

RESEARCH FINAL REPORT

Research summary between 250-500 words: research background, research objectives, stages of research methods, and targeted outputs. In this section, the researcher should describe the proposed research TKT.

SUMMARY

The COVID-19 pandemic is believed to have exerted a substantial influence on the expansion of the healthcare industry in Indonesia, particularly in sectors such as pharmacies, drugstores, and medical equipment stores. Amidst a period of deceleration in various business sectors, the healthcare industry has witnessed a notable surge in establishing new enterprises, indicating an emerging pattern. The healthcare activities sector experienced significant growth during the COVID-19 pandemic due to the rising demand for pharmaceuticals and medical equipment used to prevent and treat the COVID-19 disease. In the digital era characterized by the proliferation of digital activities during the pandemic, online searches have emerged as a viable means of acquiring information for business. One of the platforms that is widely used for digital information acquisition is Google. Google has maintained a significant market share in internet search engines for an extended duration, resulting in the widespread usage of "Googling" or "to Google" in daily language. Google dominates the market share with a significant 97.33%. According to estimates for 2023, the volume of search queries conducted on Google is projected to reach about 100,000 per second. This translates to around 8.5 billion daily searches and an estimated 2 trillion daily searches worldwide. In the contemporary era of real-time recording of web searches and transactions, a substantial amount of data is generated, encompassing valuable information about the healthcare industry.

The purpose of this study is to demonstrate that the internet search traffic information related to the selected key terms associated with establishing new businesses well reflects the dynamics of entrepreneurial activity in a country and can be used for predicting entrepreneurial activity at the national level in the healthcare industry. The theoretical framework is based on social information processing theory. Statistics on behavior related to new business creation from 2016 to 2021 are collected from the Indonesian Health Profile open database. Interviews with recent founders of new businesses are used to identify phrases of online search interest, and Google Trends is used to get internet search query statistics on the identified terms. This study uses both qualitative and quantitative method (mixed method) to gather and analyze the data. The qualitative method is conducted by interview while the quantitative method is conducted by regression and correlation analysis.

The findings show that web search data related to the opening of a pharmacy business, the digital footprint of marketing management, and the digital footprint of financial management in the pharmacy industry before the COVID-19 pandemic proved influential in initiating a pharmacy business. Meanwhile, these two factors showed different results during COVID-19, which did not affect to initiation of opening a pharmacy business. The targeted output of this study is being published in Reputable International Journal, namely Journal of Health Policy and Management (JHPM). TKT of this research is TKT 3 with the scheme of basic research (Penelitian Dasar).

Keywords: maximum 5 keywords. Use semicolon punctuation (;) as a separator and written in alphabetical order.

Entrepreneurial Activity; Healthcare Business; Entrepreneurs' Digital Footprint

Results and Discussion (1000-1500 words) containing: (i) the recent progress of research and the achievement, (ii) the recent data obtained, (iii) the results of data analysis, (iv) result discussion, and (v) the recent outputs achieved. The **data** and **research results** can be presented in figures, tables, graphs, etc., that are supported by relevant and up-to-date references. All reported results or achievements must be related to the research phase planned in the proposal.

RESEARCH RESULTS AND DISCUSSIONS

The study has obtained data from interviewing 10 healthcare business owners (pharmacy, drugstore, and medical equipment store) to get the query of digital footprint activity before and during COVID-19 Pandemic in initiating healthcare business. Thus, based on the interview process there are several queries related to the online searching activity in the healthcare business initiation as figured in the Table 1 below:

Table 1. Healthcare Business Activity Online Searching Query

Healthcare Business Activity	Variable Code	Query
Operasional	X1.1	Perizinan Apotek
Operasional	X1.2	Limbah Apotek
Operasional	X1.3	Tata Letak Usaha (Kesehatan)
Operasional	X1.4	Supplier Obat
Operasional	X1.5	Peraturan Menteri Kesehatan
Operasional	X1.6	Sistem Zonasi (Kesehatan)
Operasional	X1.7	Software Apotek
Operasional	X1.8	Jejaring Apotek (Kesehatan)
Pemasaran	X2.1	Promosi Apotek
Pemasaran	X2.2	Persaingan Usaha (Kesehatan)
Pemasaran	X2.3	Kerjasama Apotek
Pemasaran	X2.4	Varian Obat
Keuangan	X3.1	Keuangan Apotek
Keuangan	X3.2	Pengelolaan Keuangan (Kesehatan)

Each query was then searched for the number of searches during the 2016-2021 period through Google Trends analysis. The result of the Google Trend Analysis is shown below in Table 2:

Table 2. Google Trends Result of The Searching Query

Searching Query	2016	2017	2018	2019	2020	2021
Perizinan Apotek	854	674	662	774	942	1219
Limbah Apotek	344	300	202	311	312	756
Tata Letak Usaha (Kesehatan)	342	175	189	241	496	370
Supplier Obat	710	661	1048	1077	1327	1060
Peraturan Menteri Kesehatan	2317	2123	2093	2397	2738	2604
Sistem Zonasi (Kesehatan)	396	208	239	384	409	428
Software Apotek	1021	617	666	532	741	619
Jejaring Apotek (Kesehatan)	726	528	394	606	474	446
Promosi Apotek	525	423	506	476	644	298
Persaingan Usaha (Kesehatan)	136	243	302	331	393	202
Kerjasama Apotek	741	758	845	742	768	739
Varian Obat	694	783	640	1069	212	710
Keuangan Apotek	342	736	362	398	624	692
Pengelolaan Keuangan (Kesehatan)	583	685	469	444	506	305

This valid and reliable data was then regressed with data on the number of healthcare business initiations in Indonesia in the 2016-2022 period obtained from Indonesian Ministry of Health report data. The regression result is shown below:

Table 3. Result of Regression Test

Hypothesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Value
Before COVID-19					
Digital Footprint of Marketing Management → Initiation of Opening A Pharmacy Business	3.507	3.234	1.017	3.448	0.001
Digital Footprint of Financial Management → Initiation of Opening A Pharmacy Business	18.556	18.130	2.094	8.861	0.000
During COVID-19					
Digital Footprint of Marketing Management → Initiation of Opening A Pharmacy Business	-0.437	-0.080	5.181	0.084	0.466
Digital Footprint of Financial Management → Initiation of Opening A Pharmacy Business	-0.728	-0.419	5.145	0.141	0.444

DISCUSSION

The results of hypothesis 1a testing show that the digital footprint of marketing management in the pharmacy industry affected the initiation of opening a pharmacy business before the COVID-19 pandemic. The existence of electronic commerce has encouraged many companies to have digital marketing by taking advantage of all the opportunities provided by the Internet. Literature shows that in the emerging digital economy, adopting e-commerce platforms substantially affects transaction costs, delivery speed, customer satisfaction, and subsequent company performance, thus improving the digital footprint of marketing management [1]. A digital footprint of marketing management can increase the company's competitive advantage by accelerating access to information, product offerings, and information about competitors and encouraging the existence of Pharmacy Business. Several studies have attested to the strong impact of digital marketing on an industry's performance [2, 3]. According to [4], a company makes the most of its current resources to build competencies that improve its ability to compete and create value for its operations. According to [5], digital marketing companies can increase sales and improve performance.

Based on hypothesis 1b testing results, the digital footprint of financial management in the pharmacy industry affected the initiation of opening a pharmacy business before the COVID-19 pandemic. Empirical research shows that e-commerce adoption, such as digital footprint, can positively affect a company's financial performance [6, 7]. [6] observed that e-commerce adoption increases competitive advantage, characterized by differentiation, cost reduction, innovation, development, and alliance formation. The COVID-19 pandemic's effects on the economy have shown how crucial financial management procedures are for businesses of every kind [8]. Organizations can plan and allocate resources for both present and future operations through financial management strategies like budgeting and forecasting.

The results of hypothesis 2a and 2b testing show that the digital footprint of marketing and financial management in the pharmacy industry does not affect the initiation of opening a pharmacy business during the COVID-19 pandemic. Since people's behavior is known to change during a pandemic, leading to anxiety about medicine shortages, pharmaceutical products' marketing, and financial management were not becoming an issue of the pharmacy business. The main problem during the pandemic was not the marketing and financial issues but the supply of medicines stock. An increase in the demand for medicines could have caused the initial increase in medicine shortages, thus an increment in the volume of orders as pharmacies tried to stock up due to the increased demand and emptying of security stocks [9].

