FACTORS AFFECTING KNOWLEDGE SHARING IN THE MALAYSIAN ARMED FORCES

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Abstract:

Technological advancements in the era of globalization require dynamic changes in how organizations manage and share knowledge to stay competitive. Knowledge sharing is crucial for an organization to succeed and achieve its objectives. The Malaysian Armed Forces (MAF) places significant emphasis on knowledge sharing within the defence sector, particularly for success in military operations, which often involve collaboration with other security agencies. However, leveraging knowledge in defence organizations comes with its own set of challenges. Knowledge can drive growth in defence organizations, enabling them to conduct current operations and address both traditional and non-traditional threats. To fulfil this role, the MAF needs an effective mechanism to create, capture, organize, share, and use knowledge. The changing nature of conflict necessitates decentralized, agile, and ad hoc solutions for managing and sharing defence knowledge. With the rapid development of defence technology, it is essential to comprehensively understand the factors that influence knowledge sharing. The study found that key factors influencing the success of MAF operations include technology infrastructure, leadership commitment, reputation, performance efficiency, data accuracy, and improved decision-making. This finding contributes to the theoretical framework for determining the success of MAF operations and further strengthens the MAF's position as a credible, responsive, and dynamic military force.

Keywords:

Knowledge Sharing; Malaysian Armed Forces; Influencing Factors; Military Operation

Introduction

Military defence is a crucial security tool for ensuring a nation's sovereignty. Effective command and control in the military heavily rely on the creation, management, sharing, and the use of knowledge (Singh & Gupta, 2020). Adaptive and creative control in an integrated environment allows for the widespread use of knowledge in modern warfare. Moreover, it is vital to integrate information seamlessly among the branches of the Malaysian Armed Forces (MAF)—the Malaysian Army (MA), the Royal Malaysian Navy (RMN), and the Royal Malaysian Air Force (RMAF). In this context, a dynamic military mission is defined as one that has multiple objectives supporting government assets or agencies and is conducted in a concealed and complex environment. MAF missions are highly sensitive, high-profile, and executed in high-risk settings. The MAF frequently conducts joint operations with foreign armed forces and other security agencies. To execute these joint operations successfully, knowledge must be shared among teams for mutual benefit. The potential for the MAF to leverage knowledge sharing is evident and holds great promise for enhancing organizational competitiveness. This study, therefore, focuses on identifying the factors that influence knowledge sharing and its impact on the success of MAF operations. Effective knowledge sharing within MAF operations is expected to significantly improve planning, efficiency, effectiveness, and decision-making processes.

Modernization of Malaysian Armed Forces Operations

The mission of the Malaysian Armed Forces (MAF) is to protect the country from both internal and external threats. The MAF supports public authorities in managing domestic threats, maintaining public safety, providing assistance during natural disasters, and contributing to national development initiatives. The MAF possesses the resources, assets, and capabilities needed to defend the nation and its strategic interests against external threats, while also supporting public authorities in maintaining domestic security (Smaliukiene & Giedraityte, 2018). Network Centric Operations (NCO) is a crucial component of the MAF, focusing on accurate, real-time knowledge sharing. The NCO provides an integrated command and control capability, linking strategic, operational, and tactical levels, and enabling sensor integration to ensure mission and operational effectiveness. With the rapid development of technology, the nature of battlefield operations is also evolving. According to Wang et al. (2020), recent advances in technology and innovation have increased the amount of information needed to manage armed forces, make decisions, complete missions, and conduct operations. This vast amount of data requires higher levels of digitization, computing power, and network architecture for effective knowledge acquisition, processing, and analysis. In recent years, the concept of network-centric warfare (NCW) has gained significant attention. The emergence of NCW, which connects battlefield assets, has revolutionized conventional military operations (Wang et al., 2020). By sharing knowledge between deployed assets, the military ensures timely exchange of information among personnel, gaining a strategic advantage through the effective projection of force.

