan 204 responden yang merupakan pemilik bisnis yang saat ini menggunakan ICT untuk menjalankan bisnis mereka. Data diperoleh melalui kuesioner online, data diolah dan dianalisis menggunakan SPSS dan AMOS. Hasil penelitian menunjukkan hubungan langsung dan tidak langsung antara ICT dan inovasi terhadap kinerja bisnis, dengan kewirausahaan sebagai variabel mediasi yang signifikan. Studi ini membawa bukti empiris lebih lanjut bahwa literasi ICT perlu disertai dengan inovasi dan gerakan kewirausahaan bisnis yang dapat meningkatkan kinerja.

**Kata Kunci :** Information and Communication Technology (ICT), Innovation, Corporate Entrepreneurship, Performance, Covid-19.

## INTRODUCTION

The widespread break of COVID-19 pandemic throughout the world has forced social and economic activities to shut down in almost all countries (Dermawan, 2020). The increasing number of e-commerce users in Indonesia has made Indonesia a country whose e-commerce value growth has reached 78%, the highest in the world. Technology became a vital in keeping societies alive during lockdowns and quarantines. With technology, especially Information and Communication Technologies (ICT) plays a significant support to business dan daily activities such as online shopping contactless transactions, working from home, distance learning, online entertainment, and emergences of telehealth (Xiao & Fan, 2020). Changes in the business environment that occur very rapidly have led to increased dependence on ICT to achieve and maintain a business's competitiveness, increase profitability, and succeed in today's dynamic market (Yunis et al., 2018). Such is the extremely dynamic environment in the case of business surviving COVID-19.

Information and Communication Technology (ICT) is a general term that involves the use of computers, including hardware, software, and networks that are used to communicate, store and manage information needed (Kumar et al., 2014). An apparent increasing reliance on ICT encourages innovation-related activities, all of which tend to be technology-based, designed to achieve better efficiency and higher performance. Further importance of information technology is found able to increase business performance of publicly listed companies in Indonesia (Widjaja et al., 2020). However, there is not always association between innovation and organizational performance (idem). Information technology is also credited to achieve sustainability business objectives, resulting in positive economic, social, and environmental changes (Vidmar, 2021). Information and communication technology also pushes organizational development deal affecting from the strategic, social, to the human development in an organization (Saleem, 2020).

Kuratko & Morris, (2018) considers entrepreneurial strategy also motivates a company to maintain an edge in the market. Given the high level of dynamism in the company's external environment, lack of entrepreneurial action, in today's global economy, can be a recipe for failure. Businesses are concerned with corporate entrepreneurship (CE) practices to achieve a higher level of performance (Karacaoglu et al., 2012). However, there are differences in motivation behind every CE activity carried out by a company when assessing its performance results (Phan et al., 2009). Until now, only several literatures have assessed the relationship between CE and the performance of a company objectively, namely through financial performance and perceived non-financial performance such as customer satisfaction (Ağca et al., 2012).

Furthermore, although the majority big global companies may already have technology and information dependent competitiveness, such success is not much investigated for SMEs in Indonesia. As a critical agent for the national economy, SMEs have also needed to enhance their ITC level. Both business and managerial communication, creates interconnectedness that have the potential to improve competitiveness and performance. Consequently limited business communication and information technology could pose as a threat to the business (Pikhart, 2020). Given the gap, this study will then

seek to assess the relationship between ITC, corporate entrepreneurship, and performance of SMEs in Indonesia.

## LITERATURE REVIEW

Information and communication technology (ICT) have various business applications, from data analysis, administrative tasks, inventory control, accounting, engineering to market research. Without ICT tools such as computers, laptops, and software, it will be tough for business owners to carry out daily business operations. According to Manochehri et al., (2012), ICT is one of the primary keys that can be used to increase a business's competitiveness. ICT platforms such as computers, laptops, cell phones, the internet, and so on have four main contributions to a company. First, it gives more visibility to a business. Second, it provides more information to a business regarding market trends and so on. Third, it also helps a company to overcome traditional trade barriers.

Advertently, information technology (IT) and knowledge integration could individually and jointly influence efficiency-centered business model, with more novel innovative business found in more higher IT capable businesses (Guo, 2021). IT strategies in this case constitute as value drivers of IT implementation, competitive factors and an IT competitive strategy (Puspitasari & Jie, 2020). Yet other studies still found that, in contrary, IT does not mediate the effect of productivity on business outcomes (Shker, 2020). This leads to businesses furthering push innovative behaviors, approaches, and procedures to increase performance.