Output status, containing the **type, identity, and the achievement of each mandatory output and additional output** as stated in the proposal. The researcher should attach the document indicating the current status of the output, such as publication, intellectual property (HKI), experiment results, etc., as stated in the proposal. Scientific papers, books, etc., should attach similarity test results with a maximum of 25%.

OUTPUT STATUS

No	Output	Name	Jenis Luaran	Status
1.	Artikel di jurnal Internasional bereputasi	Journal of Health Policy and Management (JHPM)	Mandatory	In review (waiting for LoA)
2.	MoU Document	MoU between UAD and UMAM	Mandatory	Signed

The researcher should describe **the role** of partners in the context of **cooperation realization** and **partner contributions** both *in-kind* and *in-cash* (for Applied Research and Development/ *Penelitian Terapan dan Pengembangan*). Supporting evidence/document of this cooperation realization and contribution based on the actual conditions should be attached.

PARTNER ROLE

The role of this research partner from UMAM (Universiti Muhammadiyah Malaysia) are:

1. Contacting the interview's respondents.
2. Reviewing the statistical data analysis process.
3. Reviewing the draft of the article

Research Implementation Obstacles contain difficulties or obstacles encountered during conducting research and achieving the promised outcomes.

OBSTACLES DURING THE RESEARCH

Although this research has finished, during the process we find several obstacles such as:

1. Limited amount of official data regarding the number of healthcare business initiation in Indonesia during the pandemic and before the Covid-19 pandemic.
2. Some interview respondents were unable to explain in detail the process of online search activities during the initiation of a healthcare business.
3. The quality of some raw data is not good so statistical adjustments need to be made to ensure the quality of research data.

The Next Plan contains the researcher planning to complete the research considering the current achievements. In case there is a target that has not been reached until the research is done, in this section, the researcher allows to explain their plan to complete their target

NEXT PLAN

The development of this research will continue by adding the latest research variables and trying to develop research in different contexts.

The reference is organized and written based on a number system according to the cited order in the text. **Only references cited in the document should be listed—a minimum of 25 references.**

REFERENCES

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APPENDICES:

- a. Document indicating the mandatory research outputs and their achievement status
- b. Document indicating the additional research outputs and the status of their achievements (if any)
- c. Plagiarism test result indicating 25% similarity (for article or book)
- d. *Logbook* (inputted and downloaded from the portal)
- e. Document containing budget accountability called as SPTB that can be inputted and downloaded in the portal
- f. Document showing supervising process (PDP scheme only)
- g. Document showing the cooperation realization with partners for applied research and development research (Riset Terapan and Pengembangan)

APPENDICES 1. RESEARCH ARTICLE

Submitted in International Journal of Public Health Science (IJPHS) – SCOPUS Q4

The screenshot shows the author submission interface for the International Journal of Public Health Science (IJPHS). The page includes a navigation menu, a breadcrumb trail, and a table of active submissions. On the right, there are several utility boxes for user management, citation analysis, special links, and link per issue.

Navigation: HOME ABOUT USER HOME SEARCH CURRENT ARCHIVES ANNOUNCEMENTS

Breadcrumb: Home > User > Author > Active Submissions

Active Submissions

ACTIVE ARCHIVE

ID	MM-DD SUBMIT	SEC	AUTHORS	TITLE	STATUS
24461	01-10	Other	Rini, Hamdi, Rokhmayanti, Fikri,...	THE USE OF DIGITAL FOOTPRINT IN THE INITIATION OPENING OF...	IN REVIEW

1 - 1 of 1 Items

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2022: Mar, Jun, Sep, Dec

The Use of Digital Footprint in The Initiation Opening of Pharmacy Business during COVID-19

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ABSTRACT

The purpose of this study is to demonstrate that the internet search traffic information related to the selected key terms associated with initiating the opening of a pharmacy business well reflects the dynamics of entrepreneurial activity in a country and can be used for predicting entrepreneurial activity at the national level in the healthcare industry.

The theoretical framework is based on social information processing theory. Statistics on behavior related to new business creation from 2016 to 2021 are collected from the Indonesian Health Profile open database. Interviews with recent founders of new pharmacy businesses are used to identify phrases of online search interest. Google Trends is used to get internet search query statistics on the identified terms.

The findings show that web search data related to the opening of a pharmacy business, the digital footprint of marketing management, and the digital footprint of financial management in the pharmacy industry before the COVID-19 pandemic proved influential in initiating a pharmacy business. Meanwhile, these two factors showed different results during COVID-19, which did not affect to initiation of opening a pharmacy business.

The findings might provide the foundation for a new way of measuring, monitoring, and forecasting pharmacy business activity in a country. They could aid in better addressing pharmacy industry-related policy challenges.

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1. INTRODUCTION

The COVID-19 pandemic has significantly affected various business sectors and industries. Notwithstanding, COVID-19 has exerted a significant adverse influence on a majority of economic sectors. Nevertheless, it has also positively impacted some sectors, such as healthcare, when considered an opportunity. During the global pandemic of COVID-19, the health industry has had a significant growth rate of 11.56% (Central Bureau of Statistics, 2022). The health business sector ranks highest among the 17 national Gross Domestic Product (GDP) sectors. The COVID-19 pandemic is believed to have substantially influenced the expansion of Indonesia's healthcare industry, particularly in sectors such as pharmacies, drugstores, and medical equipment stores. Amidst a period of deceleration in various business sectors, the healthcare industry has witnessed a notable surge in establishing new enterprises, indicating an emerging pattern. The healthcare activities sector experienced significant growth during the COVID-19 pandemic due to the rising demand for pharmaceuticals and medical equipment to prevent and treat COVID-19.

In the digital era characterized by the proliferation of digital activities during the pandemic, online searches have emerged as a viable means of acquiring information for the business. One of the platforms that is widely used for digital information acquisition is Google. Google has maintained a significant market share in internet search engines for an extended duration, resulting in the widespread usage of "Googling" or "to Google" in

daily language. In Asia, internet searches are predominantly conducted, accounting for 90% of the total searches (Statista, 2023). Moreover, in the specific context of Indonesia, Google dominates the market share with a significant 97.33% (Statista, 2023). According to estimates for 2023, the volume of search queries conducted on Google is projected to reach about 100,000 per second. This translates to around 8.5 billion daily searches and an estimated 2 trillion daily searches worldwide. In the contemporary era of real-time recording of web searches and transactions, a substantial amount of data is generated, encompassing valuable information about the healthcare industry. While Google Trends has been extensively utilized in commercial research, its applicability in the healthcare industry has yet to be substantially adopted. In this study, our objective is to contribute to the field of healthcare business research by presenting and validating the reliability of Internet search query data as an innovative and valuable source of high-quality data for the analysis and evaluation of healthcare business trends and patterns for forecasting a nation's healthcare industry performance.

This study builds upon the increasing evidence suggesting that aggregated data from Internet search queries can effectively predict human interests and intentions (Shim et al., 2001; To et al., 2007; Choi & Varian, 2009; Wu & Brynjolfsson, 2009; Goel et al., 2010; Stephenson-Davidowitz, 2014). Specifically, we investigate the association between individuals' online search activities about crucial business activities and establishing healthcare businesses in Indonesia. This study responds to the following research inquiry: Is there a correlation between the digital footprint generated by Internet searches and the major activities involved in establishing a new healthcare business, hence serving as a reliable indication of actual healthcare business operations at the national level? Thus, this study contributes to the growing literature on applying Google Trends data in the healthcare field, which has not been studied before, and confirms their usability for decision-making purposes in the healthcare business.

