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DARK DATA CAPITALISATION BEHAVIOUR OF MUSLIM MICRO ENTERPRISES IN THE CONTEXT OF ISSUES, CHALLENGES, AND BEST PRACTICES IN MALAYSIA

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Abstract: *Data management in business is crucial regardless of the business size, including Muslim micro enterprises. Properly managed data becomes an asset to the business. In contrast, data that is stored but not actively managed or utilised is classified as hidden data, or unused data, or dark data. This study aims to explore the issues, challenges, and best practices related to dark data management among Muslim micro enterprises. It also investigates the process of transforming unused data (dark data) into meaningful information that supports decision-making, enhances operations, or creates new business opportunities, referred to as dark data capitalisation. The study adopts an interview approach to examine the practices of Muslim micro enterprises in managing dark data. The findings of this study identify the key issues, challenges, current practices and best practices associated with dark data capitalisation among Muslim micro enterprises. The findings significantly important to the micro enterprise for the growth. Future research may lead to the development of guidelines or a management model for dark data capitalisation, helping Muslim micro enterprises generate added value for their operations, strategies, and growth.*

Keywords: *Data management, dark data, data capitalisation, dark data capitalisation, Muslim micro enterprise*

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Introduction

Data capital is one way to consider data as asset that will be used to increased result, gain profit or generate new income (Ramadhan, 2022). Data role becomes important, as Biddulph (2020) described data as a weapon that should be fully utilized. If organisation did not use their data right as competitive weapon, then it may operate less efficient, lost marketing part, and lost millions in results stream and new profit (Biddulph, 2020). Data usage like this related with new term which is data modal (Ramadhan, 2022).

In data capital terminology, data is a model that equivalent with other model such as financial capital and human capital. Because of it regarded as capital, then like other capital, data capital "can be used for producing goods or services, and it can give long term value to company" (Oracle & MIT, 2016). Data can also consider as raw material to create something that useful, for example to develop digital services (Oracle & MIT, 2016). This new capital form very important for continuity and progress in business in digital era (Jain, 2020).

While "Dark data" is information that isn't readily accessible or understood, making it difficult to evaluate or measure in any manner (Lugmayr et al., 2017). "Dark data" means unstructured or unorganised data that is frequently overlooked and not properly stored, leading to its potential loss or underutilization. Therefore, it may be inferred that this resource possesses an imperceptible nature and tends to be disregarded, while it holds potential for novel applications (Heidorn, 2008). Dark data refers to two types of data. Firstly, system activity that produces hidden data and secondly, data that possesses actual value but is not recognised as such (Bhatia & Alojail, 2022).

According to the Economic Census: Profile of SMEs in 2011, micro enterprises make up 77 percent of all SMEs in Malaysia, while small and medium enterprises make up 20 percent and 3 percent, respectively. Micro firms have achieved a dominant position in nearly all sectors of Malaysia. For instance, most small and medium-sized enterprises (SMEs) in the services industry are small companies, accounting for more than 79.0 percent of all SMEs in this sector. In both the manufacturing and agriculture sectors, micro firms are the most prevalent, making up over half of the sector with 57.1% and 56.3% respectively. The construction sector is subsequently characterised by micro firms, which account for around 45 percent according to the Economic Census: Profile of SMEs, 2011.

Frequently, organisations tend to overlook potentially useful data due to constraints in time and money, which hinder their ability to adequately prepare information for utilisation. Alternatively, individuals may possess little comprehension of the complete range of capabilities offered by Splunk (Splunk, 2019).

According to Mao et al. (2022), there is a significant accumulation of business data within different government departments, although the utilisation of data resources and administrative service skills is limited. The existing body of literature indicates that it is essential for organisations to demonstrate a commitment to handling enterprise data ethically and in accordance with stakeholder values to enable ethical data practises. However, there is a lack of comprehensive guidance available on the practical implementation of such practises (McNicol et al., 2023). In contrast, enterprise data is typically found within apps or internal repositories and may require integration with other corporate data to analyse a specific function or business process.

