

# Procurement Efficiency in Military Organization: The Analysis of Critical Success Factors

Halil Paino<sup>1\*</sup>, Amrin Anuwar<sup>2</sup> and Umi Wahidah<sup>3</sup>

<sup>1</sup>Faculty of Accountancy, Universiti Teknologi MARA Shah Alam Selangor Malaysia

<sup>2</sup>Royal Malaysian Air Force, Markas Tentera Udara - Bahagian Material, Malaysian Ministry of Defense, Wisma Pertahanan Kuala Lumpur Malaysia

<sup>3</sup>Fakultas Ekonomi, Universitas Sarjanawiyata Tamansiswa, Yogyakarta, Indonesia

\*Corresponding Author

DOI: <https://dx.doi.org/10.47772/IJRISS.2025.9010309>

Received: 09 January 2025; Accepted: 21 January 2025; Published: 20 February 2025

## ABSTRACT

Procurement efficiency is the ability of an organization to acquire goods and services efficiently which involves optimizing processes, leveraging technology, and harnessing data to achieve procurement goals with minimal waste and maximum value. Malaysia has long sought in improving effectiveness and efficiency of procurement process. Even though continuous efforts have been executed by the government to improve and enhance the procurement process, there are still some weaknesses reported with regards to the government's procurement such as irregular payment, loss/ theft of public money, weaknesses in contract administration, work/supply/services not according to specifications/poor quality, waste and inefficiency in asset management and government revenue collection. Therefore, this study aims to evaluate the critical success factors that influence the procurement efficiency at the military organization. This study was focus on Royal Malaysian Air Force (RMAF) and employed quantitative methods to achieve the objectives of the study. Questionnaires were distributed through the Stratified random sampling method, which uses primer data. The questionnaires were disseminated to the officers and other ranks of the RMAF. Respondents are among all officers and employees who are directly involved in the procurement process. Using quantitative research to collect data allows the researcher to evaluate and understand this data through statistical analysis.

**Keywords:** Procurement Efficiency; Military Organization; Royal Malaysian Air Force RMAF); Critical Success Factor (CSFs)

## INTRODUCTION

The Royal Malaysian Air Force (RMAF) is the third services of the Malaysian Armed Forces. The RMAF was established on 2 June 1958 and since then has played an important role in maintaining Malaysia's air security and sovereignty. The establishment of the RMAF involves various strategic factors, especially related to the need to protect Malaysia's airspace from external threats and attacks. Since its inception, the RMAF has grown rapidly in terms of capabilities and technology to address current challenges and conduct a variety of operations, including military operations, humanitarian aid, and rescue operations.

Among the main roles of the RMAF include maintaining air security, performing maritime and air surveillance, providing air support to the army and navy, as well as participating in international operations as part of joint efforts with partner countries. Since its inception, the RMAF has continued to modernize its equipment and technology and engage in international training and collaboration to enhance its capabilities and professionalism. RMAF's success and excellence is the result of the hard work of its committed and dedicated members.

The RMAF has several strategic air bases throughout the country, including Butterworth Air Base in Penang, Gong Kedak Air Base, Kuching Air Base, Subang Air Base, Labuan Air Base, Sendayan Air Base, Air force

College and others. The base is a place to maintain, test and store various types of aircraft, including fighter jets, transport aircraft, and helicopters. Each Base is recognized as a *Pusat Tanggungjawab* (PTJ) which has the authority to carry out procurement at the respective base level.

A defence force's contribution to the nation's economic prosperity increases with its level of professionalism. In a similar vein, the state of a country's economy can influence how well its armed forces are prepared to defend its interests. In this regard, defence management initiatives, or defence spending, are essential to converting the government's limited resources into military might in line with directives (Bland, 1999).

Defence expenditures are the amount of money a country spends on enhancing its armed forces and defence capabilities. In an unpredictable time, nations must contend with shifting geopolitical issues and security threats. Raising the defence budget might be necessary to preserve national security and protect the country's interests. This frequently leads to a situation known as "strategy resource mismatch." Waldman and Taylor (2008)

A managerial function is planning. It is impossible for businesses to accomplish their goals without proper planning. In a similar vein, strategic planning both short and long term is necessary for defence organizations to carry out their obligations (Davis, 2000). Defence planning, according to Montgomery (2009), is done to make sure that a country's armed forces are ready to respond appropriately in the case of future emergencies or other unforeseen circumstances. These forces will need to be equipped with a broad variety of operational skills, from fighting in full force to conducting operations inside the framework of military operations other than war (MOOTW).

However, budgetary constraints can limit the amount of funding available for defence purposes. Governments must carefully balance their defence spending with other priorities such as healthcare, education, infrastructure, and social welfare. This requires strategic planning, prioritization, and efficient resource allocation. Overall, defence spending in an era of uncertainty and budgetary constraints is a complex issue that requires careful consideration of national security needs, budget limitations, and economic implications. Gray (2008)

Budget resources for defence policy and force modernization programs are frequently restricted or subject to unforeseen reductions. This frequently leads to a situation known as "strategy resource mismatch." This is a universal challenge, according to Taylor and Waldman (2008), where policy aspirations clash with available resources. The unpredictable nature of the economy frequently prevents resources from being distributed according to plan. Therefore, it is necessary to continuously analyze, realign, and prioritize force developmental tactics in light of this condition.

Infact, the nation's allocation for defence has not shown any significant increase in real terms in the last several years. It has been hovering around 1.6% of GDP and 6.25% of overall annual government expenditure Ministry of Finance Malaysia (2018). Data from 2014 to 2018 indicates that the total defence budget has averaged RM 16.3 billion. The operating expenditure (OE) has takes up the bulk of the allocation in the last five years at 77.5% while development expenditure (DE) accounts for 22.5% (see Table 1).

## LITERATURE REVIEW

### Procurement

Public sector procurement plays a crucial role in service delivery and economic development, but faces significant challenges. Ethical conduct is fundamental in public procurement, which operates within a political system and involves issues of accountability and national interest (Fourie, 2009). The process typically follows six distinct activities: specification, supplier selection, contracting, ordering, expediting, and evaluation (Caldwell & Bakker, 2017). However, corruption remains a major issue, particularly in South Africa, where non-adherence to legislative frameworks exacerbates the problem (Munzhedzi, 2016). Sustainable procurement practices are increasingly encouraged in the public sector to reduce environmental and social impacts. A study of 280 procurement practitioners from 20 countries revealed that sustainable procurement practices vary significantly across regions, with specific facilitators and barriers influencing engagement (Brammer & Walker,

2011). Addressing these challenges requires strict adherence to policies, punishment for non-compliance, and consideration of regional differences in implementing sustainable procurement practices.

Procurement practices significantly influence organizational performance in both public and private sectors. Private sector involvement in public procurement opportunities has shown to positively impact procurement function performance (Mrope et al., 2017). While traditional procurement systems remain prevalent in both sectors, private organizations demonstrate more flexibility in adopting alternative methods (Jaafar & Mohd Radzi, 2012). e-Procurement and contract management have been identified as key factors affecting organizational performance in private sectors (Kennedy & Kiarie, 2015). Comparative studies reveal that private sector purchasing often serves as a benchmark for public procurement in terms of efficiency and management processes (Vorosmarty & Tatrai, 2019). However, differences exist in their approaches, with private organizations focusing more on supplier management, while public entities emphasize procurement processes and regulatory compliance (Vorosmarty & Tatrai, 2019). To improve procurement practices, organizations are recommended to develop operational guidelines, establish long term contracts with preferred suppliers, and adopt appropriate supplier strategies (Kennedy & Kiarie, 2015).

### **Procurement Efficiency**

The procurement process is one of the important activities to support operational and training needs in the RMAF. To ensure that operational and training requirements run smoothly, it must be supported by efficiency in procurement. Therefore, the procurement process must be supported with critical procurement success factors. According to Rendon (2008) the five best practice categories of organizational procurement management processes are process strength, effective results, management support, process integration and process measurement. This is proven through an empirical investigation of procurement agencies within the Department of Defence (DoD).

Purchasing efficacy and efficiency in the function should be the first priorities for procurement performance in order to transition an organization from a reactive to a proactive state and fulfill set performance objectives. (Knudsen, 1999) As stated by (Van Weele, 2006), there are two components of purchasing performance that are considered procurement effectiveness, namely purchasing effectiveness and purchasing efficiency.