This study contributes to the existing scientific evidence regarding the value of big data for healthcare business research by demonstrating the significance of the internet's digital footprint as a source of free and easily accessible big data. Specifically, the study focuses on analyzing and predicting the growth of the healthcare business sector in Indonesia. The findings of this study align with previous research conducted by Schwab & Zhang (2019), von Bloh et al. (2020), Lévesque et al. (2020), Obschonka & Audretsch (2020), and Prüfer & Prüfer (2020), which also highlight the value of big data in various contexts. Moreover, this study opens opportunities for developing the healthcare business sector in Indonesia. This study aims to analyze and contrast the entrepreneurial intentions in the healthcare industry, specifically focusing on establishing pharmacies, drugstores, and medical equipment stores. These business entities represent the fundamental and simple forms of enterprises within the health sector. The time series data of establishing new healthcare businesses in pharmacies and drugstores between 2019 and 2021 has been obtained from the report published by the Ministry of Health of Indonesia. The identification of internet search data queries is accomplished by interviews with the most recent founders of newly established enterprises operating within the health sector industry. The statistics of the identified phrases were acquired through a study of Google Trends (GT) search query data. The remainder of this study is organized as follows. Section two reviews the literature and develops a hypothesized framework; section three outlines the methods and materials applied in this study; section four presents the analysis and findings of this research; section five presents the conclusion, theoretical and practical implications, and recommendations for further research.

2. THEORETICAL BACKGROUND

This study uses a social information processing theory as a starting point for understanding internet search traffic information related to selected key terms associated with creating new businesses in the pharmacy industry, which may influence entrepreneurial behavior. According to the social information processing theory, individuals develop cognitions and attitudes through social information—knowledge about the thoughts and behaviors of others (Salancik & Pfeffer, 1978). This research has two basic premises, both rooted in the pertinent literature. First, the number of newly opened businesses in a country or a region is a valid proxy of entrepreneurial activity in that country or region (Mathews & Spencer, 2008; Mohan et al., 2012; Zarkogianni et al., 2017; Valter et al., 2019). Second, statistics on web search activities are a good predictor of human interests, intentions, and actions (Corti & Fuster, 2011; Nwankwo & Ogbalu, 2020). Building on them, we argue that search traffic information related to selected key terms related to establishing new businesses will reasonably reflect the dynamics of entrepreneurial activity in the healthcare industry and, thus, can be the basis of a new methodology for measuring, analyzing, and predicting entrepreneurial activity in a country.

With the increase in interest in supporting and developing entrepreneurship, several approaches for measuring entrepreneurial activity have been created over the last 25 years (Mohan et al., 2012; Zarkogianni et al., 2017; Valter et al., 2019). The first systematic effort in this field can be attributed to the Global Entrepreneurship Monitor (GEM) Consortium, which launched its annual surveys in 1998 (Yahya & Supriyanto, 2016). It has since continuously improved and expanded its coverage. After that, starting from different conceptual and operational bases and datasets, researchers developed different indexes for measuring entrepreneurial activity across national contexts (Mohan et al., 2012; Zarkogianni et al., 2017). In their review (Supriyanto, 2015) identify, based on how data is collected, two primary approaches used: (1) surveys of randomly selected individuals and (2) records from (national) business registries.

Dvoulity (2018) demonstrated that regardless of what measure of entrepreneurship is used at the country level, the determinants indicate the same direction of impact, suggesting that the macroeconomic, institutional, and economic environment influence most business entities in the economy in a similar direction. Finally, although the existing research does not agree on the single best indicator, the number of newly opened businesses turned out to be the most robust and consistent proxy of entrepreneurial activity in a country (Mohan et al., 2012; Zarkogianni et al., 2017; Valter et al., 2019).

A range of studies have explored the role of financial management in the pharmacy sector. Dave (2012) and Okwo et al. (2012) found that certain financial management variables, such as total assets to sales ratio and debtors' turnover ratio, are critical determinants of profitability in the pharmaceutical industry. Bautista (2020) focused on small-scale pharmacies in the Philippines, highlighting the importance of effective cash and accounts payable management for these businesses. Collectively, these studies underscore the critical role of financial management in the success of pharmacy businesses.

Several studies underscore the role of marketing in the success of a new pharmacy business. Ignjatovic & Cogoljević (2019) emphasize the potential of digital marketing, mainly through online pharmacies and mobile applications, in improving economic results and consumer engagement. Piven et al. (2022) further support this, demonstrating the effectiveness of marketing developments in enhancing service quality, customer loyalty, and socio-economic impact. These findings collectively highlight the importance of modern marketing strategies, particularly those that leverage digital platforms, in establishing and growing a new pharmacy business.

B. Statistics of Web Search as A Source of Big Data

Google Trends (GT) is the most frequently used big data tool aggregating academic studies' web search queries. It entered academic research in 2009. First, Google scientists Choi & Varian (2009) demonstrated how GT data could be applied to predicting automotive, retail, home sales, and tourism flows. Then, Ginsberg et al. (2009) used GT data to develop a model for predicting influenza epidemics. These results opened the door for widely using GT data across scientific fields. As of mid-2022, more than 4,500 journal publications in the English language indexed in Scopus contain the phrase "Google Trends" in their title, abstract, or keywords.

In business and management research, GT data is used in various ways. For instance, Jun et al. (2014) showed that web search queries can be extremely useful in analyzing the adoption of new technologies and have higher explanatory power than measures used in the past, such as the GDP growth rate, patent applications, and news coverage. The authors also concluded that search traffic information could be fruitfully utilized to assess consumers' attitudes towards a novel product and identify hidden ones.

C. Web Search, People's Intentions, and Behavior

Search engines (e.g., Google) are modern confession rooms, places where people, being alone and covered by anonymity, are unusually open about their interests (Bian et al., 2016). Thus, data based on aggregated statistics of search queries suffer much less from social censoring and virtue signaling and present honest signals (Breton et al., 2006) of actual interest and intentions not easily elicited by surveys or other means (Salancik & Pfeffer, 1978). This makes the digital footprint of our Internet searches powerful in revealing underlying social and economic trends. Statistics of web searches on specific terms related to opening and registering new businesses represent the population's intentions to start and become entrepreneurs; thus, they will reflect new businesses' real-life registration dynamics in a given country. This expectation is well supported by the theory of planned behavior (Azhar & Afdian, 2018) and the entrepreneurial event model (Pagliaro et al., 2022), two dominant psychological theories used in predicting and explaining the emergence of new ventures (Liu & Wu, 2017). The pandemic has changed the landscape of medical services (Marimekala & Lamb, 2022). The healthcare sector has been in demand since the COVID-19 rise (Biju et al., 2021), especially in pharmaceutical products.

The two most critical aspects of the newly established business in the pharmacy industry are marketing and finance (Heizer et al., 2017). Based on the initial survey, in the pharmacy industry marketing aspect involves service promotion, competitor analysis, co-marketing, and product availability (Mirzaei et al.,

2018; Heinsohn & Flessa, 2013; Khan & Nasim, 2016; Garankina et al., 2019). The financial aspect covers financial management skills and financial software (De Silva, 2013; Gouveia et al., 1988). Based on several theories and literature above, we hypothesize:

H1a: Digital footprint of marketing management in the pharmacy industry influence on the initiation of opening a pharmacy business before the COVID-19 pandemic

H1b: Digital footprint of financial management in the pharmacy industry influence on the initiation of opening a pharmacy business before the COVID-19 pandemic

H2a: Digital footprint of marketing management in the pharmacy industry influence on the initiation of opening a pharmacy business during the COVID-19 pandemic

H2b: Digital footprint of financial management in the pharmacy industry influence on the initiation of opening a pharmacy business during the COVID-19 pandemic

3. METHOD

For the type and number of new businesses as a study sample, we derived data on types of new healthcare businesses from these reports every year. We collected it as a time series from 2016 to 2021 for Indonesia and all regions. To understand what founders of new businesses are searching for when they consult the Internet for help, we interviewed several owners of recently established healthcare businesses. Respondents were specifically asked:

- what were the exact terms they searched on the Internet while going through the process of opening a new business;
- what form of new business they established;
- whether they registered their business themselves or with someone's help and
- to describe their experience of new business registration.

Search Query Statistics Data

Google Trends provides the relative search volume for a keyword normalized on a range from 100 based on a keyword's proportion to all search queries in a specific period in a specific territory (Google, n.d.). It means there is a point equal to 100 in the period, and other points are related. The zero value indicates the lowest relative search interest for the given keyword, whereas 100 indicates the date with the maximum search interest within the selected time range. Google Trends allows the selection of a specific territory for analysis – a whole country or its cities and regions. As a result of the data collection process, we obtained the following time series: search query statistics on all the terms identified from Google Trends and the monthly number of newly established pharmacy businesses from 2016 to 2021. This is the time for conditions before COVID-19 (2016-2019) and when COVID-19 occurred (2020-2021).