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The amount of dark data will keep going up as that data is found and saved. Business information universe, most of it is made up of "dark data," and many companies don't even know how much of it they have. According to research in the field, over 90% of an organization's data may not be used, which is a huge, missed chance. When the Industry fail to value or know the value of dark data, they will lose opportunity from this data. Veritas (2024) says that 52% of a company's data is "dark," which means that it has no worth. Organizations need to understand that any data left unexplored is an opportunity lost and a potential security risk (Dimitrov et al., 2018).

The sensible utilisation of dark data is impeded by insufficient processes, resources, and technology. Dark data, which refers to unutilized information, is often overlooked by business and IT managers. However, it possesses significant potential as an asset and therefore requires a more advanced methodology for organisations to effectively gather, handle, and analyse this data.

Malaysian micro firms are thought to have limited understanding of dark data management, even though they store dark data. Dark data has been emphasised by numerous studies for its substantial influence on business intelligence, competitive advantages, and risk mitigation (Rao, 2021; Garg, 2019).

However, there are various issues and challenges that need to be addressed to ensure the effective capitalisation of dark data among Muslim micro enterprises in Malaysia. This research explores the key issues, challenges, and best practices faced by these enterprises, based on interview with Muslim entrepreneurs. In addition, sharing of best practices can help enhance the strategic use and management of dark data. The structure of this article begins with a related works on the concept of dark data, its potential value, and the current practices among micro enterprises in Malaysia. It then discusses the methodological approach, followed by the presentation of results and findings, a discussion of key insights, and finally, the conclusion and recommendations for future research directions.

Related Works

Data Capitalisation Behaviour

In a study conducted by McKinsey in 2016, it was emphasised that data plays a crucial role in providing organisations with a competitive edge. However, the study revealed that companies were only able to harness less than 30% of the full potential value of data. According to McAfee (2012), organisations that employ data-driven decision- making processes experience a 5% increase in productivity and a 6% increase in profitability compared to their competitors. In the present era, data is being generated at a rapid pace, leading to a challenge for organisations to analyse it in real-time using conventional technologies. Regardless, they store the data with the intention of leveraging it in the future but fail to seize the chance to extract its current potential worth (Corallo et al., 2023).

According to Trajanov et al. (2018) over the past few years, they have undertaken multiple IoT connected initiatives that involved the use of various types of dark data. Three of their projects will be elaborated upon, with each project focusing on distinct aspects of utilising dark data. The first project is a Data Lake platform for Smart City designed to facilitate the storage and analysis of various data kinds, such as those generated by industrial and personal IoT devices. The second project focuses on Power Grid Analytics and demonstrates the integration of data

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with external datasets. The final project demonstrates the generation of metadata in the form of Ontologies and the utilisation of analysis of dark data contained in semi-structured text files to automate the process of System on Chip synthesis.

Micro Enterprise Landscape in Malaysia

Micro enterprises is an establishment is classified as having fewer than 5 employees or a sales turnover of less than RM 250,000 across many sectors, including agriculture, mining & quarrying, construction, services, and manufacturing. The Bumiputra ethnic group has a significant presence in the enterprises of Malaysia, as stated in the ETP Annual Report of 2011. The significance of these enterprises lies in their capacity to foster social transformation, generate employment and income, harness the skills of entrepreneurs, empower marginalised populations, enhance the standard of living in communities, facilitate sustainable livelihoods, and eradicate extreme poverty conditions (Ladzani & Van Vuuren, 2002; Mogale, 2005; Tustin, 2001; ADB, 1997, as cited in Thaker, Asmy, & Omar, 2013). Despite the lack of knowledge surrounding dark data and the limited evidence of its publication, primarily from large corporations, there is a substantial gap in understanding this subject (Rao, 2021; Garg, 2019). Furthermore, there remains a lack of scholarly focus on Muslim micro enterprises, particularly in examining their unique challenges, data practices, and contributions within the Malaysian context. Therefore, this research aims to fill the gap by addressing these overlooked aspects and contributing to a more comprehensive understanding of dark data capitalisation among Muslim micro enterprises.