Furthermore, ICT makes services more comfortable to trade and could increase manufacturing firms' productivity. Not only that, the use of e-mail, e-commerce, and social media has significantly reduced the physical transportation involved in mailing, banking, advertising, and purchasing goods. It is very beneficial for a business because it increases efficiency and reduced costs. Furthermore Zoroja (2016) added that with its swift progress and development, ICT is a supporting tool for enhancing innovation, business process management, strategy making, and strengthening the competitiveness of a business. Therefore, companies and countries that are ready to use ICT faster and better than others will have the ability to produce products and services with better quality, but at lower costs, thus improving company performance and providing benefits in a long time.

**H1:** Information communication technology (ICT) has a positive and significant impact on performance.

According to Spiezia, (2011), information and communication technologies (ICT) can also be seen as a source of innovation, as it enables closer relationships between businesses, suppliers, customers, competitors, and partners. All these agents can act as sources of ideas, which are very important for innovation. With closer communication and collaboration, ICT helps a business be more responsive towards innovation opportunities, thus provide significant efficiency gains. For example, ICT tools such as; the internet, web presence, and automated system linkages will help a business follow customer trends, monitor competitors' actions, and quickly get user feedback. It will help a company take advantage of all kinds of innovation.

ICT also provides efficiency advantages and a higher level of innovation because innovation presents new ways of managing a business that can significantly be improved through ICT use (Okundaye et al., 2019). Therefore, the most progressive and innovative organizations develop and use ICT to facilitate and encourage innovation in business processes and the products or services they offered (Arvanitis et al., 2013). found that SMEs in Japan that use computers are more likely to engage in innovative activities than companies that do not use computers (Morikawa, 2004). Meanwhile, in European companies, also found that the technology used by e-business is a fundamental trigger for innovation, either through process improvements or offering new products or services (Roessler & Koellinger, 2012).

**H2:** Information and communication technology (ICT) has a positive and significant impact on innovation.

Innovation must be an idea that is replicable at an economical cost and must meet certain needs. Innovation involves the deliberate application of information, imagination, and initiative in obtaining greater or different value from resources and includes all processes by which new ideas are generated and transformed into useful products. In the business world, innovation often arises when ideas are implemented by companies to better meet customer needs and expectations (Permana, 2019)

According to Jong, (2000), innovation is the development and successful implementation of a new or improved product, service, work process or market condition, aiming to gain a competitive advantage. Innovation plays a vital role in enhancing a company's competitive advantage and a country's economic development (Serdyukov, 2017). It's because innovative entrepreneurs have the first-mover advantage by introducing new ideas, processes, products, services, or improving the usability of the products or services offered, thereby increasing profitability (Franco & Garcia, 2017). Thus, it will result in innovative companies being more competitive, which allows them to replace the non-innovative ones.

**H3:** Innovation has a positive and significant impact on performance.

ICT has been considered a facilitator of innovation in products and processes. It's especially true for dynamic companies, with highly competitive environments, where the use of ICT is needed to increase efficiency and cost-effectiveness to offer high-quality products and services to their clients (Cuevas-Vargas et al., 2016). Therefore, it is crucial for a business to implement ICT as a business strategy to increase efficiency and competitiveness (Ongori & Migiro, 2010), increase productivity, and get client, worker, also supplier satisfaction (Cuevas-Vargas et al., 2016). It is very important because it can help businesses face many challenges in the local and global market environment, which is very competitive and constantly changing. Also, Gretton et al., (2003) state that using ICT makes innovation development relatively more effortless and cost-effective, but the result can be a source of greater productivity, resulting in higher business performance.

**H4:** Innovation mediates the relationship between ICT and performance.

Since the last two decades, several changes and developments have resulted from technological advances and scientific discoveries. Technology is an agent of change,

therefore can create opportunities that can be taken and developed by companies that have implemented corporate entrepreneurship in their companies as a whole (OECD, 2003). ICT can activate corporate entrepreneurship (CE) in a company by two ways; offering the information needed for CE activities and building an adequate technological environment, to support CE activities within the company (Chen et al., 2015). Companies need to use ICT to collect data from multiple channels, including external data on; competitors, partners, and other stakeholders, to identify market opportunities. Quick access to real-time market data provided by ICT is crucial for a company because it can determine a company's ability to proactively identify and respond to opportunities that exist, to influence decision-making about entrepreneurial initiatives. Further ICT infrastructure allows a company to collect and analyzes data about products and demands, as well as customer preferences, then distribute the data to various business processes, such as R&D and manufacturing, to increase efficiency and effectiveness.