B. Statistical Analysis

In this research, we use secondary data. The iterative approach of PLS-SEM uses limited information, making the method more robust and not constrained by the parameter requirements of PLS-SEM (Hair et al., 2014). Thus, PLS-SEM is preferred for exploratory research with secondary data because it offers the flexibility needed for the interplay between theory and data (Nitzl et al., 2016). Or, as Wold (1982) notes, "Soft modeling is primarily designed for research contexts that are simultaneously data-rich and theory-skeletal." Furthermore, the increasing popularity of secondary data analysis (e.g., using data from company databases, social media, customer tracking, national statistical bureaus, or publicly available survey data) shifts the research focus from strictly confirmatory to predictive and causal-predictive modeling. Such research settings fit the prediction-oriented PLS-SEM approach like hand in glove.

PLS-SEM regression is a method for dealing with multicollinearity that can be obtained through simple or multiple regression by drawing conclusions from significance tests. The significance test aims to select predictor variables for developing PLS-SEM components and determine the number of PLS-SEM components formed. PLS-SEM aims to form a component that can capture information from predictor variables to predict response variables (Bastien et al., 2004).

There are some main reasons for using PLS-SEM, including its ability to accommodate models of relatively complex ones that are difficult to solve using the linear regression analysis method. Second, PLS-SEM can evaluate relationships between variables that have many connections. Third, internal errors of each observation are not ignored but instead analyzed to ensure the PLS-SEM is sufficiently appropriate in analyzing these observations. The fourth step involves smooth modification of the model to increase its statistical significance, making it more potent for analytical purposes. The fifth element, PLS-SEM, can analyze relationships systematically simultaneously (Hair et al., 2018).

4. RESULT AND DISCUSSION

Table 1. Result of Regression Test

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))	P Value
Before COVID-19					
Digital Footprint of Marketing Management → Initiation of Opening A Pharmacy Business	3.507	3.234	1.017	3.448	0.001
Digital Footprint of Financial Management → Initiation of Opening A Pharmacy Business	18.556	18.130	2.094	8.861	0.000
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Digital Footprint of Financial Management → Initiation of Opening A Pharmacy Business	-0.728	-0.419	5.145	0.141	0.444

DISCUSSION

The results of hypothesis 1a testing show that the digital footprint of marketing management in the pharmacy industry affected the initiation of opening a pharmacy business before the COVID-19 pandemic. The existence of electronic commerce has encouraged many companies to have digital marketing by taking advantage of all the opportunities provided by the Internet. Literature shows that in the emerging digital economy, adopting e-commerce platforms substantially affects transaction costs, delivery speed, customer satisfaction, and subsequent company performance, thus improving the digital footprint of marketing management (Zhou et al., 2022). A digital footprint of marketing management can increase the company's competitive advantage by accelerating access to information, product offerings, and information about competitors and encouraging the existence of Pharmacy Business. Several studies have attested to the strong impact of digital marketing on an industry's performance (Daud et al., 2022; Setkute & Dibb, 2022). According to Tolstoy et al. (2022), a company makes the most of its current resources to build competencies that improve its ability to compete and create value for its operations. According to Chatterjee & Kar (2020), digital marketing companies can increase sales and improve performance.

Based on hypothesis 1b testing results, the digital footprint of financial management in the pharmacy industry affected the initiation of opening a pharmacy business before the COVID-19 pandemic. Empirical research shows that e-commerce adoption, such as digital footprint, can positively affect a company's financial performance (Teo & Pian, 2003; Wu et al., 2003). Teo & Pian (2003) observed that e-commerce adoption increases competitive advantage, characterized by differentiation, cost reduction, innovation, development, and alliance formation. The COVID-19 pandemic's effects on the economy have shown how crucial financial management procedures are for businesses of every kind (Alkaabi & Nobanee, 2019). Organizations can plan and allocate resources for both present and future operations through financial management strategies like budgeting and forecasting.

The results of hypothesis 2a and 2b testing show that the digital footprint of marketing and financial management in the pharmacy industry does not affect the initiation of opening a pharmacy business during the COVID-19 pandemic. Since people's behavior is known to change during a pandemic, leading to anxiety about medicine shortages, pharmaceutical products' marketing, and financial management were not becoming an issue of the pharmacy business. The main problem during the pandemic was not the marketing and financial issues but the supply of medicines stock. An increase in the demand for medicines could have caused the initial increase in medicine shortages, thus an increment in the volume of orders as pharmacies tried to stock up due to the increased demand and emptying of security stocks (Romano et al., 2021).

5. CONCLUSION

The first result of this study shows that before COVID-19, there was a correlation between the Digital footprint of marketing management in the pharmaceutical industry and the initiation of opening a pharmacy business before the COVID-19 pandemic. The second result shows a correlation between the digital footprint of financial management in the pharmaceutical industry and the initiation of opening a pharmacy business before the COVID-19 pandemic. Thus, the first and second hypotheses are accepted. Next, the third and fourth results show the opposite direction, where the digital footprint of marketing management and the digital footprint of financial management in the initiation of opening a pharmacy business do not affect the initiation of opening a pharmacy business during the COVID-19 pandemic. Therefore, the third and fourth hypotheses are said to be rejected.

H1a: Digital footprint of marketing management in the pharmacy industry correlated to the initiation of opening a pharmacy business before the COVID-19 pandemic

H1b: Digital footprint of financial management in the pharmacy industry correlated to the initiation of opening a pharmacy business before the COVID-19 pandemic

H2a: Digital footprint of marketing management in the pharmaceutical industry does not correlate with the initiation of opening a pharmacy business during the COVID-19 pandemic

H2b: Digital footprint of financial management in the pharmacy industry does not correlate with the initiation of opening a pharmacy business during the COVID-19 pandemic

This research significantly contributes to the existing literature and gives practical implications for the pharmacy industry. Firstly, it contributes to the ongoing scholarly discourse about the efficacy and relevance of big data and internet traces in business research. This study aims to assess the reliability and use of Internet search statistics to evaluate the viability of pharmacy business ventures in a specific country or region. By examining the potential applications of Internet search statistics, this research seeks to demonstrate their value in measuring the feasibility of pharmacy business initiation. This study contributes to the expanding body of work utilizing Google Trends data across various domains (Jun et al., 2014). It substantiates the practicality of such data for informing business decision-making processes.

Nevertheless, it is essential to acknowledge that this study does have several limitations. Initially, the dataset utilized in this study encompasses information sourced solely from Indonesia. Therefore, it is imperative to use caution when generalizing the findings for implementation in different geographical contexts. Furthermore, it is essential to note that the period of this study is confined to the years 2016 to 2021. This limitation is primarily attributed to the limited availability of official data from the Ministry of Health reports.

ACKNOWLEDGEMENTS

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APPENDICES 2. MoU between UAD and UMAM

MEMORANDUM OF UNDERSTANDING

Between



UNIVERSITI MUHAMMADIYAH MALAYSIA (UMAM)

And



UNIVERSITAS AHMAD DAHLAN (UAD)

**MEMORANDUM OF UNDERSTANDING
BETWEEN
UNIVERSITI MUHAMMADIYAH MALAYSIA (UMAM)
AND
UNIVERSITAS AHMAD DAHLAN (UAD)**

THIS MEMORANDUM OF UNDERSTANDING is made is made on Monday, August 22nd, 2022.

Between

UNIVERSITI MUHAMMADIYAH MALAYSIA an institution of higher learning established and incorporated under the Universities and University Colleges Act 1971 [Act 30] (hereinafter referred to as "**UMAM**"), and having its registered address at Wisma MAIPs, Kompleks Desa Siswa, Uniciti Alam, Sungai Chuchuh 02100 Padang Besar, Perlis, MALAYSIA of the one part,

And

UNIVERSITAS AHMAD DAHLAN is an institution of higher education under Central Board of Muhammadiyah, its main address at Jl. Kapas no 9 Semaki, Umbulharjo, Yogyakarta, 55166 Indonesia (hereinafter referred to as "**UAD**"), of the other part.

UMAM and **UAD** shall hereinafter be referred to singularly as "the Party" and jointly as "the Parties".