Conceptualising Dark Data Capitalisation

"Dark data" described as the data that organizations gather, handle, and save during their routine operations, but typically neglect to utilize for additional objectives such as analytics, commercial partnerships, and direct monetization (Gartner, 2022). According to Al Kez et al., (2022), dark data refers to data that is unexplored, hidden, or not fully utilized by enterprises due to its limited potential for generating value. Meanwhile, according to Bhatia & Alojail (2022), dark data refers to the data that is produced via an organization's everyday activities and the different procedures required to input data. This data remains unused and inactive in repositories, concealed in systems and servers, and is often underutilized or forgotten.

Dark data, which originates from transactional systems, operational technologies, other pre-existing infrastructure & other pre-existing assets within the organisation (Saarikko, Westergren, & Blomquist, 2017; Gimpel & Alter, 2021). Dark data, encompassing a substantial volume of unstructured and underutilised data such as text, tables, photos, and other forms of information that are maintained solely for compliance-related objectives (Gimpel et al., 2020). In addition, unutilized data for additional objectives such as analytics, commercial partnerships, or direct financial gain (Moumeni et al., 2021).

The most significant factor contributing to the underutilization of dark data is its unstructured nature, which poses challenges for organisations in terms of retrieval, processing, and analysis (Bhatia and Alojail, 2022). Sonawane (2023) says that two things are especially important: dark data doesn't have the right governance and quality control methods in place. According to Sonawane (2023), despite its potential, many organizations face challenges in effectively harnessing dark data. Investigating the reasons behind abandoning this data sheds light on issues concerning data governance, technological limitations, organizational hurdles, and privacy concerns.

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Issues in Dark Data

Mismatched data standards that create different datasets are one of the biggest problems with getting to dark data (Gimpel & Alter, 2021). A study by IBM says that more than 80% of all data is "dark" and not organised. By 2020, that number will have grown to 93%. Most of this kind of data won't be used again after it's created, so it loses its associated information. This turns a lot of data into "dark data," which makes it harder to see how data fits with requirements in real time (Liu et al., 2019; Zhou et al., 2020).

Moumeni et al. (2021) say that the largest problem with dark data is not just keeping it, but also figuring out what it's worth, if anything. Many pieces of "dark data" stay hidden because companies don't know what they contain. Spread out areas of the data. Concurrently, companies have a lot of "dark data" that comes from operating technology, transactional systems, and other "things" that the company already has in place. It is not known how much "dark data" there is, but there is proof that a lot of ecological data is still not stored in permanent places and could be lost (Palmer et al. 2007, Heidorn 2011).

First, large amount of data without labels due to the analysis efficiency of dark data lags far behind its storage efficiency. This is what prevents the disclosure of the relationship between data and requirements. According to Liu, et al. (2019), when owners owing to the image dark data lack labels and associations consequences to the no idea how to apply these data.

This lack of usage trackability can lead to the situation where all data and information is stored and labelled as “it might be useful in the future”, which adds to the dark data store. Among the factors that add to the amount of dark data is when all data and information is stored and labelled as "it may be useful in the future".

Challenges and Best Practices in Dark Data

Unused data and not observed data found more in 100,000 records data from 95% of companies (Moumeni et al., 2021). Dark data that is not used and devalued is generated due to edge infrastructures, fog and cloud. The resulting big data pipeline is typically unknown to modern manufacturing industries (for example, sanitary ceramics manufacturing). However, business domain experts know only the abstract work that their organization performs.

These industries employ advanced technologies, such as smart robotic arms, sensors, and so on. It also ensuring high production precision in manufacturing parts such as ceramic-based sanitary items. However, they do not use the dark data collected within the production line. For example, environment parameters like temperature, humidity, and so on for flexible real-time operation and trouble-free manufacturing.