Knowledge Sharing Practices at Malaysian Armed Forces

MAF plays a crucial role in safeguarding the sovereignty of the nation through various operations. Among the key operations are Operation Benteng, which focuses on securing national borders, the Integrated Army Operation with the General Operations Force (GOF), and Operation Murni, which is carried out during flood disasters. In late 2022, the country was struck by a tragic landslide at Father's Organic Farm in Batang Kali, Selangor. In response, members of the MAF and GOF collaborated in a search operation around Sungai Kedondong,

Batang Kali, to locate and rescue landslide victims. Throughout this operation, MAF placed great emphasis on knowledge sharing among the rescue agencies involved to ensure the accuracy of the victims' data. This practice allowed commanders to make informed and effective decisions during the rescue mission. Furthermore, the use of advanced technology, supported by a comprehensive technological infrastructure and operated by competent MAF personnel, facilitated seamless integration of knowledge with other agencies. This synergy enabled the rescue team to mobilize swiftly, enhancing the operation's effectiveness. However, the efficiency of MAF personnel in managing operations and utilizing current technology still requires improvement to ensure the smooth execution of missions. Therefore, it is essential to investigate the factors that influence knowledge sharing to further enhance the success of MAF operations.

Literature Review

To achieve success in its operations, MAF requires an effective mechanism to foster knowledge sharing within the organization. Given the complexity of MAF operations, the likelihood of encountering challenges is high, making a robust knowledge-sharing environment essential. Therefore, MAF must establish an efficient system for creating, capturing, organizing, sharing, and utilizing knowledge. As noted by Guo et al. (2022), the evolving nature of conflict necessitates decentralized, agile, and ad hoc solutions for managing military information. Knowledge-sharing practices are crucial for MAF to continuously maintain a competitive edge. Programs such as "Train the Trainer" workshops and seminars are implemented to enhance the skills of MAF members and facilitate ongoing knowledge exchange. Additionally, MAF conducts team-building activities and knowledge-sharing sessions at both the unit and division levels to improve interaction and close the gaps between members. These initiatives help strengthen social relationships within the organization, thereby promoting a more effective knowledge-sharing process.

Factors Affecting Knowledge Sharing to Improve the Success of Military Operations

Knowledge sharing in the military is distinct from practices in the public and corporate sectors, differing not only in theory and practice but also in context, content, and pace, as noted by Guo et al. (2022). In the Malaysian Armed Forces (MAF), effective knowledge sharing is crucial to enhance operational effectiveness and align with the organization's expanding role. Achieving the MAF's objectives, executing strategic plans, and maintaining peak readiness levels all depend significantly on effective knowledge sharing. Additionally, the evolving landscape of modern warfare necessitates adaptive knowledge sharing to provide a strategic advantage in military operations. Empirical research highlights that successful knowledge sharing requires the integration of technology, organizational culture, individual participation, and net benefits, which are critical dimensions for the success of MAF operations. These dimensions are discussed below.

Technology

Technology is a key enabler in creating a conducive environment for knowledge sharing, significantly contributing to operational success. A robust information technology (IT) infrastructure supports the integration, creation, transfer, and storage of organizational knowledge. Moreover, a well-developed IT system enhances communication, facilitates the collection and reuse of knowledge, and helps maintain a competitive advantage (Nasirova et al., 2023). In the era of modern warfare, MAF requires a comprehensive and up-to-date

technology infrastructure to facilitate knowledge sharing both within the organization and with public agencies.

Organization

Organizations must foster a supportive environment to encourage knowledge sharing among employees. Fauzi et al. (2018) emphasize that employees' commitment to sharing knowledge is closely linked to their emotional well-being. When employees feel emotionally supported, knowledge-sharing activities are more likely to be successful. Providing incentives such as promotions or financial rewards can further boost morale and reinforce the value of knowledge sharing (Akram et al., 2020). Organizational leadership should also establish clear policies on knowledge management that align with other quality, health, and safety standards (Nasirova et al., 2023). A well-defined reward system that clearly outlines expectations and the benefits of knowledge sharing can reduce employee turnover and enhance organizational knowledge management practices (Ahmad & Karim, 2019).

Individual

Reputation plays a crucial role in motivating employees to share knowledge within an organization. Employees often share knowledge to build or enhance their reputation or to gain peer recognition. The desire for respect and recognition as an expert encourages employees to contribute valuable knowledge. Effective knowledge management, supported by organizational leadership, can foster communication among employees, build trust, and enhance the willingness to share knowledge (Nguyen, 2021; Akram et al., 2020).