WHEREAS:

- A. **UMAM** is a private university in Malaysia with a strategic direction to be the regional leader in academic and research excellence in social sciences and humanities. In taking various initiatives to enhance its academic and research capabilities, **UMAM** has established partnerships with various organizations. **UMAM** is located in the district Padang Besar, Perlis of Malaysia.
- B. **UAD** is an established university in Indonesia, focusing on health sciences, economic, social sciences and humanities as well as science and technology, which strives to strengthen its research and educational abilities and has entered into various collaborative arrangements with others to enhance its academic links and cooperation. **UAD** is located in the central Java, Indonesia.
- C. Upon the execution of this Memorandum of Understanding, the Parties will proceed to conduct necessary due diligence, commence negotiations in good faith towards the execution of this Memorandum of Understanding and use their best endeavor to ensure the success of this Memorandum of Understanding.

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NOW THE PARTIES HEREBY AGREE AS FOLLOWS:

**ARTICLE 1
SCOPE OF COOPERATION**

- 1.1 The Parties, subject to the terms of this Memorandum of Understanding and the laws, rules and regulations from time to time in force in each Parties' country, will endeavour to cooperate and develop teaching and research cooperation on areas between them, on the basis of equality and mutual benefit and have further agreed upon the following programs attached in **Appendix A** of this Memorandum of Understanding based on principles of equality and reciprocity of mutual benefits.
- 1.2 The Parties agree that the list of activities attached in **Appendix A** under the implementation of this Memorandum of Understanding may be added from time to time with the mutual agreement of the Parties.

**ARTICLE 2
IMPLEMENTATION AND ADMINISTRATIVE COORDINATORS**

- 2.1 The Parties agree to appoint from each Party an overall Administrative Coordinator for the administration of this Memorandum of Understanding. The Coordinators will serve as the contact persons on campus, being responsible of implementing the decisions and ensuring that necessary approvals are in place, and overseeing the productive stay of the visiting students/experts and arrangements associated with their visits.
- 2.2 In order to enable university-driven planning and implementation of the activities/programs mentioned in **Appendix A**, regular meetings, mutual visits and research workshops between both Parties shall be encouraged.

**ARTICLE 3
FINANCIAL ARRANGEMENT**

- 3.1 This Memorandum of Understanding will not give rise to any financial obligation by one Party to the other and each Party will bear its own cost and expenses in relation to the academic activities under this Memorandum of Understanding.
- 3.2 Notwithstanding the provision of sub-article 3.1, the Parties agree to discuss and further negotiate before implementing any specific academic program(s) and/or research project(s) on specific budget.
- 3.3 Any intellectual property developed on collaborative research conducted under this Memorandum of Understanding or any contracts pertaining to fee for services rendered will be addressed on a case-by-case basis under separate agreements.

MoU between UMAM and UAD

2

**ARTICLE 6
REVISION, MODIFICATION AND AMENDMENT**

- 6.1 Either Party may request in writing a revision, modification or amendment of all or any part of this Memorandum of Understanding.
- 6.2 Any revision, modification or amendment agreed to by the Parties shall be reduced into writing and shall form part of this Memorandum of Understanding.
- 6.3 Such revision, modification or amendment shall come into force on such date as may be determined by the Parties by mutual agreement.
- 6.4 Any revision, modification or amendment shall not prejudice the rights and obligations arising from or based on this Memorandum of Understanding before or up to the date of such revision, modification or amendment.

**ARTICLE 7
SUSPENSION**

Each Party reserves the right for reasons of national security, national interest, public order or public health to suspend temporarily, either in whole or in part, the implementation of this Memorandum of Understanding which suspension shall take effect immediately after written notification has been given to the other Party.

**ARTICLE 8
SETTLEMENT OF DISPUTES**

Any difference or dispute between the Parties concerning the interpretation and/or application of any of the provision of this Memorandum of Understanding shall be settled amicably through mutual consultation, negotiations and/or mediation between the Parties without reference to any third party.

**ARTICLE 9
DURATION AND TERMINATION**

- 9.1 This Memorandum of Understanding shall come into force on the date of signing and shall remain in force for a period of three (3) years subject to review and modification as mutually agreed upon.
- 9.2 Thereafter, if the Parties hereto wish to extend the terms of this Memorandum of Understanding, they shall do so by an express covenant in writing.
- 9.3 Notwithstanding anything in this Article, either Party may terminate this Memorandum of Understanding by notifying the other Party of its intention to terminate this Memorandum of Understanding by a notice in writing, at least three (3) months prior to its termination date. Termination shall be without penalty.

MoU between UMAM and UAD

4

ARTICLE 4
PROTECTION OF INTELLECTUAL PROPERTY RIGHTS

- 4.1 The protection of intellectual property rights shall be enforced in conformity with the national laws, rules and regulations of the Parties and with other international agreements signed by the government or the authorized organization in the Parties' country.
- 4.2 The use of the name, logo and/or official emblem of any of the Parties as the case may be, on any publication, document and/or paper is prohibited without the prior written approval of either Party.
- 4.3 Notwithstanding anything in sub-article 4.1 above, the intellectual property rights in respect of any technological development, products and services development, carried out –
- i. jointly by the Parties, or research results obtained through the joint activity effort of the Parties, shall be jointly owned by the Parties or in accordance with the terms to be mutually agreed upon;
 - ii. solely and separately by **UMAM** or **UAD**, or research results obtained through the sole and separate effort of **UMAM** or **UAD**, as the case may be, shall be solely owned by the Party concerned; and
 - iii. right in intellectual property developed by students in the course of exchanges, collaborative or research activities shall be dealt in accordance with the rules and regulations of the Parties.
- 4.4 The Parties shall acknowledge one another in any form of writing, publication or presentation based on, or derived from, the collaborative research between the Parties.

ARTICLE 5
EFFECT OF MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding serves only as a record of the Parties' intentions and does not constitute or create, and is not intended to constitute or create obligations under domestic or international law and will not give rise to any legal process and will not be deemed to constitute or create any legally binding or enforceable obligations, express or implied.

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- 9.4 Such notice of termination does not affect any individual students who have already commenced or been accepted by either Party.

ARTICLE 10 NOTICES

Any communications under this Memorandum of Understanding will be in writing in the English language and delivered by registered mail to the address or sent to the electronic mail address or facsimile number of **UMAM** or **UAD** as the case may be, shown below or to such other address or electronic mail address or facsimile number as either Party may have notified the sender and shall, unless otherwise provided herein, be deemed to be duly given or made when delivered to the recipient at such address or electronic mail address or facsimile number which is duly acknowledged:

To UMAM: Registrar
Universiti Muhammadiyah Malaysia (UMAM)
Wisma MAIPs, Kompleks Desa Siswa,
Uniciti Alam, Sungai Chuchuh
02100 Padang Besar, Perlis
MALAYSIA

Telephone: +603-90580020
Facsimile : -
E-mail : info@umam.edu.my

To UAD: Office of International Affair UAD
Jl. Kapas no 9 Semaki, Umbulharjo, Yogyakarta, 55166 Indonesia
Telephone: (0274) 563515
Facsimile :-
E-mail : oia@uad.ac.id

ARTICLE 11 RELATIONSHIP OF THE PARTIES

- 11.1 The Parties record that it is not their intention that this Memorandum of Understanding creates any partnership, agency or other relationship between them under which either Party might be deemed to be responsible for the acts or omissions of the other Party and this Memorandum of Understanding should not be construed as to render the Parties liable as partners or as creating any partnership, agency or other similar relationship.
- 11.2 Notwithstanding anything in this Memorandum of Understanding, a Party shall at no time underwrite or guarantee or be in any way directly or indirectly responsible or

deemed to be responsible for all or any of the debts, liabilities or obligations incurred by the other Party from time to time.

**ARTICLE 12
FORCE MAJEURE**

No Party hereto shall be held responsible or liable or be deemed to be in default or in breach of this Memorandum of Understanding for its delay, failure or inability to meet any of its obligations under this Memorandum of Understanding (other than any obligation to pay money, if any) caused by or arising from any cause which is unavoidable or beyond the reasonable control of such party, including war, warlike operations, riot, insurrection, orders of government, strikes, lockouts, public health emergencies, quarantines, disturbances or any act of God or other cause which frustrates the performance of this Memorandum of Understanding.