Dark data are not carefully indexed or stored, making them an invisible resource that can be put to new uses so long as the data are not lost (Heidorn, 2008). Companies tend to lose many opportunities from operation and strategic because people in all levels of organization not know the potential value dark data IoT. They did not realize that how much useful this data produce in current activities.

Some relationships, such as those between asset utilization and profitability, are very clear. However, the relationships among dark data can be obscure. In these cases, business leaders lack clear models of how those data insights can be turned into profitable action and rely on IoT experts to describe the potential of dark data. In addition, many useful relationships among

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data are neither easily observed nor accurately hypothesized before analysing the data. Data are dark and remain untouched consequences substantial opportunities lie within the grasp of many companies.

Methodology

Interviews were the type of data that was used in this study. Since the data used for the research came from the business owners' own practices and experiences with dark data capitalization. An interview guide is a document that gives researchers the knowledge and best practices they need to do interviews that go well. The process of making such a guide can help researchers narrow their thoughts and organise their questions. We always bring a new copy of the guide with us to the interview so that we can quickly cross off topics or questions as they are talked about (Bird, 2016). Researchers use semi-structured interviews to learn more about how small business owners use and handle dark data. In this study, open-ended questions will help researchers get people's ideas and thoughts, which will give them much deeper, more complete, and often subjective data. When people answer all of the questions in an open-ended interview, it helps the interviewer reach their original goal. The full explanations can lead researchers to new ideas and chances they hadn't thought of before.

In this study, five microentrepreneurs were chosen as respondents of the study to share their experiences in managing business. The first respondent is an entrepreneur in the food sector, managing a business with two full-time employees and one part-time worker. The enterprise operates in a large urban area and is owned by a man in his late 30s. The second respondent is involved in the agricultural sector with a small-scale operation employing two workers. The business is managed by a man in his late 30s and focuses on supplying wholesalers and chicken traders. The third respondent runs a business in the graphic design services sector, including printing-related activities, with two full-time employees. The entrepreneur is a woman in her mid-40s, and her market covers both physical sales and online platforms. The fourth respondent engages in printing and stationery services with the assistance of one contract worker. The business is operated by a husband-and-wife team from a small shop in a semi-urban area, serving customers through both physical sales and online channels. The fifth respondent is an entrepreneur in the retail sector, specifically homemade bakery products, operating entirely as an individual without employees. She is a woman in her early 40s, offering products through physical sales and online platforms to customers beyond the local community.

Results and Findings

The analysis of data from interviews among Muslim micro enterprises revealed several critical issues, challenges, current practices and best practices in managing business data and information. The findings highlight gaps in record-keeping, limited adoption of digital tools, and inadequate awareness of systematic data management among owners. To provide a clearer understanding, the results are organised into three main categories: Issues, Challenges, and Practices as shown in Table 1.

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Table 1: Issues, Challenges, Current Practices and Best Practices in Muslim Micro Enterprises

Respondent	Issues	Challenges	Current Practices	Best Practices
Respondent A (Food sector)	No data backup	Data will be lost if kept only on a laptop	Save the data on the laptop only	Cloud storage & automatic backup
Respondent B (Agriculture)	Records not managed from the beginning, make business struggles to grow	Lack of knowledge in record management	Using a digital system, but inconsistently	Train staff in SOP compliance and adopt a cloud-based system
Respondent C (Service)	Paper records can be lost or misplaced	Manual recording take more time	Record receipts in the ledger	Digitalize receipt with scanning app
Respondent D (Service)	Not track additional costs	Too complicated to record expense details for each customer	Small expenses were not recorded	Use accounting app (eg: Wave/Excel template)
Respondent E (Retail, Homemade Products)	Without records, we can't track our business's money flow	Owner has time constraint when busy	Only recorded when there was time	Delegate record-keeping to staff and simple SOP