In order to maximize government spending and guarantee sustainable development, public procurement efficiency is essential (Talpig, 2024). Legislation, transparency, and the inclusion of sustainability criteria are important determinants of procurement efficiency (Talpig, 2024). It has been demonstrated that process management techniques improve the manufacturing sectors procurement efficiency (Laraib et al, 2021). The argument between decentralized and centralized procurement systems emphasizes the necessity of a well-rounded strategy because each approach has advantages and disadvantages (Kanepejs & Kirikova, 2018). With the potential to increase efficiency and cut costs, Electronic Procurement Systems (EPS) have become a viable alternative to traditional procurement techniques (Ibrahim, 2021). All things considered, improving procurement efficiency necessitates a multipronged strategy that includes enforcing stricter laws, encouraging openness, putting process management strategies into practice, and embracing electronic systems.

### **Critical Success Factors (CSFs)**

Important procurement success variables determine how efficient procurement is determined. Procurement efficiency is affected by a number of factors. (Trent and Monczka, 1994) have highlighted several critical success elements for procurement, including cross-functional resource teams, organizational resources, supplier involvement, decision-making power, team leadership, and teamwork.

(Schotanus, Telgen, and de Boer, 2010) found that no enforced participation, sufficient amount of effort contribution, all members contributing with knowledge, continuity in member representation, communication, and equitable allocation of savings are success factors in procurement to manage small and intensive buying groups. This shows that the role of all parties is important to ensure procurement efficiency. In determining the efficiency of knowledge acquisition it is important to determine each competent personnel in implementing the acquisition process.

---

## Processes

Procurement in the Royal Malaysian Air Force (RMAF) plays a vital role in maintaining operational readiness and ensuring the availability of resources needed for national defence. As a public sector entity, the RMAF is governed by strict procurement guidelines and regulations set by the Malaysian government. These guidelines aim to ensure transparency, accountability, and efficiency in procurement processes (Mncwango & Ramdass, 2023). The RMAF's procurement activities encompass a wide range of items, including aircraft, spare parts, weaponry, and support services. Managing such a complex procurement portfolio requires robust processes, skilled personnel, and advanced technologies to achieve cost effectiveness and operational excellence (Kumar et al, 2015).

One of the primary challenges faced by the RMAF in procurement is the reliance on outdated systems and procedures, which can lead to inefficiencies in decision making and resource allocation. The nature of defence procurement often involves lengthy procurement cycles due to rigorous compliance with legal and regulatory frameworks (Mncwango & Ramdass, 2023). This can result in delays, increased costs, and difficulties in maintaining the availability of mission critical equipment. Additionally, as military procurement often involves international suppliers, the RMAF must navigate challenges such as exchange rate fluctuations, vendor reliability, and geopolitical considerations. Addressing these issues requires strategic planning, risk management, and close collaboration with both domestic and international partners (Kakwezi & Nyeko, 2019).

To enhance procurement efficiency, the RMAF has begun exploring modern procurement techniques, including the adoption of e-Procurement systems and data driven decision making tools. E-procurement can streamline processes by automating repetitive tasks, improving communication with suppliers, and enhancing transparency (Laraib et al., 2021). Furthermore, integrating performance metrics such as lead time, cost savings, and supplier reliability can help the RMAF monitor and improve its procurement processes. Emphasis on workforce training is also critical, as skilled personnel are essential for managing procurement activities effectively (Kumar et al, 2015). Investing in capacity building and equipping procurement officers with advanced skills can significantly improve overall efficiency.

Efficient procurement management is crucial for the Royal Malaysian Air Force to maintain its operational capabilities and achieve its strategic goals. By addressing existing challenges, such as outdated systems and complex regulatory requirements, the RMAF can improve the effectiveness of its procurement processes (Kakwezi & Nyeko, 2019). Implementing modern technologies, fostering supplier relationships, and investing in workforce development are key steps toward achieving procurement efficiency. Ultimately, a well structured procurement system will not only enhance the RMAF's operational readiness but also ensure that resources are utilized effectively, contributing to the overall defence and security of Malaysia (Mncwango & Ramdass, 2023).

## Resources

If public procurement is to guarantee economy and transparency, it must be effective. Annual procurement planning, the use of information and communication technologies (ICT), employee capacity building, and a robust correction system can all help make public procurement more efficient, which will lead to cost savings and greater transparency (Ali et al, 2021).

Utilizing of the e-procurement system introduced by the government is very beneficial in determining the effectiveness of government procurement. According to (Grega et al., 2019) E-auctions generally result in greater savings compared to traditional methods.

According to a quality management-oriented approach, the organization's internal procurement and management of material resources can be described as a collection of interconnected, logically connected, and value-added sub processes that are carried out to guarantee and manage the components required to carry out business effectively and efficiently. Efficient procurement and material resource management, based on strong supplier relationships, can enhance organizational effectiveness and success by meeting stakeholder expectations (Carstea et al., 2014).



In addition, the use of technology is also a critical factor in procurement success. The government has introduced the e-Procurement system as a tool to implement procurement effectively and efficiently. Vaidya, Sajeev, and Callander (2006) stated that Classifying important success factors in procurement according to their relationship with technology or human factors.

## **Workforce**

Procurement in the Royal Malaysian Air Force (RMAF) is a pivotal function that ensures the readiness and sustainability of critical defence operations. Effective procurement involves the acquisition of a wide range of resources, including aircraft, spare parts, weaponry, and services, essential for maintaining operational efficiency. The complexity of defence procurement requires a workforce equipped with advanced skills in supply chain management, contract negotiation, and technical knowledge specific to defence systems. By improving procurement efficiency, the RMAF can achieve significant cost reductions and optimize the allocation of its limited budget, ensuring resources are directed towards mission-critical needs (Kumar et al., 2015).

One key area where procurement efficiency can be improved is through workforce development. Similar to the healthcare sector, where effective workforce cost management has shown to deliver substantial savings for NHS hospitals (C. White, 2015), the RMAF can benefit from investing in training programs for its procurement personnel. These programs should focus on foundational procurement skills and advanced capabilities, such as risk assessment and strategic sourcing. Equipping the workforce with these competencies can reduce errors, streamline procurement processes, and enhance overall productivity, leading to better value for money and improved operational outcomes.

Additionally, leveraging modern technologies can significantly improve procurement efficiency in the RMAF. Implementing e-Procurement systems can automate routine tasks, enhance transparency, and provide real time data for decision making. However, the success of such systems depend on the workforce ability to adapt to and effectively use these technologies. Training initiatives aimed at improving digital literacy and fostering a culture of continuous improvement are crucial. By aligning workforce capabilities with modern procurement practices, the RMAF can strengthen its supply chain resilience, reduce administrative costs, and ensure timely delivery of resources critical for national defence (Ausink et al, 2004).

## **Leadership**

Leadership plays a pivotal role in shaping procurement efficiency within the Royal Malaysian Air Force (RMAF), influencing both strategic direction and day to day operations. Effective leadership ensures that procurement aligns with organizational objectives and the specific demands of defence operations, such as acquiring mission critical resources like aircraft, maintenance equipment, and defence technology. Leaders in the RMAF must navigate challenges such as budget constraints, regulatory compliance, and global supply chain dependencies, requiring a combination of strategic vision and operational oversight. Research highlights that leadership commitment and communication significantly enhance procurement staff efficiency by fostering clarity in roles, improving decision making and ensuring alignment with broader organizational goals (M. Selamat & Abdulrahman Sultan Elwahj, 2018).

One of the critical aspects of leadership in procurement is transitioning from a tactical to a strategic function. This involves adopting leadership models that emphasize pragmatism and a conservator approach, where leaders not only manage procurement activities but also influence policy making and resource allocation. In the RMAF, leaders must ensure that procurement processes are not only efficient but also sustainable and adaptable to evolving defence requirements. By incorporating strategic foresight and a culture of innovation, RMAF leaders can elevate procurement to play a central role in achieving organizational ends, ensuring mission readiness, and optimizing resource use (Snider, 2006).

Furthermore, leadership impacts the organizational culture surrounding procurement. A strong leadership commitment on integrity, accountability, and competence fosters a positive procurement environment, which is critical for preventing inefficiencies, delays, and resource wastage. In government procurement, studies have shown that leadership directly influences the procurement of goods and services by shaping institutional policies

and ensuring compliance with regulatory standards (Pujoyono et al., 2019). In the RMAF context, this means that leaders must ensure adherence to procurement guidelines while promoting transparency and ethical practices, particularly in high stakes defence contracts involving significant financial and operational implications.