**H5:** ICT has a positive and significant impact on corporate entrepreneurship.

Innovation in a company, found that corporate entrepreneurship plays a crucial role in exploiting innovation opportunities and increasing the company's growth (Naudé, 2013). Without corporate entrepreneurship, a company's capability to innovate will not be exploited or improved (Thornberry, 2001). Innovation and corporate entrepreneurship must be linked to one another, because in a business environment, innovation in the production process is essential in entrepreneurship. However, entrepreneurial activities are also needed to encourage innovation, in order to increase a company's competitive advantage (Amit et al., 1993).

**H6:** Innovation has a positive and significant impact on corporate entrepreneurship.

**H7:** Innovation mediates the relationship between ICT and corporate entrepreneurship.

Corporate Entrepreneurship has led to developments in a company's performance, examine the direct impact of corporate entrepreneurship orientation and activities on the growth and profitability of a company. Corporate entrepreneurship and intrapreneurship increases profitability and growth, positively impacting a company's performance through risk-taking, innovation, and proactive competitive behavior (Janczak & Boiteux, 2007). This behavior, which is considered as a dimension of CE, can be reflected through top management risk-taking efforts regarding: investment decisions, strategic actions in dealing with uncertainty, the extent and frequency of product innovation, technology leadership, and the tendency to compete aggressively and proactively with industrial competitors (Zahra, 1991). Entrepreneurial strategy motivates a company to maintain an edge in the market, given a high degree of dynamism in the company's external environment, but lack of entrepreneurial action can be a recipe for failure (Kuratko & Morris, 2018a). Therefore, based on this literature, it is considered that businesses that are more concerned with corporate entrepreneurship practices will achieve a higher level of performance, compared to other companies (Karacaoglu et al., 2012).

**H8:** Corporate entrepreneurship has a positive and significant impact on performance.

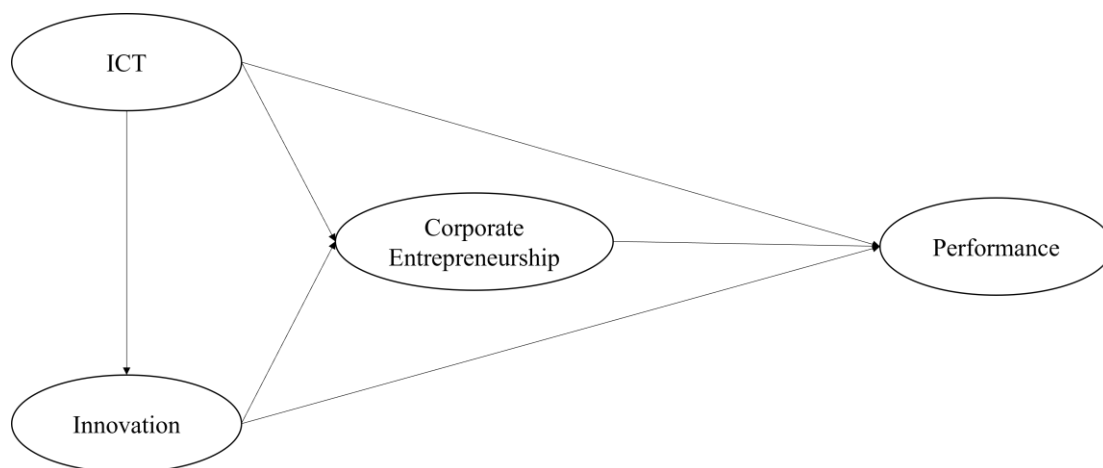
ICT increases productivity, market share and also provides many benefits for a company, such as; assistance in introducing new products, making a company more

customer-oriented, helping to respond to market changes better, and also helping a company to innovate, to improve their performance (Gërguri-Rashiti et al., 2015). It is very important, especially in the current digital era and the global economy, where competition between businesses has increased and has become knowledge based (A Szirmai et al., 2011).