Issues

Based on the findings, Respondent A facing main issue which is absence of a backup system. Much information be kept in laptop own by owner without other storage alternative. This situation creates high risk if that device damage or missing. Additionally, this data only recorded in raw form document without any structure that make it difficult to achieve or analyse again. This situation cause data that accumulated not backup and finally become dark data that not capitalize at all for improvement. Respondent B show issue related with record management that unorganized from prior of business establishment. Record never manages following the date or transaction category. As a result, when business growing, they struggling to track cost flow and past sales. Failed to record systematically cause many data neglected in book or receipt, then not used for making an improvement plan. Main issue for Respondent C depends fully to record in physical form. All sales transaction, booking and payment receipt keep in physical receipt form. This cause high risk for missing, damage or mixed of record. As a result, data that should be analyse for operation improvement has been trapped in manual form and difficult changing into strategic information.

For Respondent D, issue that addressed which is failed to record additional cost related with every customer. Even though main cost recorded, expenses that small or separate expenses such as side cost services still neglected. Absence of detail record finally bring to inaccuracy in real profit count and make data that accumulated not complete. The biggest issue that facing by Respondent E is absence of periodic record because they lost in tracking business cash flow. Owner only takes notes when have free time. As a result, data that accumulates not reflect the true state of the business and many important information not recorded at all.

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Challenges

Main challenge face by Respondent A is possibility missing data if only depend to one storage medium. Besides that, owner don't have technical knowledge about way to provide backup system, make this process looks complex and delayed. Respondent B facing with challenges lack knowledge in record management in start of business. He doesn't know technique or best format to manage data so that can be utilize again. As a result, even data accumulated from time to time, it cannot change to useful analysis. Main challenges facing by Respondent C is record by manual method takes time. Process take note and manage physically make owner left recording task especially at busy times. Therefore, effort to digitalize data still has not been made a priority.

Respondent D state that process record expenses following every customer is too complicated and take too many times. He sees that process not practical and not directly contribute to daily operation, then detail recording often left out. Respondent E facing obvious time constraint because directly involved in production and sales. She doesn't hire staff to specifically arrange record for daily operation. Therefore, she doesn't have specific time provided to record daily data and this activity only done when there is time.

Current Practices

At this time, all business information by Respondent A were kept in the owner's laptop. This system makes it easier for him to access information accurately, but that data may not backup in any other medium. In fact, no clear structure fail that used to separate transaction types, makes searching activities quite hard.

Respondent B use digital system, but just inconsistently. At a certain level, he keys in sales information in computer but then back to manual method when busy. Dependency to daily routine cause usage of digital system unable become part of regular practice. Respondent C record and take note using traditional ledger. Every receipt key in manually in book, but this process not accompanied with any category separation or monthly calculation. All transactions only arranged in chronological order. For Respondent D, only main costs recorded. Any additional expenses not considered because considered small and not having a significant impact. This selective approach causes stored data not reflect real business expenses. Respondent E only record business information if they are leisure time. No specific timetable or periodic plan activities to record or take notes for daily operation. This method makes most of the daily transactions lost track from documentation system.

Best Practices

Best effort that suggested to Respondent A is use of cloud storage platforms and automatic backup data system. In this way, data can be kept safely stored and accessible again when needed even device malfunction.

To increase the consistency, best suggestions to Respondent B is train staff to obey standard operating procedure (SOP), usage of digital system can be implemented more consistently. For Respondent C, it is suggested to use scanning app for receipt digitalization process. This app can allow receipt upload immediately to digital system and reduce missing information.

Respondent D is suggested to use accounting app such as Wave or easy Excel template because this app can record transaction faster. Usage this application can make record management process easier and more efficient without high technical skill. The best suggestion for

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Respondent E is delegate the process of take notes or data recording to staff that involve directly with daily operation and introducing simple Standard Operating Procedure (SOP). This makes it easy to update records continuously without depend fully to owner's free time.