Leadership development is crucial for enhancing procurement practices in the RMAF. Investing in leadership training for procurement officers can build their capacity to manage complex negotiations, supplier relationships, and risk mitigation strategies effectively. By empowering leaders with advanced skills and fostering cross functional collaboration, the RMAF can enhance decision making, improve procurement outcomes, and ensure alignment with national defence priorities. Ultimately, strong and strategic leadership in procurement not only boosts institutional efficiency but also strengthens the RMAF operational readiness and ability to respond to emerging challenges (M. Selamat & Abdulrahman Sultan Elwahj, 2018; Snider, 2006; Pujoyono et al., 2019).

## Relationship

Procurement in the Royal Malaysian Air Force (RMAF) is a highly strategic function, given its critical role in ensuring the availability of resources required to maintain operational readiness and national security. The procurement process involves acquiring specialized equipment, such as aircraft, spare parts, and military technology, often requiring collaboration with domestic and international suppliers. Effective procurement efficiency in the RMAF depends heavily on robust relationship management with suppliers. Strong supplier relationships enable better contract negotiations, improved delivery timelines, and more reliable service, which are essential for ensuring that procurement meets the rigorous demands of defence operations (Mogere & Otuyah, 2020).

The duration and quality of business relationships also play a vital role in overcoming challenges associated with defence procurement. Long term supplier relationships allow for better trust, improved coordination, and a deeper understanding of organizational needs. In the RMAF, maintaining consistent relationships with suppliers ensures that critical supplies are delivered on time and meet the required specifications. These partnerships are particularly important in defence procurement, where quality and reliability are non-negotiable. Studies have shown that long standing supplier relationships improve communication and mitigate risks, enhancing overall procurement efficiency (Burki & Buvik, 2010).

The integration of innovative approaches like Procurement 4.0 could further enhance the RMAF procurement practices. Procurement 4.0 emphasizes competitiveness, collaboration, digitalization, and agility, aligning well with the needs of a defence organization. By leveraging digital tools, the RMAF can enhance transparency and streamline procurement processes, allowing for real time tracking of supplies and improved decision making. Moreover, collaborative practices, such as joint planning and cooperative problem solving, strengthen supplier alliances and reduce inefficiencies. These advancements align with the strategic goals of ensuring procurement supports the RMAF operational requirements effectively (Rasanjani et al., 2019).

Communication between the RMAF procurement team and its suppliers is another critical factor in enhancing procurement efficiency. Poor communication, such as working in silos, distorts the procurement system, leading to inefficiencies and delays. Collaborative communication practices, as highlighted by Monczka, Petersen, Handfield, and Ragatz (1998), include trust, interdependence, information sharing, and cooperative problem solving. These practices are key success factors for creating strong alliances with suppliers. The RMAF must prioritize these elements to foster relationships that are transparent, productive, and resilient against challenges in the supply chain.

Strategic supplier relationship management ensures that the RMAF achieves better value for money and meets its operational objectives. Developing a framework that includes trust, regular communication, and shared goals can mitigate risks and enhance supplier performance. By adopting innovative practices and fostering long term partnerships, the RMAF can overcome procurement challenges and ensure that critical supplies are available to support national defence effectively. This strategic approach not only improves procurement efficiency but also strengthens the RMAF ability to respond swiftly to evolving defence needs (Laraib et al., 2021; Monczka et al., 1998).

## RESEARCH METHODOLOGY

### Hypothesis Development

Hypothesis testing is conducted by using questionnaires from respondents that have been set. This question will be distributed to the respondents involved in the Materiel Branch. The hypothesis for this research is as follows:

(Fred Sollish, 2012) mentioned that Procurement procedures are a set of actions carried out by an organization to ensure the smooth running of the supply chain. This process must be implemented according to the sources of regulations in force. Bureaucracy in procurement needs to be reduced to ensure procurement runs smoothly and efficiently. Laws and Regulations have been enacted for the purpose of establishing procurement procedures to be a reference by public entities in order to achieve objectives such as maximizing economy and efficiency, promoting competition, and ensuring fair competition. It also aims to promote procedural integrity and fairness, increase transparency, accountability, increase public confidence in procedures, and facilitate the promotion of local industry and economic development. Public Procurement has enabled the establishment of standard procedures that enable an efficient flow of procurement (PPDA, 2007).

H1. There is a significant impact of critical success factors (CSFs)- processes factor in procurement efficiency.

According to (Che & Chur Hansen, 2019), competence is a set of knowledge, skills, and attitude (personality) that must be mastered by an employee through learning activities about his field of work and position. A high level of competence will enable procurement management to be more efficient. Procurement managers need high skills according to current needs. Procurement managers should be equipped with the knowledge to be able to respond to current situations to produce accurate decisions. In addition to adapting to changing circumstances, it is crucial to cultivate advanced management skills to enhance operational efficiency. These characteristics are required to ensure procurement efficiency. (Sheffi and Klaus, 1997)

H2. There is a significant impact of critical success factors (CSFs)- workforce factor in procurement efficiency.

In the form of the Malaysian Arm forces Government, in order to achieve the goals, set, procurement refers to the purchase of equipment in accordance with the current laws and regulations of Malaysia. The leaders should carry out procurement with reference to the regulations in force. (Khairul Naim & Siwar, 2012), leadership between the military and the federal government is often associated in the process of acquiring billions of dollars that feel useless. This happens when the federal government has promised to provide investment in the procurement of defence equipment but where the results are less. (Richter, 2013). This failure has caused a reaction in the media and condemned the existing procurement approach and demanded that it be more transparent, efficient and effective. Leadership must use the power available to produce accurate decisions based on the rules in force. (Gilmore, 2021)

H3. There is a significant impact of critical success factors (CSFs)- leadership factor in procurement efficiency.

(Liker & al, 2004), the procurement department should have in depth knowledge of the supply market and suppliers in the market. This knowledge is important to demonstrate that the division can evaluate and compare suppliers to make procurement more efficient and effective. It can also improve supplier service levels and produce efficiencies in procurement. According to Monczka, Petersen, Handfield, and Ragatz (1998), effective communication among procurement teams is crucial for achieving procurement efficiency. Clear and consistent communication from top to bottom within the organization ensures that officers and other ranks work collaboratively rather than in silos.

H4. There is a significant impact of critical success factors (CSFs)- relationship factor in procurement efficiency

Every country wants to have a security of arms supply during wartime to be able to maintain their defence system through access to components and spare parts and to develop their own defence system. In this situation the government needs to improve technology to reduce dependence on foreign weapons. (Lundmark, 2011). Implementing a prudent purchasing strategy with appropriate agreements with suppliers is critical. But it needs

to be implemented to ensure procurement efficiency. The process of selecting contractors until signing the contract is a very important process to determine procurement efficiency. (Dweiri et al, 2016), e-procurement helps the procurement department to select items electronically by using IT facilities and work can be done from the desktop. The act of initiating an electronic approval process and creating, submitting, and receiving purchase orders, shipping orders, and other related documents electronically. E - Procurement will impact the source of Critical Success Factors (CSFs) in procurement efficiency. (Haron, Abdul Rahman, Othman, Shu Hui, & Omar, 2011), e-procurement is used as a medium to procure supplies and services online. This system is essential for all organizations to determine procurement efficiency. (Oliveira and Amorim, 2001). According to (Nawi, Roslan, Salleh, Zulhumadi, and Harun, 2016), by transitioning the execution of procurement from conventional to electronic procurement, companies can streamline regulatory procedures, reduce administrative burdens, and still comply with legal requirements.

H5. There is a significant impact of critical success factors (CSFs)- resources in procurement efficiency

### Population and Sample Size

This study was carried out to evaluate the effectiveness in procurement of the Royal Malaysian Air Force (RMAF). The target population of this study involves procurement personnel (Materials Branch) in the Royal Malaysian Air Force. It consists of two main parts which are headquarters and unit level. Each headquarters and unit have the responsibility and authority to perform procurement according to the rating as a *Pusat Tanggungjawab* (PTJ). There are 16 *Pusat Tanggungjawab* (PTJ) within the RMAF managed by Materiel Branch throughout Malaysia. Materiel Branch consists of several various sections; however, this study focused on Officers and other ranks from Materiel Management only as they directly involved with procurement process totaling 870. Out of 870, 211 respondents have responded and being used for this.