Therefore, companies with corporate entrepreneurship, supported by ICT and innovation, will realize that ideas developed earlier can become the basis for new processes, goods, or services. Companies that have pioneered the creation or introduction of new products or technologies, which are the signs of companies that practice CE, often achieve superior financial performance. Pioneer can target premium market segments, charge high prices, control access to markets by dominating distribution channels, and set their products as industry standards. This action helped the pioneers to acquire and maintain a high market share and achieve profitability (Zahra & Covin, 1995). Being a pioneer will also allow a company to revise competition rules, redefine industry boundaries, and prevent potential competitors from entering the industry, thus improve a company's competitive posture.

**H9:** Corporate entrepreneurship mediates the relationship between ICT and performance.

**H10:** Corporate entrepreneurship mediates the relationship between innovation and performance.



**Figure 1.** Research Model

## METHOD

The data collection technique used in this study is a multiple-choice questions questionnaire digitally to business owners who use ICT and the internet to run their business using Google Forms through Line and Instagram to be filled in by business owners who use ICT and the internet to run their business. Several variables and items are used in this study (Table 1). The measurement scale used in the questionnaire, was determined items that can represent the respondents' attitudes and opinions towards ICT, innovation, corporate entrepreneurship, and performance.

**Table 1.** Item Variable

<b>Variable Items</b>	
ICT1	Availability of technology improves your business performance.
ICT2	Technology is used to increase the efficiency of your business.
ICT3	Using technology in your business increases the speed of service to consumers.
ICT4	The use of technology allows your business to get market information.
INO1	Add value to the products your business offers.
INO2	Providing improvements to the products your business offers.
INO3	Your business is focused on new ideas.
CE1	The number of new product launches your business has offered over the last 5 years.
CE2	The number of product improvements or revisions your business has made in the last 5 years.
CE3	Comparison of the number of new product launches your business has to offer against key competitors.
CE4	The level of significance of new operational methods or processes implemented in your business over the last 5 years.
PE1	Your business performance is better than competitors.
PE2	High productivity in your business.
PE3	Your business market share continues to grow.
PE4	In general, your business performance is high and continues to improve.

The sample design and the number of samples are equally important to determine the representativeness of the sample so that it can be generalized (Sekaran & Bougie, 2016). A sample must have a larger number of variables than the variables explored in a study. According to him, the absolute number of samples must have a minimum of 50 respondents (Hair et al., 2014). However, to maximize the research results so that they can be generalized, have confidence and a higher level of precision, then the minimum number of samples needed is the number of indicators proposed, multiplied by five. Based on this theory, the minimum number of samples for this study is 200 (40 indicators times 5). In addition, S. M. Chege et al., (2020) also stated that the sample size of 200-500 respondents was sufficient for a high-impact study.

The validity test aims to measure how well a technique or instrument measures the concept you want to measure. The questionnaire is the instrument used in this study, so the definition of the validity test becomes how well the indicators or statements in the questionnaire measure the concept you want to measure. The validity test itself has three types, namely, content validity, criterion-related validity and construct validity. In this study, the type of validity test used by the researcher is construct validity. The purpose of using the construct validity type is because the researcher wants to measure how well the indicators used can measure the construct in accordance with the theory.

Construct validity can be assessed in two ways, namely, first, convergent validity, where the values obtained from two different instruments, but measuring the same concept, have a high correlation. Second, discriminant validity, where two different instruments measure two uncorrelated concepts, indeed producing uncorrelated values (Sekaran &

Bougie, 2016). To measure convergent validity, researchers used average variance extracted (AVE) and composite reliability / construct reliability (CR). The value of AVE must be greater than 0.5 to indicate that convergent validity is acceptable. While the value that must be owned by CR is greater than 0.7, to indicate acceptable convergent validity (Hair et al., 2014).

In the reliability test stage, the items in the questionnaire will be tested with the standard stability of measures and internal consistency of measures. Stability of measures is the ability of a measurement to remain the same over time, regardless of uncontrolled test conditions or the circumstances of the respondents themselves. Testing the stability of measures and the internal consistency of these measures, can be done through the Cronbach's alpha coefficient test. Cronbach's alpha coefficient is a reliability coefficient that shows how well the items in a set are positively correlated with each other. The closer Cronbach's alpha to number 1, the higher the reliability of internal consistency while a value of 0.60-0.70 for Cronbach's alpha to be accepted (Sekaran & Bougie, 2016). In this study, the limit of Cronbach's alpha used by researchers is 0.70, so that Cronbach's alpha can be accepted.