Discussion

In the food sector, respondent A showed dark data behaviour when all business records kept directly in the owner laptop without any backup system or data stored structure. This situation makes data easier to miss if device damage happens. This issue in-line with Ahmad Fuzi Md Ajis et al. (2022) that reported that most of micro enterprises in Malaysia, that introduced concept of Dark Data Lifecycle Management (DDLM), it shows how many SME in Malaysia keep important data but not manage it strategically, cause that data not fully utilized. Lack of skill in technology and awareness about the importance of backup cause dependency fully to the owner's memory. Several efforts that were made but Islam emphasizing trust in management, without backup that trust were interrupted. Literature shows Micro-enterprises in Malaysia facing digital accessibility constraints and lack exposure to technology backup and cloud (Fikri et al., 2024). At this time, data management is a manual that is ad-hoc, data only stored and accessed if needed. This is in line with findings from Bernama (2024), many SME now just started using digital solutions to survive in a changing market, but still not aware of organized data management procedure. To overcome this issue, Respondent A can practice using cloud storage systems with automatic backup suitable with DLM principals that introduce caretaker and data classification to mitigate dark data risk (Ajis et al., 2022).

In the agriculture sector, respondent B establish business in agriculture at the start of his business without systematic record. Purchased data, result, and sales keep in raw data that hinder performance analysis. This finding in-line with Ajis et al. (2022) that show SME don't have systematic data management structure, cause data do not utilize strategically (Leogrande, 2024). Main challenges were lack in data management knowledge. In Muslim micro enterprise context, that may not be exposed to digital technology due to skill limitation that hinder data utilization for future business plan. Record still stored by manual and not systematic, without analysis or metadata in-line with finding from Bernama (2024) stated that digitalization among SME still at startup phase and not included holistic data management. Respondent B is suggested to organized record digitally and suitable with DDLM which is point an "data caretaker" that responsible in data collection, classification and monitor data systematically (Ajis, et al., 2022).

Respondent C depend fully to paper record which is ledger and receipt. This increased risk of missing data and data is difficult to be used for business analysis. Literature state high dependency SME in toward manual method cause data not utilize strategically (SME Asia, 2024). Main limitation was cost and stigma that digital is expensive and for big company only. As a Muslim entrepreneur, they may not confident that digital investment without any understanding about long term benefit. This manual method was still dominant even though there are digital initiative from government. For example, Madani grant that transformation not yet happen fully (BERNAMA, 2024). Respondent C were encouraged to use portable application receipt scanning and keep digital receipt to increased data management as one of small step toward data capitalisation.

Respondent D failed to record small cost for every customer cause data do not show the real margin. This show that "dark data", which in financial data mis looked such as explained by (Ajis et al., 2022; Leogrande, 2024). Data neglected and only become waste without any value. Detail recording routine seen as complex and not practical, especially to Muslim micro that

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manage the business individually. Lack of motivation to record small cost become challenges alone. Only big cost recorded, business owner thinks small cost scale as not important. This in-line with Kardina Kamaruddin (2024), stated that many Malaysian SME not yet imply complete data integration in daily business. Usage of accounting application easier such as Wave and Excel can assist in monitoring daily business and give real m picture of business margin.

Respondent E only record data when have leisure time and many transactions note recorded that make data not consistent. This reflects phenomenon Muslim micro enterprise that give focus to production and sales not administration (Khairul Fitri et al., 2024). Time constraint daily becomes main challenges. In Muslim culture, there are social responsibility and religion toward customer, makes time saving for record were neglected. Recording data not become routine fixed, no structure even though for input daily data even the smallest one. Respondent E can delegate recording activities to staff or family member with simple SOP, so that data updated continuously without burden the owner.