**ARTICLE 13
GENERAL**

- 13.1 Any provisions of this Memorandum of Understanding which are held to be illegal or otherwise in conflict with any laws, statutes or regulations shall be deemed to be severed from the remainder of the Memorandum of Understanding and the validity of the remaining provisions shall not be affected.
- 13.2 Neither Party must make false or misleading representations or statements.
- 13.3 Neither Party to this Memorandum of Understanding shall assign or purport to assign any right under this Memorandum of Understanding without the prior written approval of the other Party.
- 13.4 The Parties hereby confirm their express agreement that this Memorandum of Understanding and all documents directly or indirectly related thereto be drawn up in English.
- 13.5 Each of the Parties hereto confirms its intention to promote the best interests of the Parties hereto and to consult fully on all matters materially affecting the areas of co-operation. Each of the Parties hereto shall act in good faith towards the other Party in order to promote the success of the contemplated co-operation.

(The remainder of this page is intentionally left blank)

IN WITNESS WHEREOF, the undersigned being duly authorized thereto, have signed this Memorandum of Understanding on the day and year first above written in two (2) original texts.

SIGNED FOR AND ON BEHALF OF
UNIVERSITI MUHAMMADIYAH MALAYSIA:-

ASSOC. PROF. DR. WALUYO ADI SISWANTO
Rector
Universiti Muhammadiyah Malaysia

]
|
]


In the presence of:-

DR. WACHID RIDWAN
Vice Rector (Collaboration, Student Affairs and Alumni)
Universiti Muhammadiyah Malaysia

]
|
]


SIGNED FOR AND ON BEHALF OF
UNIVERSITAS AHMAD DAHLAN:-

DR. MUCHLAS, M.T.
Rector
UNIVERSITAS AHMAD DAHLAN

]
|
]


In the presence of:-

RUSYDI UMAR, S.T., M.T., PH.D.
Vice Rector I
UNIVERSITAS AHMAD DAHLAN

]
|
]


APPENDICES 3. PLAGIARISM RESULT

The Use of Digital Footprint in The Initiation Opening of Pharmacy Business during COVID-19

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ABSTRACT

This research aims to demonstrate that the data from internet searches for the chosen key terms related to starting a pharmacy business accurately reflects the dynamics of entrepreneurship in a country and can be applied to predict entrepreneurship in the healthcare sector at the national level.

The theoretical framework is based on social information processing theory. Statistics on behavior related to new business creation from 2016 to 2021 are collected from the Indonesian Health Profile open database. Interviews with recent founders of new pharmacy businesses are used to identify phrases of online search interest. Google Trends is used to get internet search query statistics on the identified terms.

The findings show that web search data related to the opening of a pharmacy business, the digital footprint of marketing management, and the digital footprint of financial management in the pharmacy industry before the COVID-19 pandemic proved influential in initiating a pharmacy business. Meanwhile, these two factors showed different results during COVID-19, which did not affect to initiation of opening a pharmacy business.

The findings might provide the foundation for a new way of measuring, monitoring, and forecasting pharmacy business activity in a country. They could aid in better addressing pharmacy industry-related policy challenges.

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1. INTRODUCTION

The COVID-19 pandemic has significantly affected various business sectors and industries. Notwithstanding, COVID-19 has exerted a significant adverse influence on a majority of economic sectors. Nevertheless, it has also positively impacted some sectors, such as healthcare, when considered an opportunity. During the global pandemic of COVID-19, the health industry has had a significant growth rate of 11.56% (Central Bureau of Statistics, 2022). The health business sector ranks highest among the 17 national Gross Domestic Product (GDP) sectors. The COVID-19 pandemic is believed to have substantially influenced the expansion of Indonesia's healthcare industry, particularly in sectors such as pharmacies, drugstores, and medical equipment stores. Amidst a period of deceleration in various business sectors, the healthcare industry has witnessed a notable surge in establishing new enterprises, indicating an emerging pattern. The healthcare activities sector experienced significant growth during the COVID-19 pandemic due to the rising demand for pharmaceuticals and medical equipment to prevent and treat COVID-19.

In the digital era characterized by the proliferation of digital activities during the pandemic, online searches have emerged as a viable means of acquiring information for the business. One of the platforms that is widely used for digital information acquisition is Google. Google has maintained a significant market share in internet search engines for an extended duration, resulting in the widespread usage of "Googling" or "to Google" in daily language. In Asia, internet searches are predominantly conducted, accounting for 90% of the total searches (Statista, 2023). Moreover, in the specific context of Indonesia, Google dominates the market share with a significant 97.33% (Statista, 2023). According to estimates for 2023, the volume of search queries conducted on Google is projected to reach about 100,000 per second. This translates to around 8.5 billion daily searches and an estimated 2 trillion daily searches worldwide. In the contemporary era of real-time recording of web searches and transactions, a substantial amount of data is generated, encompassing valuable information about the healthcare industry. While Google Trends (GT) has been extensively utilized in commercial research, its applicability in the healthcare industry has yet to be substantially adopted. In this study, our objective is to contribute to the field of healthcare business research by presenting and validating the reliability of Internet search query data as an innovative and valuable source of high-quality data for the analysis and evaluation of healthcare business trends and patterns for forecasting a nation's healthcare industry performance.

This study builds upon the increasing evidence suggesting that aggregated data from Internet search queries can effectively predict human interests and intentions (Shim et al., 2001; To et al., 2007; Choi & Varian, 2009; Wu & Brynjolfsson, 2009; Goel et al., 2010; Stephenson-Davidowitz, 2014). Specifically, we investigate the association between individuals' online search activities about crucial business activities and establishing healthcare businesses in Indonesia. This study responds to the following research inquiry: Is there a correlation between the digital footprint generated by Internet searches and the major activities involved in establishing a new healthcare business, hence serving as a reliable indication of actual healthcare business operations at the national level? Thus, this study contributes to the growing literature on applying GT data in the healthcare field, which has not been studied before, and confirms their usability for decision-making purposes in the healthcare business.

This study contributes to the existing scientific evidence regarding the value of big data for healthcare business research by demonstrating the significance of the internet's digital footprint as a source of free and easily accessible big data. Specifically, the study focuses on analyzing and predicting the growth of the healthcare business sector in Indonesia. The findings of this study align with previous research conducted by Schwab & Zhang (2019), von Bloh et al. (2020), Lévesque et al. (2020), Obschonka & Audretsch (2020), and Prüfer & Prüfer (2020), which also highlight the value of big data in various contexts. Moreover, this study opens opportunities for developing the healthcare business sector in Indonesia. This study aims to analyze and contrast the entrepreneurial intentions in the healthcare industry, specifically focusing on establishing pharmacies, drugstores, and medical equipment stores. These business entities represent the fundamental and simple forms of enterprises within the health sector. The time series data of establishing new healthcare businesses in pharmacies and drugstores between 2019 and 2021 has been obtained from the report published by the Ministry of Health of Indonesia. The identification of internet search data queries is accomplished by interviews with the most recent founders of newly established enterprises operating within the health sector industry. The statistics of the identified phrases were acquired through a study of GT search query data. The remainder of this study is organized as follows. Section two reviews the literature and develops a hypothesized framework; section three outlines the methods and materials applied in this study; section four presents the analysis and findings of this research; section five presents the conclusion, theoretical and practical implications, and recommendations for further research.

2. THEORETICAL BACKGROUND

In order to understand internet search traffic data connected to specific key phrases associated with starting new enterprises in the pharmacy industry, which may impact entrepreneurial behavior, this study first applies a social information processing theory. The social information processing hypothesis holds that people learn about the attitudes and ideas of others through social information or knowledge about their thoughts and behaviors (Salancik & Pfeffer, 1978). This investigation has two fundamental tenets, both based on relevant literature. In the beginning, a reliable indicator of entrepreneurial activity in a nation or region is the quantity of recently established companies in that nation or territory (Mathews & Spencer, 2008; Mohan et al., 2012; Zarkogianni et al., 2017; Valter et al., 2019). Second, online search data on activities may be utilized for predicting people's intents, interests, and behaviors (Corti & Fuster, 2011; Nwankwo & Ogbalu, 2020). Expanding upon them, we claim that search traffic data connected with specific key terms related to starting new businesses will accurately reflect the dynamics of entrepreneurial

activity in the healthcare sector and, as such, can serve as a basis for an original approach to quantifying, evaluating, and forecasting entrepreneurial activity in a nation.