## FINDINGS

### Demographic Analysis

The demographic profile by rank, as shown in Table 4.1, illustrates the distribution of respondents across various ranks within the Royal Malaysian Air Force (RMAF) and includes some civilian participants. The largest group among the respondents is Captains (Capt RMAF), who make up 29.9% (63 individuals) of the sample, followed by Majors (Maj RMAF) at 23.2% (49 individuals). Together, these two ranks account for over half of the respondents, indicating that mid-level officers are the primary participants in this study. Lieutenants (Lt RMAF) comprise 10% (21 individuals), and Lieutenant Colonels (Lt Col RMAF) make up 5.7% (12 individuals), showing a smaller but still significant representation from other officer levels.

Lower-ranking personnel, including Corporal (Kpl U) at 12.8% (27 individuals) and Sergeant (Sjn U) at 7.6% (16 individuals), also contribute to the sample, providing insights from non-commissioned officers. Other ranks with smaller representation include Flight Sergeant (Fsin) at 3.3% (7 individuals), Warrant Officer (WO) at 0.5% (1 individual), Lance Corporal (Luk) at 1.4% (3 individuals), and Airman (Lu) at 2.4% (5 individuals). Additionally, there is a civilian (CIV) representation of 2.4% (5 individuals), indicating a minor non-military perspective in the study.

Overall, the cumulative percentages show a diverse range of ranks, with the majority of respondents holding mid-level officer positions, providing a balanced view of the RMAF's procurement processes from various hierarchical perspectives.

Table 4.1: Demographic Profiles by Rank

Rank	Frequency	Percent	Valid Percent	Cumulative Percent
Col RMAF	2	0.9	0.9	0.9
Lt Col RMAF	12	5.7	5.7	6.6



Maj RMAF	49	23.2	23.2	29.8
Capt RMAF	63	29.9	29.9	59.7
Lt RMAF	21	10	10	69.7
WO	1	0.5	0.5	70.2
Fsjn	7	3.3	3.3	73.5
Sjn U	16	7.6	7.6	81.1
Kpl U	27	12.8	12.8	93.9
Luk	3	1.4	1.4	95.3
Lu	5	2.4	2.4	97.7
Civilian	5	2.4	2.4	100.0
Total	211	100.0	100.0	

The demographic profile of respondents based on their working experience reveals a diverse range of experience levels as shown in table 4.2. The largest group of respondents, comprising 33.2% (70 individuals), has between 6 to 10 years of experience, while 21.8% (46 individuals) have less than 5 years of experience. Together, these two groups make up 55% of the sample, indicating that more than half of the respondents are relatively early in their careers. In the mid-experience range, 11.8% (25 respondents) have 11 to 15 years of experience, and 18.5% (39 respondents) have 16 to 20 years. Those with longer tenures in their fields—21 to 25 years and 26 years or more—represent smaller portions, at 7.1% and 7.6%, respectively. This distribution shows that the sample includes a substantial proportion of early to mid-career professionals, with fewer individuals in the higher experience brackets. The cumulative percentages further indicate that 85.3% of respondents have up to 20 years of experience, highlighting a workforce profile that leans towards those with less than two decades in their roles in RMAF Materiel Branch.

Table 4.2: Demographic Profile by Working Experience

Working Experience	Frequency	Percent (%)	Valid Percent	Cumulative Percent (%)
Below 5 years	46	21.8	21.8	21.8
6 to 10 years	70	33.2	33.2	55
11 to 15 years	25	11.8	11.8	66.8
16 to 20 years	39	18.5	18.5	85.3
21 to 25 years	15	7.1	7.1	92.4
26 above	16	7.6	7.6	100.0
Total	211	100.0	100.0	

The demographic profile by PTJ (Division/Units) reveals a distribution of respondents across various units within the Royal Malaysian Air Force (RMAF) as shown in table 4.3. The largest group of respondents is from PTJ MTU (Kuala Lumpur), comprising 21.3% (45 individuals) of the sample. This is followed by PTJ Kuantan

Airbase (Pahang) with 16.6% (35 individuals) and PTJ MPBU (Selangor) with 11.8% (25 individuals). Other units with notable representation include PTJ Gong Kedak Airbase (Terengganu) at 8.5% (18 individuals), PTJ Sendayan Airbase (Negeri Sembilan) at 7.1% (15 individuals), and PTJ Butterworth Airbase (Penang) and PTJ Subang Airbase (Selangor), each contributing 6.2% (13 individuals). Several units have smaller proportions of respondents, including PTJ Kuching Airbase (Sarawak) with 2.8% (6 individuals), PTJ Labuan Airbase (W.P. Labuan) with 4.3% (9 individuals), and PTJ Bukit Lunchu (Johor) with 2.4% (5 individuals). A few units, such as PTJ Air Force Academy (Perak), PTJ Regimen RMAF (Selangor), and PTJ Sekolah Latihan Tempur (Pahang), each contribute a minimal 0.9% (2 individuals) of the sample.

The cumulative percentages indicate that the majority of respondents are concentrated within a few large units, with 73.9% coming from the top five units listed. This distribution highlights a significant concentration of personnel in certain key bases and units, with the remaining participants scattered across smaller divisions, reflecting the organizational structure and workforce distribution within the RMAF.

Table 4.3: Demographic Profile by PTJ / Division / Units

Units	Frequency	Percent	Valid Percent	Cumulative Percent
PTJ MTU (Kuala Lumpur)	45	21.3	21.3	21.3
PTJ MPBU ( Selangor)	25	11.8	11.8	33.1
PTJ MTU BSM (Kuala Lumpur)	1	0.5	0.5	33.6
PTJ Air force Academy (Perak)	2	0.9	0.9	34.5
PTJ Air force College (Kedah)	13	6.2	6.2	40.7
PTJ Sendayan Airbase (N.Sembilan)	15	7.1	7.1	47.8
PTJ MPOU (Selangor)	7	3.3	3.3	51.1
PTJ Butterworth Airbase (P.Pinang)	13	6.2	6.2	57.3
PTJ Kuantan Airbase (Pahang)	35	16.6	16.6	73.9
PTJ Gong Kedak Airbase (Terengganu)	18	8.5	8.5	82.4
PTJ Subang Airbase (Selangor)	13	6.2	6.2	88.6
PTJ Kuching Airbase (Sarawak)	6	2.8	2.8	91.4
PTJ Labuan Airbase (W.P Labuan)	9	4.3	4.3	95.7
PTJ Regimen RMAF (Selangor)	2	0.9	0.9	96.6
PTJ Sekolah Latihan Tempur (Pahang)	2	0.9	0.9	97.5
PTJ Bukit Lunchu (Johor)	5	2.4	2.4	100.0
Total	211	100.0	100.0	

The demographic profile by department shows the distribution of respondents across various departments within the organization as shown in table 4.4. The Finance Department has the highest representation, with 22.7% (48

individuals) of the sample, followed by the Local Purchase Order (LPO) Department and the Contract Department, each accounting for 14.2% (30 individuals) and 14.7% (31 individuals), respectively. The Stock Control Department contributes 10.4% (22 individuals) of respondents, while the Storage Department and the Transportation Department make up 7.6% (16 individuals) and 6.2% (13 individuals), respectively.

A notable portion of respondents, classified under "Others," represents 24.2% (51 individuals). This individual is a Materiel Branch officer who has experience working in the procurement department. However, they have been assigned outside the RMAF such as Joint Forces Headquarters, Army Headquarters and Navy Headquarters. The cumulative percentages highlight that over half of the respondents are concentrated in the top three departments, reflecting a substantial presence of Finance, LPO, and Contract Department personnel. This distribution suggests that the study includes perspectives from key departments involved in procurement and logistics, while also encompassing input from other varied roles within the organization.