Limitation

This study has several limitations that need to be addressed. First, scope of this study limited to micro enterprise owned by Muslim only, that may not represent whole micro enterprise in Malaysia. By focusing only to one community segment only, this finding may not be generalised to non-Muslim micro enterprise that operate in different context economy and culture. Second, collection data technique depends more on interview and questionnaire methods, that can arise bias perception because respondent may give answer that they think "true" or safe from their view. Third, time constraint and limited resources cause total sample that chosen is quite small, that limit researcher ability to do comparison based on sector, age, business or different geography location. Lastly, this study only focusses on current perspective and does not consider dynamic change that may occur if digitalisation government policy and literacy data program carried out more broadly in the future. Overall, even though this study gives important contribution in understand dark data capitalisation behaviour in Muslim micro enterprise, this limitation takes into consideration when interpret finding and planning for future research.

Future Recommendation

Conduct Field Studies through Interviews or Observations

Future research suggested using an approach mixed method or qualitative with direct involvement with stakeholders in micro companies. This can be done through structure interview, focus group discussion, or direct observation. Involvement with real practitioner will help researcher collect empirical data that is deeper about consciousness level, challenges and behaviour related dark data capitalization. This approach can fill the gap between theory and practical reality.

Develop a Framework for Dark Data Practices

Future research should investigate how micro enterprises in Malaysia can strategically capitalise on dark data to enhance competitiveness, improve performance, and support sustainability efforts. Such studies should explore the specific types of dark data being utilised, the methods of usage, and the resulting impacts on business operations. Additionally, attention should be given to understanding the reasons behind the underutilisation or neglect of certain dark data types. By applying qualitative approaches and examining real-world cases, future work can identify effective practices and uncover behavioural patterns related to dark data

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usage. The insights gained could support the development of a practical framework or actionable strategies aimed at helping micro enterprises leverage dark data more effectively for long-term growth and resilience. For example, future researcher can develop a conceptual framework specifically for Muslim micro-enterprises dark data capitalisation, take into consideration unique factor-factor such as Shariah-compliance, work Islamic culture, technology literacy level and simple operation structure.

Expand the Scope of Sectors and Regions within Malaysia

Because of this study only synthesis finding from general source, future research suggested to examine this phenomenon in various sector and various state in Malaysia. Micro enterprise in city maybe has digital ability and data requirements that different compared in rural or suburban areas. Besides that, focus to certain sector such as agriculture, retail, or services can disclose use or unique obstacle related to dark data. Research comparison between region can help structure strategy that more comprehensive and inclusive, consider different infrastructure, socioeconomic and culture.

Conclusion

This finding highlight important role of dark data but always neglected in forming the growth and survival of Micro Muslim enterprise in Malaysia. Finding show that even many Micro enterprise aware important of record keeping, their practices are still inconsistent, many depends to manual method and fragmented data. As a result, big portion of information that have potential assiting in strategic decision making, efficiency improvement and competitive advantage not utilize fully as dark data.

Main issue that identified including absenses of organized backup system, weakness in record management, dependency to physical documentation, negected toward small financial detail but significant, and inconsistency in data recording due to time constraint. This challenges worsened by limited digital literacy level, resource constraints and lack exposure toward best practice in dark data capitalisation. However, this finding also show that improve data practice such as using cloud storage, scanning receipt application and record task delegation to staff can increased dark data management also avoid lost of important information value.

By understanding the issue, challenges and potential of dark data capitalisation, Micro enterprise can start converting data that not used to strategic asset. This is not only inline with goal of digitisation in Malaysia, even provide a way to entreprenuer to increased business sustainability, improve competitive advantage, as well as open new chances for inovation.

Research in the future should give focus to development of framework practical work that customized with unique need of Muslim Micro enterprise. Take into consideration the culture, resources constraint and digital readiness level that different based on sector and region. Expand scope of research to various sample also can give a deeper view and support inclusive strategy formation. Overall, dark data capitalisation that effective can become catalyst to growth and sustanaibility Micro enterprise, as well as empower them to continue to grow in the digital economy.

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