Net Benefit

Military operations often require collaboration with various agencies, making knowledge sharing and information exchange essential for effective cooperation. Such practices ensure that all collaborating entities have access to common information and knowledge, which is critical for making accurate and timely decisions. Through military tactics like C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance), commanders need immediate access to processed knowledge to make informed decisions in complex and critical situations (Akram et al., 2020). The success of joint military operations, often involving national forces, NGOs, and civilian agencies, hinges on effective knowledge sharing and integration. Therefore, both internal and external integration must be strengthened to achieve mission objectives (Wang et al., 2020).

To ensure effective knowledge sharing, it is essential to integrate all four dimensions technology, organization, individual, and benefits along with key factors that contribute to fostering a more conducive environment for knowledge sharing, ultimately enhancing the success of MAF operations. For each of these dimensions, specific factors influencing MAF operational success have been identified. To support this, a range of articles from diverse fields, including defense, manufacturing, education, banking, management, and telecommunications, were reviewed to identify relevant factors that promote knowledge sharing. While these domains have been widely studied in terms of knowledge sharing, the findings require adaptation for military applications. The proposed factors for each dimension are outlined in Table 1.

Table 1: Dimensions And Factors Affecting Knowledge Sharing

Dimension	Factor	Authors	Domain
Technology	Technology Infrastructure	Deng et al., 2023	Management
		Sunmola & Javahernia, 2021	Manufacturing
		Ghabban et al. 2018	Education
		Korsakiene et al. 2019	Defence
		Mat and Alias, 2023	Education
	Compatibility	Akram et al. 2020	Telecommunication
		Mshali & Al-Azawei, 2022	Education
		Nguyen 2021	Management
	Complexity	Edwards 2016	Defence
		Gamblin 2014	Defence
		Duan et al. 2023	Management
		Fauzi & Paiman, 2019)	Industries
Organisation	Leadership	Devi, 2024	Manufacturing
		Cross et al. 2015	Defence
	Commitment	Fauzi et al. 2018	Education
		Gamblin 2014	Defence
		Nguyen T 2021	Management
		Raudeliuniene et al. 2016	Defence
	Reward	Opoku & Duah, 2019	Telecommunication
		Ahmad & Karim, 2019	Education
		Akram et al. 2020	Telecommunication
		Mat & Alias, 2023	Education
Individual	Belief	Gamblin, 2014)	Defence
		Nasirova et al., 2023	Management
		Cross et al., 2015	Defence
		Nguyen, 2021	Management
	Reputation	Ahmad & Karim 2019	Education
		Cross et al., 2015	Defence
		Nguyen, 2021	Management
	Performance	Pathirannahalage et al., 2020	Manufacturing
		Abbas et al. 2019	Banking
		Fauzi & Paiman, 2019	Industries
Net Benefit	Efficiency	Edwards, 2016	Defence
		Ahmad & Karim, 2019	Education
		Abdurachman et al. 2021	Management
	Data accuracy	Ghasemaghaei, 2019.	Management
		Nguyen, 2021	Management

Integration	Edwards, 2016	Defence
	Cross et al. 2015	Defence
	Gamblin, 2014	Defence
	Novais et al., 2023.	Defence
	Abdul Rauf et al., 2020	Education
Decision	Edwards 2016	Defence
Making	Gamblin 2014	Defence
	Ghasemaghaei, 2019	Management
	Cross et al. 2015	Defence
	Abubakar et al. 2019	Management

The suggested factors are crucial in assessing the attitudes and responses of members, which are essential for determining the success of MAF operations. The significance of each factor is outlined below. Under the technology dimension, three key factors have been identified: technology infrastructure, compatibility, and complexity.

i. Technology Infrastructure
   A robust technology infrastructure facilitates the continuous generation and use of knowledge, thereby creating and maintaining a competitive edge. Information and communication technology (ICT) plays a pivotal role in enhancing knowledge sharing among employees within an organization (Ghabban et al., 2018).

ii. Compatibility
   Employees are one of the most valuable assets of any organization. The compatibility of employees with technology in routine tasks significantly improves efficiency and saves time (Akram et al., 2020). MAF gains a strategic advantage when its professionals are proficient in defense technologies, especially in executing military operations.

iii. Complexity
   Complexity refers to the level of difficulty or ease involved in a particular process. It reflects the ability of individuals to learn and adapt to innovative technologies (Duan et al., 2023). MAF requires highly competent professionals who can respond swiftly in an increasingly complex and uncertain environment, utilizing knowledge transfer and information access to their advantage.