Table 4.4: Demographic Profile on Departments

Department	Frequency	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Finance Department	48	22.7	22.7	22.7
Local Purchase Order Department (LPO)	30	14.2	14.2	36.9
Contract Department	31	14.7	14.7	51.6
Stock Control Department	22	10.4	10.4	62
Storage Department	16	7.6	7.6	69.6
Transportation Department	13	6.2	6.2	75.8
Others	51	24.2	24.2	100.0
Total	211	100.0	100.0	

**Procurement efficiency**

The table shown in 4.7 "Mean and Standard Deviation of Perception Scores on Procurement Efficiency" summarizes respondents' perceptions regarding factors affecting procurement efficiency. Top management's influence on procurement efficiency is considered significant, with a mean score of 4.02 and a standard deviation of 0.973, showing a moderate level of consensus. Base commanders' efficiency in managing procurement is rated slightly lower, with a mean of 3.79 and a standard deviation of 0.809, indicating less agreement. The prompt updating of financial regulations by responsible parties has a high mean score of 4.18 and a standard deviation of 0.758, reflecting strong agreement. The distribution of updated financial regulation information to procurement officers scored a mean of 4.00 and a standard deviation of 0.814, indicating a strong perception of timely information sharing. Confidence in the competence of procurement personnel scored a high mean of 4.12 and a standard deviation of 0.793, while the importance of communication between the procurement team and suppliers received the highest mean score of 4.20, with a standard deviation of 0.781. Overall, these scores reveal a general consensus on the significance of these factors in enhancing procurement efficiency.

Table 4.7: Mean and Std. Deviation of Perception Scores on Procurement efficiency

Statement	Mean	Std. deviation
Top management influences procurement efficiency at the base level?	4.02	0.973
Base commanders are efficient in managing procurement?	3.79	0.809

Changes in financial regulations are constantly updated by the responsible party?	4.18	0.758
Information on changes in financial regulations is quickly distributed to all procurement officers?	4.00	0.814
Personnel placed in the procurement department have the competence to manage the procurement process?	4.12	0.793
Communication between the procurement team and suppliers is important to determine procurement efficiency?	4.20	0.781

**Critical Success Factors (CSFs) Processes**

The table shown in 4.8 "Mean and Standard Deviation of Perception Scores on Critical Success Factor (CSFs) Processes" provides insights into perceptions of various factors contributing to successful procurement processes. The statement on management ensuring that all procurement personnel comply with regulations received the highest mean score of 4.45, with a low standard deviation of 0.634, indicating strong agreement among respondents. The contribution of procurement procedures to transparency and accountability scored a mean of 4.36, with a standard deviation of 0.731, while the possibility of enhancing and optimizing procurement effectiveness through technology also scored 4.36 with a lower standard deviation of 0.671, suggesting high perceived importance and agreement on both factors.

Statements regarding the reduction of bureaucracy to ensure smooth procurement operations and the role of procurement procedures in maintaining supply chain smoothness received mean scores of 4.39 and 4.31, respectively, with standard deviations of 0.841 and 0.728, showing consensus on their importance. The regular receipt of updated rules scored a mean of 4.09 and a standard deviation of 0.832, indicating a slightly lower level of agreement on this factor. Lastly, the ease of following current rules received a relatively lower mean of 3.87, with a standard deviation of 0.815, reflecting some variation in perceptions on the suitability of existing rules. This shows that some of the rules introduced are not suitable for the environment involving procurement for national defence. Overall, the scores highlight strong consensus on the importance of compliance, transparency, and technological optimization in achieving procurement success.

Table 4.8: Mean and Std. Deviation of Perception Scores on Critical Success Factor (CSFs) Processes

Statement	Mean	Std. deviation
Does a procedure in procurement contribute to transparency and accountability?	4.36	0.731
Does management always determine that all procurement personnel comply with the regulations in force?	4.45	0.634
Do you regularly receive updated rules to adapt to changing conditions?	4.09	0.832
Do you agree that the current rules are easy to follow and suitable for the current situation in your place?	3.87	0.815
Is it possible to enhance and optimize the effectiveness of the current procurement processes through the use of technology?	4.36	0.671
Is Procurement procedure a set of actions carried out by the organization to ensure the smoothness of the supply chain?	4.31	0.728
Bureaucracy in procurement needs to be reduced to ensure procurement runs smoothly and efficiently.	4.39	0.841



### Critical Success Factor (CSFs) Workforce

The table on shown in 4.9 is the mean and standard deviation of perception scores regarding the critical success factor (CSFs) of workforce competencies in procurement highlights several key areas. First, it reveals that personnel placed in the procurement department are moderately perceived to have expertise, scoring an average of 3.76 with a standard deviation of 0.895. Training is emphasized, as personnel attending financial courses received a high mean score of 4.17 (Std. Dev. = 0.790), and the implementation of Training Competency Instruction (TCI) related to financial management to ensure competency in financial regulations scored 4.08 (Std. Dev. = 0.859). Problem-solving abilities, particularly related to eProcurement systems, were rated at 3.90, showing a reasonable level of skill in handling digital procurement tools. The competence of commanding officers in the procurement process was scored similarly at 3.89 (Std. Dev. = 0.856), indicating a moderate perception of leadership skills in procurement.

Lastly, the importance of high competency for efficiency and the ability to make accurate decisions in response to current situations were rated the highest, both with a mean of 4.55 and relatively low standard deviations (0.698 and 0.663, respectively). This demonstrates a strong consensus on the significance of advanced skills in procurement management for effective decision-making and operational efficiency. Overall, the table underscores the importance of training and high competence levels in creating an effective procurement workforce.

Table 4.9: Mean and Std. Deviation of Perception Scores on Critical Success Factors (CSFs) Workforce

Statement	Mean	Std. deviation
Personnel placed in the procurement department have expertise in the field?	3.76	0.895
Personnel who carry out procurement duties sent to attend financial courses?	4.17	0.790
Does your unit implement Training Competency Instruction (TCI) related to financial management to ensure that all members are competent in financial regulations?	4.08	0.859
Personnel can solve problems easily, especially related to the use of the eProcurement system?	3.90	0.802
Are Commanding Officer competent in the procurement process?	3.89	0.856
A high level of competence will enable procurement management to be more efficient?	4.55	0.698
Procurement managers should be equipped with the knowledge to be able to respond to current situations to produce accurate decisions?	4.55	0.663

### Critical Success Factors (CSFs) Leadership

The table in 4.10 shown mean and standard deviation of perception scores for the critical success factors (CSFs) of leadership in procurement assesses various leadership qualities and competencies. The perceived competence of commanding officers in the procurement process scored an average of 3.82 with a standard deviation of 0.822, indicating a moderate level of perceived proficiency. Commanding officers' ability to give instructions according to regulations received a higher mean score of 4.08 (Std. Dev. = 0.819), reflecting a relatively strong adherence to rules in their guidance.

Support provided by commanding officers to procurement personnel scored an average of 4.13 with a standard deviation of 0.754, suggesting that leadership support is generally well-regarded. However, the influence of commanding officers on procurement decisions scored slightly lower, with a mean of 3.80 and a higher standard

deviation of 1.163, indicating a wider range of perceptions regarding their impact on decision making. This shows that the respondent is aware that some of the decisions given by the commanding officer have less effect on procurement efficiency. This might be influenced by various factors, including personnel interest, competence, and potential biases.

The competencies of specific roles, such as the *Ketua Cawangan Materiel Branch*, Finance Officer, and SNCO (Senior Non-Commissioned Officer) in the procurement process, received relatively high scores, with means of 4.21, 4.26, and 4.14, respectively. The Finance Officer's score (Std. Dev. = 0.758) was particularly notable, suggesting a high level of perceived competency and consistency. Overall, the table reflects a generally positive perception of leadership support and competence in procurement, with some variability in views on decision-making influence.

Table 4.10: Mean and Std. Deviation of Perception Scores on Critical Success Factors (CSFs) Leadership

Statement	Mean	Std. deviation
Are Commanding officers competent in the procurement process?	3.82	0.822
The Commanding officer gives instructions according to the rules in force?	4.08	0.819
Commanding officers provide support to Procurement personnel?	4.13	0.754
Do Commanding officer influence procurement decisions?	3.80	1.163
<i>Ketua Cawangan Materiel Branch</i> competent with procurement process?	4.21	0.815
Finance Officer competent with procurement process?	4.26	0.758
SNCO Procurement competent with procurement process?	4.14	0.810

### Critical Success Factors (CSFs) Relationship

The table in 4.11 presents the mean and standard deviation of perception scores related to the critical success factors (CSFs) of organizational relationships. The statement "Good Teamwork?" has the highest mean score at 4.30, with a standard deviation of 0.663, indicating a strong positive perception and a relatively low variability in responses. Similarly, "Communication between officer and staff?" has a high mean of 4.33, suggesting positive perceptions in internal communication, with a standard deviation of 0.671, showing low response variability.