Statistical analysis has become a very important tool for researchers when processing data. Structural Equation Modeling (SEM) is a method of multivariate analysis, which aims to explain the relationship between several variables simultaneously. SEM performs this analysis by examining the relationship structure expressed in a series of equations (Hair et al., 2014). This equation describes all the relationships between the constructs (dependent and independent variables) involved in the analysis (idem). This study analyzes the data using SPSS and AMOS applications.

## RESULTS AND DISCUSSION

A total of 204 respondents was used in this study. The respondents were mostly female (62.7%) and relatively young (49.0% with age range 16-21), based on the collected data. The education level was a bachelor's degree (72.1%), has 3-6 months experience (34.8%), and are in the food and beverages industry (37.3%). They were also primarily located in Jakarta (33.8%) and had a business income > IDR 10,000,000 (17.6%). All indicator items were tested to determine the validity in measuring each variables using standardized loading estimates. The results in Table 2 shows, that all item indicators are valid measures for the variables with all loadings >0,70.



**Table 2.** Standardized Loading Estimates

Variable	Indicators	Estimates	Valid
Information and Communication Technology (ICT)	ICT1	0,803	Valid
	ICT2	0,739	Valid
	ICT 3	0,717	Valid
	ICT4	0,724	Valid
Innovation (INO)	INO1	0,742	Valid
	INO2	0,876	Valid
	INO3	0,654	Valid
Corporate Entrepreneurship (CE)	CE1	0,781	Valid
	CE2	0,742	Valid
	CE3	0,826	Valid
	CE4	0,769	Valid
Performance (PE)	PE1	0,700	Valid
	PE2	0,812	Valid
	PE3	0,79	Valid
	PE4	0,715	Valid

**Table 3.** Convergent Validity Result

Variables	AVE	CR	Convergent Validity
Information and Communication Technology (ICT)	0.577	0.834	Established
Innovation (INO)	0.582	0.805	Established
Corporate Entrepreneurship (CE)	0.609	0.861	Established
Performance (PE)	0.556	0.832	Established

Collinearity test was also used to check but each variable is not correlated. Convergent validity test was used again to check whether the indicators measured the variables or not. Convergent validity was also established as shown in Table 1 below. Based on Table 2 below, the discriminant validity in this study is established where the AVE estimation for both factors must be greater than the correlation squared between two factors. Both convergent and discriminant validity was established (Table 3 and Table 4).

**Table 4.** Discriminant Validity Result

Variables	Correlations Squared	AVE1	AVE2	Discriminant Validity
ICT -> CE	0,05382	0.557	0.609	Established
ICT -> INO	0,05429	0.557	0.582	Established
ICT -> PE	0,15445	0.557	0.556	Established
INO -> CE	0,09734	0.582	0.609	Established
INO -> PE	0,07673	0.582	0.556	Established
CE -> PE	0,47748	0.609	0.556	Established

Hypothesis was also tested to see the direct and indirect effects of relationships between the variables and resulting in several accepted and few rejected hypotheses (Table 5 and Table 6).

**Table 5. Direct Effects**

	Relations	Estimates	CR	P-Value	Result
H1	ICT -> PE	0,294	3,319	***	Accepted
H2	ICT -> INO	0,344	2,696	0,007	Accepted
H3	INO -> PE	0,021	0,349	0,727	Rejected
H5	ICT -> CE	0,244	2,034	0,042	Accepted
H6	INO -> CE	0,267	3,151	0,002	Accepted
H8	CE -> PE	0,525	6,766	***	Accepted

**Table 6. Indirect Effects Using Zvalue**

	Relations	a	b	SEa	SEb	Z	Result
H4	ICT -> INO -> PE	0,344	0,021	0,13	0,06	0,361	Rejected
H7	ICT -> INO -> CE	0,344	0,267	0,13	0,09	2,296	Accepted
H9	ICT -> CE -> PE	0,244	0,525	0,12	0,08	2,135	Accepted
H10	INO -> CE -> PE	0,267	0,525	0,09	0,08	2,804	Accepted

H1 is accepted as the results of this study are in line Manochehri et al., (2012), where ICT can increase efficiency and create new opportunities for business, increase productivity (Papaioannou & Dimelis, 2007), gain new market share, and integrating all activities in a company, thereby, leading to an increase in the company's overall performance (Yunis et al., 2018). H2 is accepted and is supported with the theory put forward by Spiezia (2011) that Information and Communication Technologies (ICT) can be seen as a source innovation, because it enables a closer relationship between businesses, suppliers, customers, competitors and partners, which can serve as a source of ideas for the innovation process. With closer communication and collaboration, ICT helps a business to be more responsive to innovation opportunities and provides significant efficiency gains.