In addition to technology factors, there are three organizational factors that impact knowledge sharing and are critical to the success of MAF operations: leadership, commitment, and rewards.

i. Leadership
  Strong leadership is fundamental to building organizational resilience. According to Andleeb et al. (2020), credible leaders can guide an organization toward achieving its vision and mission. In the MAF, effective leadership fosters a culture of knowledge sharing, particularly in high-stakes operations that determine mission success.

ii. Commitment

Having professionals with a high level of commitment is vital for enhancing organizational productivity (Duan et al., 2023). MAF professionals are rigorously trained to remain vigilant and fully committed in all situations, especially when sharing critical knowledge that ensures the success of operations.

iii. Rewards

Providing recognition to employees can significantly motivate and promote better work practices within the organization (Opoku & Duah, 2019). Acknowledging employees who actively share knowledge, through rewards such as salary increments or promotions, boosts morale and encourages continuous knowledge sharing.

Based on the literature, three key factors influencing knowledge sharing under the Individual dimension are particularly relevant for evaluating the success of MAF operations: trust, reputation, and performance.

i. Trust

Organizations with a strong knowledge management culture foster trust among employees, encouraging knowledge sharing (Abdurachman et al., 2021). In the MAF context, members who share knowledge do so with the belief that it will empower and benefit the organization.

ii. Reputation

According to Nguyen (2021), employees often share knowledge to enhance their reputation and gain recognition for their expertise from superiors and peers.

iii. Performance

Consistent knowledge sharing within an organization leads to improved performance. Therefore, fostering knowledge-sharing practices is essential for enhancing both employee performance and organizational success (Abbas et al., 2019).

Additionally, four factors related to knowledge sharing under the Net Benefit dimension are crucial for assessing the success of MAF operations: efficiency, data accuracy, integration, and decision-making.

i. Efficiency

Employee efficiency is critical for maintaining productivity and competitiveness within an organization (Omar & Johar, 2022). With access to the latest defense technologies, MAF personnel should be able to perform tasks more efficiently and effectively.

ii. Data Accuracy

Accurate data is essential for enabling top management to make informed decisions (Nguyen, 2021). In defense operations, commanders on the battlefield rely on precise data to make critical decisions, ensuring operational success and minimizing human error.

iii. Integration

Technological advancements have made system integration among agencies increasingly important. In the MAF, integration is vital for effective communication, allowing current knowledge and information to be shared seamlessly across agencies (Novais et al., 2023).

iv. Better Decision-Making

A culture of knowledge sharing within an organization can support professionals in making better decisions (Abubakar et al., 2019). This leads to improved performance and enhances the organization's competitiveness.

As outlined in the table, reviews indicate that the success of MAF operations is influenced by four key dimensions: individuals, organizations, technology, and net benefit. Each dimension encompasses specific factors that are crucial for understanding the attitudes of military personnel towards the success of these operations. Specifically, the technology dimension includes four factors, the organizational dimension includes three, the individual dimension includes three, and the net benefit dimension includes four. To verify the relevance of these factors in determining MAF operational success, it is essential to examine their relationships within these four dimensions, as suggested by Tavakol & Wetzel (2020). Consequently, thirteen hypotheses have been formulated to test these relationships, as illustrated in Figure 1.
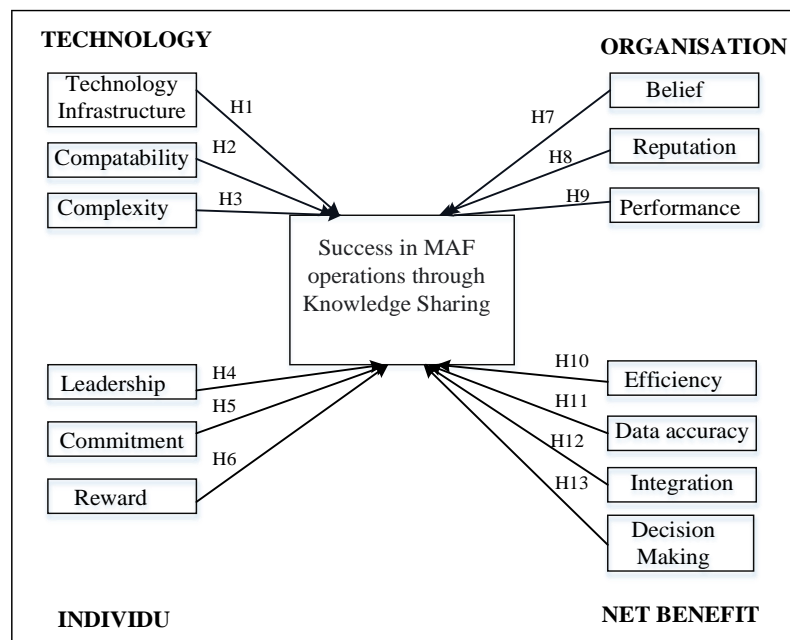
Figure 1: The Dimensions, Factors And The Hypothesis