On the other hand, the statement "Communication between the procurement team and suppliers is good?" has the lowest mean score of 3.96 and a higher standard deviation of 0.821, suggesting a slightly lower perception of effectiveness in external communication with suppliers and a wider spread of responses, reflecting more varied opinions.

Other statements, such as "Good Team Building" (mean = 4.25, std. dev. = 0.673) and "Ability to Work More with the Customer to Achieve Both Goals?" (Mean = 4.12, std. dev. = 0.733), also show positive perceptions with moderate response consistency. Overall, the table indicates generally favorable perceptions of relationship-related success factors, with some variation in specific aspects like supplier communication.

Table 4.11: Mean and Std. Deviation of Perception Scores on Critical Success Factors (CSFs) Relationship

Statement	Mean	Std. deviation
Communication between the procurement team and suppliers is good?	3.96	0.821
Communication between officer and Staff?	4.33	0.671

Program Office Support from headquarters?	4.14	0.734
Strategic Relationships between Unit, headquarters and Accountant Office?	4.12	0.746
Better Communication From Top Down?	4.09	0.751
Good Team Building?	4.25	0.673
Good Teamwork?	4.30	0.663
Ability To Work More With The Customer To Achieve Both Goals?	4.12	0.733

**Critical Success Factor (CSFs) Resources.**

The table in 4.12 displays the mean and standard deviation of perception scores regarding critical success factors (CSFs) in resource management within the organization. The statement "Personnel take care of the use of passwords?" achieved the highest mean score of 4.30, with a standard deviation of 0.932, indicating that there is a strong positive perception regarding the care taken in password management, though responses varies moderately.

On the other hand, the statement "Any password misuse?" has the lowest mean of 2.22 and the highest standard deviation of 1.310, reflecting a general disagreement with this statement but also showing a wide spread of responses, suggesting different opinions about password misuse. In this case, the respondent disagrees that there is misuse of password among procurement officers when carrying out government procurement activities.

Other statements, such as "The material branch is equipped with computer facilities?" and "e-procurement is used as a medium to procure supplies and services online," both have a mean of 4.29 with standard deviations of 0.786 and 0.688, respectively, suggesting that respondents generally agree on the adequacy of computer facilities and the use of e-procurement for online procurement, with relatively low variability.

Statements regarding skilled personnel, e-procurement aiding desktop selection, and electronic procurement’s ability to streamline processes have means ranging from 4.18 to 4.21 and standard deviations between 0.741 and 0.790, indicating consistent positive perceptions with moderate consensus among responses. Overall, the data suggest that resources such as e-procurement systems and computer facilities are perceived as valuable, with particular emphasis on password management and access security.

Table 4.12: Mean and Std. Deviation of Perception Scores on Critical Success Factors (CSFs) Resources.

Statement	Mean	Std. deviation
The material branch is equipped with Computer facilities?	4.29	0.786
Skilled personnel in using computers and eProcurement systems?	4.18	0.755
Personnel take care of the use of passwords?	4.30	0.932
There is a password misuse?	2.22	1.310
e-procurement helps the procurement department to select items electronically by using IT facilities and work can be done from the desktop?	4.19	0.790
e-procurement is used as a medium to procure supplies and services online?	4.29	0.688
Electronic procurement can help control the work process, reduce the administrative burden, and still comply with legal requirements?	4.21	0.741

Table 4.13 presents the descriptive analysis of six critical success factors (CSFs) such as workforce, leadership, resources, efficiency, relationship, and processes reveals generally positive perceptions across the board, based on data from 211 participants. Each factor has a mean score close to 4 on a 1-to-5 scale, indicating favorable evaluations. Among these, Processes has the highest mean score of 4.257, suggesting strong positive views about process management, while Resources has the lowest mean of 3.962, still reflecting a favorable but slightly less confident perspective.

Standard deviations for these factors range from 0.51084 for processes, indicating highly consistent responses, to 0.61467 for relationship, where there are slightly more variation in participant views. The skewness values, all negative, indicate that responses are skewed toward the higher end of the scale, particularly for Processes, which has the most substantial negative skew at -1.565. This pattern underscores a strong tendency for favorable ratings. Kurtosis values, all positive, suggest that responses are tightly clustered around the mean, with Processes showing the highest kurtosis at 7.429, indicating strong consensus on its positive evaluation. Overall, the data depict a highly positive and somewhat consistent perception across all factors, with processes and workforce being especially well regarded, and a slightly broader range of views on Relationship.

**Correlation Analysis**

Correlation analyses were carried out to determine the relationships, if any, between variables of Procurement efficiency and critical success factors (CSFs). As the variable values were found to be normally distributed, the analyses were carried out using Pearson Coefficient Correlation, a parametric correlation tool. Positive coefficients show that if one variable's value increases, the other variable's value also tends to increase (Sekaran & Bougie, 2019). The Pearson correlation matrix was employed in this study to display the direction, strength, and importance of the correlations between the variables that were periodically examined. By comparing the changes in one variable to the changes in another, the correlation is calculated. The significance level for this study was set at  $p=0.05$  (Sekaran & Bougie, 2019). The summary statistics of the correlation analyses are presented in Table 4.22 are discussed as follows: -

**Relationship between Critical Successes Factors and Procurement efficiency**

Table 4.21: Summary Statistics of Correlation Analysis between Procurement Efficiency and Critical Successes Factors.

Variable	Procurement efficiency	
	Pearson Coefficient of Correlation ( <i>r</i> )	<i>p</i> -value
Processes	0.001	0.655**
Workforce	0.001	0.657**
Leadership	0.001	0.678**
Relationship	0.001	0.769**
Resources	0.001	0.713**

\*\* Significant at 0.01

**Relationship between Processes and Procurement**

H1: There is significant impact of critical success factors (CSFs) processes factor in procurement efficiency

Table 4.22 shows that there is moderately strong positive correlation between Processes and Procurement Efficiency ( $p>0.01$ ). P values for first variable (Processes), 0.655 is greater than 0.01 but the *r* values (0.001)



indicate positive relationship. This can be concluded that processes still in positive relationship with procurement efficiency. This finding underscores the importance of effective processes in enhancing procurement efficiency.

### Relationship between Workforce and Procurement Efficiency

H2: There is significant impact of critical success factors (CSFs) workforce factor in procurement efficiency?

The result shows there is moderately strong positive correlation between Workforce and Procurement Efficiency ( $p > 0.01$ ). P values for first variable (Workforce), 0.657 is greater than 0.01 but the  $r$  values (0.001) indicate positive relationship. This can be concluded that processes still in positive relationship with procurement efficiency. This finding underscores the importance of effective processes in enhancing procurement efficiency.

### Relationship between Leadership and Procurement Efficiency

H3: There is a significant impact of critical success factors (CSFs) leadership factor in procurement efficiency?

Table 4.22 shows that there is moderately strong positive correlation between Leadership and Procurement Efficiency ( $p > 0.01$ ). P values for first variable (Leadership), 0.678 is greater than 0.01 but the  $r$  values (0.001) indicate positive relationship. This can be concluded that leadership still in positive relationship with procurement efficiency. This finding underscores the importance of effective processes in enhancing procurement efficiency.

### Relationship between Relationship and Procurement Efficiency

H4: There is a significant impact of critical success factors (CSFs) relationship factor in procurement efficiency?

The relationship between the variable "relationship" and procurement efficiency shows a statistically significant positive correlation. The Pearson coefficient of correlation ( $r$ ) is 0.769, indicating a strong positive relationship between the two variables. The p-value is 0.001, which is significant at the 0.01 level. This means that improvements in relationship management are strongly associated with higher levels of procurement efficiency.

### Relationship between Resources and Procurement Efficiency

H5: There is a significant impact of critical success factors (CSFs) resources in procurement efficiency?

The relationship between "resources" and procurement efficiency is statistically significant and positively correlated. The Pearson coefficient of correlation ( $r$ ) is 0.713, indicating a strong positive relationship between resources and procurement efficiency. The p-value is 0.001, which is significant at the 0.01 level, confirming that this relationship is unlikely to be due to random chance. Therefore, effective resource management is crucial for achieving higher procurement efficiency.

### Multiple Regression Analysis

A regression equation was estimated with procurement efficiency as the dependent variable, and processes, workforce, leadership, relationship and resources as the independent variables. Table 4.23 presents the summarized statistics of the estimated regression equation.