However, H3 was rejected whereas innovation does not positively influence performance. But H10 indicates a mediating effect where Corporate Entrepreneurship mediates the relationship between Innovation and Performance. H4 was also rejected, indicating that Innovation does not mediate the relationship between ICT and Performance, instead ICT which mediates the relationship between Innovation and Performance. Previous studies instead show that small and medium-sized enterprises (SMEs), rather than age of business and investments are factors that influence performance (Hastuti et al., 2021).

H5 is accepted. Supported as well by Chen et al., (2015), that ICT can activate Corporate Entrepreneurship (CE) in a company in two ways, namely; by offering the information needed for CE activities and also building an adequate technological environment, in order to support CE activities within the company. Furthermore, H6 is accepted. Corporate entrepreneurship plays a very important role in exploiting innovation opportunities and also increasing the growth of a company (Adam Szirmai et al., 2011).

Without corporate entrepreneurship, the capability of a company to innovate will not be exploited or enhanced. However, entrepreneurial activities are also needed to encourage innovation to increase a company's competitive advantage. Though business might have ICT adoption, it does not equate to productivity if not planned and stakeholder requirements are fulfilled (Tsuchiyama, 2020).

H7 is accepted and is supported that corporate entrepreneurship can be used to increase competitive positions and change companies, markets, and industries, giving opportunities to innovate. developed and can be exploited well first. This opportunity could be obtained using ICT, then it can be used by organizations with corporate entrepreneurship (Yunis et al., 2018). H8 is accepted supported that Corporate Entrepreneurship (CE) has led to developments in the performance of a company. ICT facilitates managers with quality-centered strategies as a tool for restructuring employment, they likely to rely on IT to avert work reassignment (Litwin, 2021).

H9 is accepted, which indicates that the findings of this study are in accordance with the theory of Brynjolfsson et al., (2009), which states that; ICT cannot contribute significantly or provide a prolonged competitive advantage, if company resources and work processes are not upgraded or modified to allow ICT to improve performance. Therefore, corporate entrepreneurship activities that integrate ICT in their implementation are urgently needed, to significantly increase the efficiency and performance of a company or organization. IT use enhances internal innovation benefits and increases open innovation for knowledge search and sharing (Hensen & Dong, 2020) which is indicative to corporate entrepreneurship.

H10 is accepted. That companies that are pioneering the creation or introduction of new products, which are the hallmarks of companies that practice CE, often achieve superior financial performance. This is due to the advantages possessed by the pioneers, namely, can target the premium market segment, target prices control access to markets by dominating distribution channels, and setting their products as industry standards. There are also different angles to the decision to adopt ITC by SMEs in Indonesia including consideration of company readiness benefits, technological compatibility, costs, technical skills, and also environmental pressure from customers and or competitor (Tyasari, 2021).

## CONCLUSION

ICT is a vital topic to study in today's digital era, a world that demand digital . Everything has shifted towards digital, including communicating with other people, conducting business transactions and being a source of income for some people. Therefore, it is essential to learn ICT, especially for business owners who wanted to improve their business performance, at the 'mature' stage. This study shows that the adoption of ICT alone is not sufficient to improve a business's performance. Still, there must be other supporting variables such as innovation and corporate entrepreneurship to significantly enhance a company's performance. ICT enhances business performance through its innovative use and application; thus, it must also be supported by improved or modified company resources and work processes to involve ICT, when carrying out corporate entrepreneurship activities, to increase efficiency and a company's performance.

With this study's results, it is hoped to provide new insights, contribute to knowledge, develop management science, and be used for further research. Since this research is limited by time and is also conducted in situations that are not 'normal' due to the COVID-19 pandemic, the suggestion for further research is to conduct a longitudinal study to see the effect of ICT's influence on business performance in the longer term. This longitudinal research should also be carried out in 'normal' situations, where there is no pandemic or anything in one place. All businesses are more active, so there is quite a different comparison between online and offline. Further research can also develop and research other variables, such as Organization Structure, Organization Capacity, Networking, Internal Resources and External Pressure. Further study could be done to bridge the gap of understanding between the role in digital innovation, business digital transformation.

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