Hypothesis testing is used to identify the factors that determine the success of MAF operations. This analysis involves thirteen independent variables and one dependent variable, which is the success of MAF operations. The details of the thirteen hypotheses are presented in Table 2 below.

Table 2: The Hypothesis

No.	Description
H1	Technology Infrastructure has a positive effect on the success of MAF operations through knowledge sharing.
H2	Compatibility has a positive effect on the success of MAF operations through knowledge sharing.

H3	Complexity has a positive effect on the success of MAF operations through knowledge sharing.	
H4	Leadership has a positive effect on the success of MAF operations through knowledge sharing.	
H5	Commitment has a positive effect on the success of MAF operations through knowledge sharing.	
H6	Reward has a positive effect on the success of MAF operations through knowledge sharing.	
H7	Trust has a positive effect on the success of MAF operations through knowledge sharing	
H8	Reputation has a positive effect on the success of MAF operations through knowledge sharing	
H9	Performance has a positive effect on the success of MAF operations through knowledge sharing.	
H10	Efficiency has a positive effect on the success of MAF operations through knowledge sharing.	
H11	Data accuracy has a positive effect on the success of MAF operations through knowledge sharing.	
H12	Integration has a positive effect on the success of MAF operations through knowledge sharing.	
H13	Better decision making has a positive effect on the success of MAF operations through knowledge sharing.	

The hypothesis was designed to assess how well the proposed factors determine the success of MAF operations from the perspective of military personnel. This ability is evaluated through data collected from the study's respondents, who are directly involved in MAF operations.

Methodology and Data Collection
The objective of this study is to identify the factors that significantly influence knowledge sharing and its impact on the success of MAF operations. A quantitative approach was employed, utilizing an online questionnaire for data collection. The questionnaire was developed and validated by three experts: two practitioners and one academician. To enhance the study's validity, the target respondents were personnel from three military agencies: MA, RMN, and RMAF. A total of 175 responses were collected, with the distribution of respondents from each agency detailed in Table 3, and the participation rates from each agency presented in Table 4.

Table 3: Respondents From The Agencies

Agency	No.of Respondent	Percentage (%)
Military Army	121	69.1
Royal Malaysian Navy	24	13.7
Royal Malaysian Air Force	30	17.2
Total	175	100

Table 4: Years Of Experience In The Army Operations

Years of Experience	No. of Responden	Percentage (%)
5	109	62.2
3-5	36	20.6
< 2	26	14.9
No experience	4	2.3

Most respondents have five or more years of experience in military operations. However, four respondents have not participated in army operations; instead, they are support officers involved in management and office-based roles. The collected data were analyzed using SmartPLS version 4 with the PLS-SEM technique. According to Magno et al. (2024), this technique was chosen to analyse the data and verify the proposed factors. The data analysis process is illustrated in Figure 2.
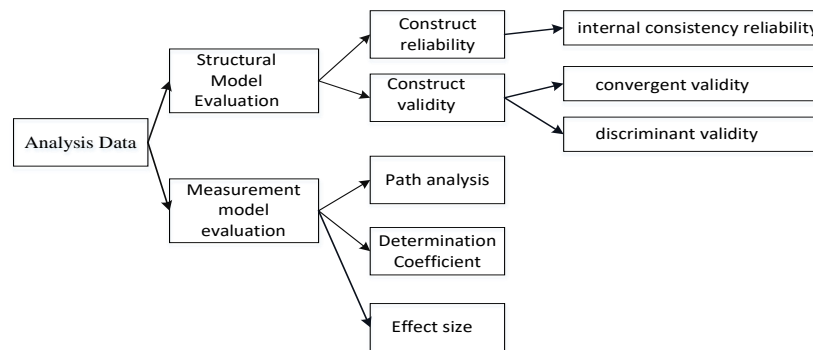
Figure 2: Data Analysis Process