Table 4.22: Estimated Regression Equation

Variable	Coefficient	$t$ -value	$p$ -value
Processes	0.149	2.158	0.032*
Workforce	0.101	1.381	0.169
Leadership	0.175	2.671	0.008*

Relationship	0.329	5.071	0.001*
Resources	0.268	3.957	0.001*
F	90.634		0.001*
R <sup>2</sup>	0.689		

\*Significant at 0.001

The Multiple Regression Analysis examines the relationship between procurement efficiency (dependent variable) and five independent variables: processes, workforce, leadership, relationship, and resources. The findings reveal that the model is statistically significant, as indicated by an F-value of 90.634 and a p-value of 0.001. The R value of 0.689 suggests that 68.9% of the variance in procurement efficiency is explained by the independent variables, highlighting a strong model fit.

Among the predictors, relationships have the most significant positive impact on procurement efficiency (0.329). Resources also play a critical role, with a coefficient of (0.268) followed by leadership (0.175). Processes are significant with a coefficient of (0.149) albeit less influential. However, workforce (0.101) does not significantly contribute to the model, as its p-value exceeds the threshold of 0.05.

The analysis identifies relationships, resources, and leadership as the primary drivers of procurement efficiency, with processes also contributing positively. The workforce variable, while positively associated, is not statistically significant. These findings underscore the importance of prioritizing relationship management and resource allocation in improving procurement efficiency.

## CONCLUSION

This study aimed to investigate the impact of Critical Successes Factors (CSFs) on procurement efficiency in the Royal Malaysian Air Force (RMAF). The research involved 211 respondents from various ranks, including Captains, Majors, Lieutenants, Lieutenant Colonels, Corporals, and Sergeants. The majority were mid-level officers, with a smaller representation from lower-ranking personnel. The survey revealed a diverse workforce profile at RMAF Materiel Branch, with 33.2% having 6-10 years of experience and 21.8% having less than 5 years.

The majority of respondents come from various units within the RMAF, including 16 PTJs that make procurement activity. The Finance Department has the highest representation, with 22.7% of the sample. The Local Purchase Order (LPO) Department and the Contract Department account for 14.2% and 14.7%, respectively. The Stock Control Department contributes 10.4%, while the Storage Department and Transportation Department make up 7.6% and 6.2%, respectively. A notable portion of respondents, classified under "Others," represents 24.2%.

The correlation analysis result implies that H2 (workforce) with p values greater than 0.05 have not given a significant correlation toward procurement efficiency. However, it does not mean that workforce is less important to be executed in the organization. Correlation analysis results for H1 (processes), H3 (leadership), H4 (relationship), and H5 (resources) each represent a strong positive correlation toward procurement efficiency.

The study highlights the need to analyze risks that could put the organization in the RMAF at risk, whether local or global, as the RMAF is also involved in both domestic and international procurement. The successful outcomes demonstrated that respondents from Materiel Branch in RMAF are aware of the significance of disclosing any risks that arise during ongoing operations in order to prevent failure in the future.

The relationship between CSFs and management theory lies in how these factors provide a practical framework for applying theoretical concepts to achieve organizational goals effectively. CSFs embody these variables, representing the specific areas critical to achieving success in a given context. Processes align with scientific management principles, emphasizing efficiency, standardization, and optimization of workflows, while

workforce competency reflects the human relations school of management, emphasizing employee skills, training, and motivation. Leadership's critical role aligns with behavioral theories, emphasizing strategic vision, ethical conduct, and effective communication.

## REFERENCES

1. Akaranga, E. M. (2008). The Process and effects of Performance Contracting in Kenyan Public Sector. Alfredo Serpell and Ximena Ferrada. (2007). A Competency - Based Model for Construction Supervisors in Developing Countries. *Personnel Review* , 36 (4), 585-602.
2. Ali, A., Audi, M., Nisar, S., & Senturk, I. (2021). Determinants of Public Procurement Efficiency: A Comprehensive Study of Public Procurement Rules of Punjab, Pakistan.
3. Arvonen, J. & Pettersson, P. (2002). Leadership behaviours as predictors of cost and change effectiveness, *Scandinavian Journal of Management*, vol.18, pp.101- 112
4. Ausink, J.A., Baldwin, L.H., & Paul, C. (2004). Air Force Procurement Workforce Transformation: Lessons from the Commercial Sector.
5. Basheka, B. C. (2008). Procurement Planning and Accountability of Local Government Procurement Systems in Developing Countries: Evidence from Uganda. *Journal of Public Procurement*, 8 (3), 379-406.
6. Blanca, M.J., Arnau, J., López-Montiel, D., Bono, R., & Bendayan, R. (2013). Skewness and Kurtosis in Real Data Samples. *Methodology: European Journal of Research Methods for The Behavioral and Social Sciences*, 9, 78-84.
7. Bland, D.L. (1999). *Issues in Defence Management*. McGill-Queens University Press, Kingston, Canada.
8. Bougie, R. and Sekaran, U. (2016) *Research Methods for Business: A Skill-Building Approach*. 8th Edition, Wiley & Sons
9. Brammer, S., & Walker, H. (2011). Sustainable procurement in the public sector: an international comparative study. *International journal of operations & production management*, 31(4), 452-476.
10. Burki, U., & Buvik, A. (2010). Do relationship history and norms matter in overcoming inter-organisational difficulties in the procurement function? *International Journal of Procurement Management*, 3, 279-291.
11. Caldwell, N., & Bakker, E. (2017). Procurement process in the public sector: An international perspective. In *International handbook of public procurement* (pp. 427-442). Routledge.
12. Cârstea, G., un, O.P., & un, S.P. (2014). *QUALITY MANAGEMENT IN PROCUREMENT AND MANAGEMENT OF MATERIAL RESOURCES*.
13. Cristina, C. (2024). THE EFFICIENCY OF THE PUBLIC PROCUREMENT SYSTEM AND ITS IMPLICATIONS ON PUBLIC BUDGETS. *Journal of Public Administration, Finance & Law*, (31).
14. Davis, P. K. (2000). Defence planning in an era of uncertainty : East Asian issues. In Crawford, N.W., & Moon, C. (Eds.), *Emerging Threats, Force Structures, and the Role of Air Oower in Korea*. RAND, Santa Monica, Ca, pp. 25–49.
15. Field, A. (2018). *Discovering Statistic Using IBM SPSS Statistic*, 5th Edn. ed J. Seaman (Los Angeles, CA).
16. Fred Sollish MS, John Semanik. (2012). *The Procurement and Supply Manager's Desk*. New Jersey: Wiley.
17. Gilmore, S. (2021, February 25). It's Time to Ban the Buying of Made-in-Canada Warships. *Macleans*.
18. Gray, C. S. (2008). Coping with uncertainty: Dilemmas of defence planning. *Comp. Strategy*, 27: 324–331.
19. Grega, M., Orviská, M., Nemec, J., & Lawson, C.W. (2019). Factors Determining the Efficiency of Slovak Public Procurement. *NISPAcee Journal of Public Administration and Policy*, 12, 43 - 68.
20. <https://www.parlimen.gov.my/ipms/eps/2022-08-03/CMD.20.2022%20-% 20 CMD % 2020.2022.pdf> National audit chief report 2021 series 1.
21. Ibrahim, S. Z. (2021). Benefits e-procurement system. *Advances in Business Research International Journal*, 7(1), 142-149.
22. Ismail, A. M., Hasan, M. R., Clark, C., & Mohamed Sadique, R. (2018). Public sector procurement: the effectiveness of monitoring mechanism. *Asia-Pacific Management Accounting Journal (APMAJ)*, 13(2), 147-172.