A. Measuring Entrepreneurial Activity in A Country

Over the past 25 years, a variety of methods for quantifying entrepreneurial activity have been developed in response to the growing interest in encouraging and supporting entrepreneurship (Mohan et al., 2012; Zarkogianni et al., 2017; Valter et al., 2019). The Global Entrepreneurship Monitor (GEM) Consortium began its yearly surveys in 1998, marking the beginning of an organized approach in this subject (Yahya & Supriyanto, 2016). Since that time, it has increased its coverage and made constant improvements. Researchers then created numerous indicators for assessing entrepreneurial activity across national settings, beginning with various conceptual and operational bases and datasets (Mohan et al., 2012; Zarkogianni et al., 2017). Supriyanto (2015) identifies two main methods of data collection in their review: (1) surveys of persons chosen at random and (2) information from (national) company registers.

Dvoulety (2018) showed that, irrespective of the country-level entrepreneurship measure employed, the determinants point in the same direction of influence, implying that the macroeconomic, institutional, and economic environments have a similar effect on the majority of business entities in the economy. In the end, despite disagreements among researchers over the optimal measurement, the quantity of recently established enterprises proved to be the most reliable and consistent measure of entrepreneurial activity inside a nation (Mohan et al., 2012; Zarkogianni et al., 2017; Valter et al., 2019).

A range of studies have explored the role of financial management in the pharmacy sector. Dave (2012) and Okwo et al. (2012) found that certain financial management variables, such as total assets to sales ratio and debtors' turnover ratio, are critical determinants of profitability in the pharmaceutical industry. Bautista (2020) focused on small-scale pharmacies in the Philippines, highlighting the importance of effective cash and accounts payable management for these businesses. Collectively, these studies underscore the critical role of financial management in the success of pharmacy businesses.

Several studies underscore the role of marketing in the success of a new pharmacy business. Ignjatovic & Cogoljević (2019) emphasize the potential of digital marketing, mainly through online pharmacies and mobile applications, in improving economic results and consumer engagement. Piven et al. (2022) further support this, demonstrating the effectiveness of marketing developments in enhancing service quality, customer loyalty, and socio-economic impact. These findings collectively highlight the importance of modern marketing strategies, particularly those that leverage digital platforms, in establishing and growing a new pharmacy business.

B. Statistics of Web Search as A Source of Big Data

The most popular big data tool for gathering online search queries from academic research is Google Trends (GT). In 2009, it was investigated in educational institutions. Firstly, Google scientists Choi & Varian (2009) showed how GT data may be used to predict purchases of cars, homes, retail stores, and tourism. Then, Ginsberg et al. (2009) created a model for influenza pandemic prediction using GT data. These findings allowed GT data to be widely used in many scientific domains. As of mid-2022, the term GT appears in the titles, abstracts, or keywords of over 4,500 English-language journal papers that are indexed in Scopus. GT data is used in business and management studies in a variety of ways. For example, Jun et al. (2014) shown that online search queries had a better explanatory power than previously used indicators, such as the gross domestic product growth rate, patent applications, and press coverage, and may be very helpful in studying the adoption of new technology. The scientists also came to the conclusion that search traffic data might be effectively used to reveal hidden biases and gauge customer sentiments toward innovative products.

C. Web Search, People's Intentions, and Behavior

According to Bian et al. (2016), search engines like Google may be compared to contemporary confession rooms, where people can be especially open about their interests while feeling anonymous and alone. Because of this, data derived from aggregated statistics of search queries are far less affected by social control and moral signaling, and they provide actual indications of actual interest and intentions that are difficult to gather through surveys or other methods (Breton et al., 2006; Salancik & Pfeffer, 1978). Due to this, our Internet searches generate digital footprints that may be used to reveal underlying social and economic patterns. The intention of the populace to open and establish new businesses is reflected in online search statistics for phrases relevant to this topic; as a result, these statistics will accurately represent the registration dynamics of new enterprises in a certain nation. This expectation is well supported by the theory of planned behavior (Azhar & Afidian, 2018) and the

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entrepreneurial event model (Pagliaro et al., 2022), two dominant psychological theories used in predicting and explaining the emergence of new ventures (Liu & Wu, 2017). The pandemic has changed the landscape of medical services (Marimekala & Lamb, 2022). The healthcare sector has been in demand since the COVID-19 rise (Biju et al., 2021), especially in pharmaceutical products.

The two most critical aspects of the newly established business in the pharmacy industry are marketing and finance (Heizer et al., 2017). Based on the initial survey, in the pharmacy industry marketing aspect involves service promotion, competitor analysis, co-marketing, and product availability (Mirzaei et al., 2018; Heinsohn & Flessa, 2013; Khan & Nasim, 2016; Garankina et al., 2019). The financial aspect covers financial management skills and financial software (De Silva, 2013; Gouveia et al., 1988). Based on several theories and literature above, we hypothesize:

H1a: Digital footprint of marketing management in the pharmacy industry influence on the initiation of opening a pharmacy business before the COVID-19 pandemic

H1b: Digital footprint of financial management in the pharmacy industry influence on the initiation of opening a pharmacy business before the COVID-19 pandemic

H2a: Digital footprint of marketing management in the pharmacy industry influence on the initiation of opening a pharmacy business during the COVID-19 pandemic

H2b: Digital footprint of financial management in the pharmacy industry influence on the initiation of opening a pharmacy business during the COVID-19 pandemic

3. METHOD

We collected information on new healthcare business kinds from these annual reports to identify the type and quantity of new enterprises for the research sample. We gathered it as a time series for Indonesia and all areas from 2016 to 2021. We discussed with a number of recently founded healthcare business entrepreneur ¹ to better understand what new business founders look for online when seeking assistance. Specifically, respondents were asked:

- what were the exact terms they searched on the Internet while going through the process of opening a new business;

² that form of new business they established;

- whether they registered their business themselves or with someone's help and

³ to describe their experience of new business registration.

A. Search Query Statistics Data ¹

Based on a term ¹ proportion of all search queries in a given period inside a specified area, Google Trends (GT) offers ¹ the relative search volume for a keyword normalized on a range from 100 (Google, n.d.). It indicates that there is a point in the period equal to 100 and that additional points are related. The date with the ¹ highest search interest within the chosen period is indicated by a value of 100, while zero represents the lowest relative search interest for the provided term. GT allows the selection of a certain area for research, such as a whole nation or only its cities and regions. Following the procedure of gathering data, we got the following time series: statistics on search queries for all phrases found on GT as well as the month ¹⁶ count of newly opened pharmacies between 2016 and 2021. This corresponds to the period from 2016 to 2019 (pre-COVID-19) and from 2020 to 2021 (COVID-19).

B. Statistical Analysis

In this study, secondary data are used. PLS-SEM's iterative methodology uses a small amount of data, which includes method resilience and frees it of PLS-SEM's parameter limitations (Hair et al., 2014). Because PLS-SEM provides the flexibility required for the interaction between theory ² and data, it is therefore recommended for exploratory research, including secondary data. (Nitzl et al., 2016). Or, as Wold (1982) notes, "Soft modeling is primarily designed for research contexts that are simultaneously data-rich and theory-skeletal." Additionally, the growing prevalence ² of secondary data analysis (e.g., employing information from social media, company databases, customer tracking, national statistical bureaus, or publicly accessible survey data) causes a shift in the focus of research from purely confirmatory to predictive and causal-predictive modeling. The prediction-oriented PLS-SEM technique works perfectly in these kinds of study contexts.

Using results from significance tests, PLS-SEM regression is a technique for handling multicollinearity that can be found in simple or multiple regression. The purpose of the significance test is to identify predictor factors for the formation of PLS-SEM components and to ascertain how many

PLS-SEM components were produced. PLS-SEM aims to create a part that can gather data from predictor factors to forecast response variables (Bastien et al., 2004).

There are some main reasons for using PLS-SEM, including its ability to accommodate models of relatively complex ones that are difficult to solve using the linear regression analysis method. Second, PLS-SEM can evaluate relationships between variables that have many connections. Third, internal errors of each observation are not ignored but instead analyzed to ensure the PLS-SEM is sufficiently appropriate in analyzing these observations. The fourth step involves smooth modification of the model to increase its statistical significance, making it more potent for analytical purposes. The fifth element, PLS-SEM, can analyze relationships systematically simultaneously (Hair et al., 2018).