The analysis process systematically examines the data to uncover trends, patterns, and meaningful insights. This method helps in understanding the attitudes of military personnel regarding the success of MAF operations.

Results and Discussions

Data were collected from respondents and evaluated for validity and reliability. The analysis commenced with the assessment of kurtosis and skewness values using SmartPLS software. Kurtosis measures the degree of deviation from a normal distribution, while skewness assesses the asymmetry of the data. The results showed that kurtosis values ranged from -1.081 to 5.866, and skewness values ranged from -0.957 to 0.241. These findings indicate that the data are approximately normally distributed with low variance, suggesting minimal bias in the study. According to Ali (2019), the significance of the hypotheses is determined by comparing the t-value with the p-value. A hypothesis is deemed statistically significant if the p-value is less than 0.05 in a one-tailed test. Figure 1 depicts the relationships between factors influencing knowledge sharing and the success of MAF operations. The results indicate that eight hypotheses are statistically significant, as they meet the p-value criteria, while five hypotheses are not significant. A comprehensive summary of the SEM analysis results is presented in Table 5.

Table 5: The Result Of The Tested Hypothesis

Hypothesis	p-value	Result
H1	0.009	significant
H2	0.286	not significant
H3	0.432	not significant
H4	0.001	significant
H5	0.003	significant
H6	0.390	not significant
H7	0.127	not significant
H8	0.030	significant
H9	0.005	significant
H10	0.001	significant
H11	0.002	significant
H12	0.432	not significant
H13	0.004	significant

The results indicate that factors such as compatibility, complexity, reward, trust, and integration are not significant in determining the success of MAF operations. Military personnel believe that expertise or compatibility with technology is not essential for success during MAF operations. However, having members who are compatible with defence technology can provide an added advantage. Despite the need for competent professionals, this factor is not deemed significant for the success of military operations from the perspective of MAF members. This may be due to the challenges in identifying or recruiting highly competent professionals. Similarly, the reward system provided by the organization does not significantly impact the success of military operations. While a good reward system can enhance employee satisfaction, loyalty, and motivation, it does not significantly affect MAF personnel's view of operational success. This could be attributed to their intrinsic obedience and sense of responsibility, irrespective of rewards. Moreover, MAF personnel believe that trust is not a crucial element for knowledge sharing. They view knowledge sharing as a routine practice among members, regardless of trust. Although a sustainable integration system is vital for involving external agencies in large military operations, MAF personnel do not consider it significant for the success of MAF operations. This suggests that knowledge sharing through the integration system does not substantially contribute to operational success. Conversely, other factors such as technology infrastructure, leadership, commitment, reputation, performance, efficiency, data accuracy, and better decision-making are significant in determining the success of MAF operations. Effective knowledge sharing in these areas is crucial, as it can drive innovation and enhance military effectiveness. Investigating these significant factors and their impact on knowledge sharing can provide insights for future studies and motivate further research into how innovative ideas can be triggered by effective knowledge management.

Conclusion

The sharing of knowledge among military personnel is crucial, and organizations should manage this practice from both individual and technological perspectives. Current and comprehensive knowledge is essential for making swift and accurate decisions, especially in military operations and tactical scenarios. This paper identifies eight key factors that influence

knowledge-sharing practices among MAF personnel, which can enhance the success of ATM operations. These factors include technology infrastructure, leadership, commitment, reputation, performance, efficiency, data accuracy, and improved decision-making. These factors serve as catalysts for effective knowledge sharing and can guide top management in developing policies, strategies, and sustainable knowledge-sharing practices within MAF. By focusing on these elements, organizations can add value to strategic decision-making processes and ensure that MAF operations achieve their stated objectives.

Acknowledgement

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