23. Jaafar, M., & Radzi, N.S. (2012). Building procurement in a developing country: a comparison study between public and private sectors. *International Journal of Procurement Management*, 5, 608-626.
24. Kakwezi, P., & Nyeko, S. (2019). Procurement processes and performance: Efficiency and effectiveness of the procurement function. *International Journal of Social Sciences Management and Entrepreneurship (IJSSME)*, 3(1).
25. Kanepajs, E., & Kirikova, M. Centralized vs. Decentralized Procurement: A Literature. Kennedy, K., & Kiarie, D.M. (2015). INFLUENCE OF PROCUREMENT PRACTICES ON ORGANIZATION PERFORMANCE IN PRIVATE SECTOR IN KENYA . : A CASE STUDY OF GUARANTY TRUST BANK KENYA LTD.
26. Khairul Naim A., Siwar C. (2012). Transformation of government procurement in Malaysia: Directions and initiatives. 5th International Public Procurement Conference, pp. 17-19
27. Kiage, J. O. (2013). Factors affecting procurement performance: A case of ministry of energy. *International journal of business and commerce*, 3(1), 54-70.
28. Knudsen, D. (1999). Procurement Performance Measurement System: Focusing on the Swedish Public Sector. Retrieved July 17, 2008, from Lund Institute of Technology web site: [http://www.tlog.lth.se/documents/publications/Lic\\_Daniel\\_Knudsen.PDF](http://www.tlog.lth.se/documents/publications/Lic_Daniel_Knudsen.PDF)
- Koontz, H.D. (1961). The Management Theory Jungle. *Academy of Management Journal*, 4, 174-188.
29. Kumar, A., Nair, A.N., & Piecha, J. (2015). Measuring efficiency in international public procurement. *Journal of Public Procurement*, 15, 365-389.
30. Laraib, M., Asim, M., & Manzoor, S. (2021). A Correlation between Process Management and Procurement Efficiency in Manufacturing Sector. *European Journal of Business and Management Research*, 6(2), 187-192.
31. Liker, J. & Choi, T. 2004. Building Deep Supplier Relationships. *Harvard Business Review* December 2004, 4.
32. Mamiro, R. G. (2010). Value for Money, The Limping Pillar in Public Procurement. *Tanzania Procurement Journal* , 4 -5.
33. Mardale, F. E. (2016). Key factors of influence in the public procurement process. In *International Conference Knowledge-Based Organization (Vol. 22, No. 2, pp. 263-272)*.
34. Markowski, S., & Wylie, R. In Search of Efficient and Effective Defence Procurement: An Australian Case Study. *IPPC4 Proceedings*, 25.
35. Minghat, A. D., & Hanudin, W. H. A. W. (2022). Evaluate Factors That Influence Procurement Performance in the Malaysian Army. *Journal of Positive School Psychology*, 6(2), 3451-3454.
36. Migone, A., Howlett, A., & Howlett, M. (2023). Procurement and politics: Strategies of defence acquisition in Canada and Australia (p. 156). Springer Nature.
37. Mncwango, B.T., & Ramdass, K. (2023). Evaluating the Efficiency of a Procurement Process at An Institution of Higher Learning. *Proceedings of the International Conference on Industrial Engineering and Operations Management*.
38. Mogere, K.M., & OTUYAH (PhD), D.W. (2020). LEVERAGING PROCUREMENT PERFORMANCE THROUGH EFFECTIVE SUPPLIER RELATIONSHIP MANAGEMENT: A CRITICAL REVIEW OF LITERATURE. *Strategic Journal of Business & Change Management*.
39. Montgomery, E.B. (2009). Defence Planning for the Long Haul: Scenarios, Operational Concepts, and the Future Security Environment. Available online at: <http://csbaonline.org/publications/2010/01/defence-planning-for-the-long-haul/> (Last access date: 27 June 2018).
40. Mrope, N.P., Namusonge, G.S., & Iravo, M.E. (2017). Private Sector Involvement in Public Procurement Opportunities: An Assessment of the Extent and Effect in Tanzanian Public Entities. *European Journal of Business and Management*, 9, 105-112.
41. Munzhedzi, P. H. (2016). South African public sector procurement and corruption: Inseparable twins?. *Journal of Transport and Supply Chain Management*, 10(1), 1-8.
42. Okinyi, T. O., & Muturi, W. (2016). Factors affecting efficiency of procurement in public institutions: a case of public entities in Homabay County. *Int. J. Social Sci. Inf. Technol*, 2(2), 1-14.
43. Oliveira, A., Oliveira, T.A., & Seijas-Macías, A. (2016). Evaluation of Kurtosis into the product of two normally distributed variables.



44. PPDA. (2007). Discussion Paper on Amendment to the Act. Kampala: PPDA Authority. PPDA. (2008). Procurement Capacity Strengthening Initiative in Uganda: An Anti Corruption Approach. 3rd OECD-DAC Joint Venture on Procurement. Arusha, Tanzania: PPDA.
45. Pujoyono, S., Akbar, B., Djaenuri, A., & Ilham, M. (2019). Effects of Leadership, Organizational Culture, and Competence on Procurement of Government Goods and Services at the Directorate of Prevention and Control of Direct Communicable Diseases of the Ministry of Health of the Republic of Indonesia.
46. Ramli, M. A., & Aziz, N. (2023). Factors Affecting the Likelihood of Fraudulent in Procurement Process: the Case of Royal Malaysian Air Force. *Accounting and Finance Research*, 12(3), 1-57.
47. Rasanjani, P.M., Sachini, W.W., Sandamali, G.A., & Weerabahu, W.M. (2019). A Strategic Relationship Building through Procurement 4.0: An Analysis from the Apparel Industry.
48. Rendon, R. G. (2012). Defence procurement: An empirical analysis of critical success factors. *Charting a course in public procurement innovation and knowledge sharing*, 174-208.
49. Richter, A. (2013). A Defence Renaissance? The Canadian Conservative Government and the Military. *American Review of Canadian Studies*, 43(3), 424-450.
50. Roche, Y. S. B., & Chur-Hansen, A. (2019). Knowledge, skills, and attitudes of psychologists working with persons with vision impairment. *Disability and Rehabilitation*, 0(0)
51. Sa'adah, N., & Arokiasamy, L. (2023). A qualitative study on the urgency of attitude in designing effective procurement certification training. *The Journal of High Technology Management Research*, 34(2), 100472.
52. Schotanus, F., Telgen, J., & de Boer, L. (2010). "Critical Success Factors for Managing Purchasing Groups." *Journal of Purchasing & Supply Management*, 16: 51-60.
53. Sekaran, U., & Bougie, R. (2019). *Research Methods For Business. A Skill Building Approach* (8th ed.). Wiley.
54. Selamat, M.H., & Elwahj, A.S. (2018). Enhancing procurement decisions through effective leadership: a case of Libyan Ministry of Defence. *Pressacademia*.
55. Sheffi, Yossi and Peter Klaus (1997). "Logistics at Large: Jumping the Barriers of the Logistics Function," James M. Masters, ed., *Proceedings of the Twenty-Sixth Annual Transportation and Logistics Educators Conference*, Council of Logistics Management, pp. 1-26.
56. Shiundu, D., & Rotich, G. (2014). Factors influencing efficiency in procurement systems among public institutions: A case of City Council of Nairobi. *International Academic Journals*, 1(1), 79-96.
57. Skackauskiene, I. (2022). Research on management theory: A development review and bibliometric analysis. *Problems and Perspectives in Management*.
58. Snider, K.F. (2006). PROCUREMENT LEADERSHIP: FROM MEANS TO ENDS. *Journal of Public Procurement*, 6, 274-294.
59. Subramaniam, A., Sulaiman, A., & Loong, W. W. (2018). Defence Spending in an Era of Uncertainty and Budgetary Constraints. *Defence Science and Technology Technical Bulletin*, 11, 331-37.
60. Taylor, C. & Waldman, T. (2008). *British Defence Policy Since 1997: Background Issues*. Research Paper 08/58, House of Commons Library, London.
61. TALPIG (PONCU), C.C. (2024). THE EFFICIENCY OF THE PUBLIC PROCUREMENT SYSTEM AND ITS IMPLICATIONS ON PUBLIC BUDGETS. *Journal of Public Administration, Finance and Law*.
62. Thai, K.V. (2001). Public procurement re-examined. *Journal of Public Procurement*, 1(1), 9-50.
63. Trent, R. J., & Monczka, R. M. (1994). "Effective Cross-Functional Sourcing Teams: Critical Success Factors." *International Journal of Purchasing and Materials Management*, 30 (4): 3-11.
64. Van Weele, A. J. (2006). *Purchasing & Supply Chain Management: Analysis, Strategy, Planning and Practice* (4th ed.). Australia: Thomson.
65. Vorosmarty, G., & Tátrai, T. (2019). Green supply management in the public and private sector in Hungary. *International Journal of Procurement Management*.
66. White, C. (2015). Stronger grip on overheads and increased productivity could save NHS hospitals £5bn a year. *BMJ: British Medical Journal*, 350.
67. Whitney, D. R. (1972). *The questionnaire as a data source*. Iowa City: University of Iowa. Evaluation and Examination Service.
68. Yukl, G. (2006). *Leadership in organisations*, London: Prentice Hall.