4. RESULT AND DISCUSSION

Table 1 below describes the results of regression calculations between digital footprint marketing and financial management on initiatives to open a pharmaceutical business before and during the COVID-19 pandemic.

Table 1. Result of Regression Test

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Value
Before COVID-19					
Digital Footprint of Marketing Management → Initiation of Opening A Pharmacy Business	3.507	3.234	1.017	3.448	0.001
Digital Footprint of Financial Management → Initiation of Opening A Pharmacy Business	18.556	18.130	2.094	8.861	0.000
During COVID-19					
Digital Footprint of Marketing Management → Initiation of Opening A Pharmacy Business	-0.437	-0.080	5.181	0.084	0.466
Digital Footprint of Financial	-0.728	-0.419	5.145	0.141	0.444

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Management → Initiation of Opening A Pharmacy Business						
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DISCUSSION

The results of hypothesis 1a testing show that the digital footprint of marketing management in the pharmacy industry affected the initiation of opening a pharmacy business before the COVID-19 pandemic. The existence of electronic commerce has encouraged many companies to have digital marketing by taking advantage of all the opportunities provided by the Internet. Literature shows that in the emerging digital economy, adopting e-commerce platforms substantially affects transaction costs, delivery speed, customer satisfaction, and subsequent company performance, thus improving the digital footprint of marketing management (Zhou et al., 2022). A digital footprint of marketing management can increase the company's competitive advantage by accelerating access to information, product offerings, and information about competitors and encouraging the existence of Pharmacy Business. Several studies have attested to the strong impact of digital marketing on an industry's performance (Daud et al., 2022; Setkute & Dibb, 2022). According to Tolstoy et al. (2022), a company makes the most of its current resources to build competencies that improve its ability to compete and create value for its operations. According to Chatterjee & Kar (2020), digital marketing companies can increase sales and improve performance.

Based on hypothesis 1b testing results, the digital footprint of financial management in the pharmacy industry affected the initiation of opening a pharmacy business before the COVID-19 pandemic. Empirical research shows that e-commerce adoption, such as digital footprint, can positively affect a company's financial performance (Teo & Pian, 2003; Wu et al., 2003). Teo & Pian (2003) observed that e-commerce adoption increases competitive advantage, characterized by differentiation, cost reduction, innovation, development, and alliance formation. The COVID-19 pandemic's effects on the economy have shown how crucial financial management procedures are for businesses of every kind (Alkaabi & Nobanee, 2019). Organizations can plan and allocate resources for both present and future operations through financial management strategies like budgeting and forecasting.

The results of hypothesis 2a and 2b testing show that the digital footprint of marketing and financial management in the pharmacy industry does not affect the initiation of opening a pharmacy business during the COVID-19 pandemic. Since people's behavior is known to change during a pandemic, leading to anxiety about medicine shortages, pharmaceutical products' marketing, and financial management were not becoming an issue of the pharmacy business. The main problem during the pandemic was not the marketing and financial issues but the supply of medicines stock. An increase in the demand for medicines could have caused the initial increase in medicine shortages, thus an increment in the volume of orders as pharmacies tried to stock up due to the increased demand and emptying of security stocks (Romano et al., 2021).

5. CONCLUSION

The first result of this study shows that before COVID-19, there was a correlation between the Digital footprint of marketing management in the pharmaceutical industry and the initiation of opening a pharmacy business before the COVID-19 pandemic. The second result shows a correlation between the digital footprint of financial management in the pharmaceutical industry and the initiation of opening a pharmacy business before the COVID-19 pandemic. Thus, the first and second hypotheses are accepted. Next, the third and fourth results show the opposite direction, where the digital footprint of marketing management and the digital footprint of financial management in the initiation of opening a pharmacy business do not affect the initiation of opening a pharmacy business during the COVID-19 pandemic. Therefore, the third and fourth hypotheses are said to be rejected.

H1a: Digital footprint of marketing management in the pharmacy industry correlated to the initiation of opening a pharmacy business before the COVID-19 pandemic

H1b: Digital footprint of financial management in the pharmacy industry correlated to the initiation of opening a pharmacy business before the COVID-19 pandemic

H2a: Digital footprint of marketing management in the pharmaceutical industry does not correlate with the initiation of opening a pharmacy business during the COVID-19 pandemic

H2b: Digital footprint of financial management in the pharmacy industry does not correlate with the initiation of opening a pharmacy business during the COVID-19 pandemic

This research significantly contributes to the existing literature and gives practical implications for the pharmacy industry. Firstly, it contributes to the ongoing scholarly discourse about the efficacy and relevance of big data and internet traces in business research. This study aims to assess the reliability and use of Internet search statistics to evaluate the viability of pharmacy business ventures in a specific country or region. By examining the potential applications of Internet search statistics, this research seeks to demonstrate their value in measuring the feasibility of pharmacy business initiation. This study contributes to the expanding body of work utilizing Google Trends data across various domains (Jun et al., 2014). It substantiates the practicality of such data for informing business decision-making processes.

Nevertheless, it is essential to acknowledge that this study does have several limitations. Initially, the dataset utilized in this study encompasses information sourced solely from Indonesia. Therefore, it is imperative to use caution when generalizing the findings for implementation in different geographical contexts. Furthermore, it is essential to note that the period of this study is confined to the years 2016 to 2021. This limitation is primarily attributed to the limited availability of official data from the Ministry of Health reports.

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1	11 Januari 2024 - 08:10:00	Artikel masuk dalam scope jurnal			 
2	11 Januari 2024 - 12:10:00	Proses revisi artikel			 
3	05 Desember 2023 - 15:05:00	Submit draft artikel ke OJS Jurnal Internasional			 
4	30 Oktober 2023 - 15:05:00	Finalisasi artikel			 
5	27 Oktober 2023 - 10:00:00	Drafting artikel			 
6	26 Oktober 2023 - 09:00:00	Drafting Artikel			 
7	17 Oktober 2023 - 10:00:00	Drafting Artikel			 
8	05 Oktober 2023 - 10:00:00	Drafting Artikel			 
9	29 September 2023 - 10:00:00	Melanjutkan olah data			 
10	12 September 2023 - 13:00:00	Diskusi dan olah data			 
11	05 September 2023 - 10:00:00	Diskusi hasil interview			 
12	31 Agustus 2023 - 10:00:00	Interview Narasumber	Tiga Narasumber		 
13	24 Agustus 2023 - 14:00:00	Interview Narasumber	Tiga Narasumber		 
14	03 Agustus 2023 - 13:30:00	Diskusi persiapan interview narasumber			 
15	21 Juli 2023 - 14:00:00	Diskusi perdana	Mencari data jumlah industri alat kesehatan di Indonesia tahun 2016-2021		 

APPENDICES 5. SPTB



**PERGURUAN TINGGI MUHAMMADIYAH
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SURAT PERNYATAAN TANGGUNG JAWAB BELANJA

Yang bertanda tangan di bawah ini :

Nama : Poppy Laksita Rini, S.E., M.Sc.
Judul Penelitian : An Examination of Entrepreneur's Digital Footprint and New Business
Creation in Healthcare Industry during Pandemic COVID-19
Nomor Kontrak : 07/RIA/LPPM-UAD/VI/2023
Dana penelitian : Rp 35.000.000,00

Dengan ini menyatakan bahwa biaya kegiatan penelitian tersebut di atas digunakan untuk pos-pos pembelajaran sebagai berikut.

No	Uraian Pengeluaran	Jumlah (Rp)
1.	Bahan (ATK, material/bahan penelitian, Dll.)	3.000.000
2.	Pengumpulan Data (Penggandaan angket, FGD, transport responden, dll.)	11.000.000
3.	Analisis Data (Biaya uji lab., biaya analisis data, dll.)	6.000.000
4.	Pelaporan dan Luaran Penelitian (Penyusunan laporan dan luaran, biaya translate ke bahasa asing, biaya submit, biaya pendaftaran HKI, dll.)	10.000.000
5.	Lain-lain (HR tim peneliti dan pembantu lapangan)	5.000.000
	Jumlah Pengeluaran (Rp)	35.000.000
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Yogyakarta, 8 Februari 2024

Poppy Laksita Rini, S.E., M.Sc.