

**FACTORS AFFECTING CUSTOMER
ACCEPTANCE OF PROFESSIONAL
MEMBERSHIP: A CASE OF MALAYSIA'S
AVIATION SECTOR**

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FACTORS AFFECTING CUSTOMER ACCEPTANCE OF
PROFESSIONAL MEMBERSHIP: A CASE OF
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ABSTRACT

In today's competitive aviation market, customer acceptance is pivotal for the success of products and services, given the industry's stringent standards and regulatory demands. This is particularly critical for aviation professionals and organizations involved with the Board of Engineers Malaysia (BEM). Understanding and influencing customer attitudes and behaviors can significantly impact outcomes such as sales performance, industry reputation, and customer loyalty. High levels of acceptance correlate with increased sales and enhanced industry reputation, while poor acceptance can lead to diminished sales, reputational damage, and financial setbacks (Rogers, 2020). Customer attitudes in aviation reflect the perceptions of both industry professionals and clients regarding the quality and reliability of aviation products and services. For example, an aviation company that consistently delivers high-quality, reliable aircraft components is likely to establish a strong reputation among customers and regulatory bodies (Zeithaml et al., 2021). This study explores the factors influencing the decision of Licensed Aircraft Maintenance Engineers (LAEs) licensed by the Civil Aviation Authority of Malaysia (CAAM) to register with BEM. In this context, LAEs are considered "customers" of BEM. Utilizing the Theory of Planned Behavior (TPB), the research investigates the acceptance levels of unregistered LAEs toward BEM membership, particularly within aircraft maintenance organizations. Key factors examined include customer attitudes, social norms, perceived behavioral control, and institutional support. Employing a quantitative methodology, the study gathered data through self-administered questionnaires from unregistered LAEs, with 170 responses deemed usable for analysis using SPSS software version 29. The findings indicate significant relationships between engineers' attitudes, subjective norms, and perceived behavioral control in relation to BEM membership acceptance, with institutional support moderating these relationships. Moreover, age and years of professional experience were found to significantly affect LAEs' attitudes toward BEM membership. The study provides evidence-based insights into the factors influencing statutory registration among LAEs, offering practical implications for LAEs, aircraft maintenance organizations, regulatory authorities, and policymakers. It underscores the importance of engaging regulatory bodies, fostering collaborations, and pursuing continuous improvements within the aircraft maintenance industry. The study's novelty lies in its integration of institutional support as a moderator, offering new theoretical insights and practical implications for improving LAEs' statutory registration through enhanced institutional backing and policy reforms in the aviation industry.

Keywords: Customer acceptance, attitude, social norms, behavioural control, institutional support, Licensed Aircraft Maintenance Engineers (LAEs), Theory of Planned Behaviour (TPB), Board of Engineers Malaysia (BEM)

APPROVAL

This is to certify that this thesis conforms to acceptable standards of scholarly presentation and is fully adequate, in quality and scope, for the fulfilment of the requirements for the Doctor of Business Administration.

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29 August 2024

DECLARATION

I hereby declare that the thesis submitted in fulfilment of the DBA degree is my own work and that all contributions from any other persons or sources are properly and duly cited. I further declare that the material has not been submitted either in whole or in part, for a degree at this or any other university. In making this declaration, I understand and acknowledge any breaches in this declaration constitute academic misconduct, which may result in my expulsion from the programme and/or exclusion from the award of the degree.

Name: Liew Chee Leong



Signature of Candidate:

Date: 29 August 2024

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LIST OF ABBREVIATIONS

AML	Aircraft Maintenance License issued by CAAM or DCA
BEM	Board of Engineers Malaysia established under Registration of Engineers Act 138 (1969)
CAAM	Civil Aviation Authority of Malaysia established under parliament Act 788 (2017) is the regulator of aviation operation in Malaysia
CPD	Continuous Professional Development program for engineers to keep abreast with current technology and policies in the industry
COC	Code of Conduct issued by BEM
DCA	Department of Civil Aviation, Malaysia the predecessor of CAAM was the regulator of aviation operation in Malaysia
LAE	Unregistered Licensed Aircraft Maintenance Engineer holding an AML issued by CAAM
REA 138	Registration of Engineers Act 138 (Amendment 2015)

CHAPTER 1

INTRODUCTION

1.0 Introduction

The worldwide aviation sector is an intricate and fiercely competitive ecosystem, serving as a cornerstone for global connectivity and economic advancement (Navigating Turbulence: The Impact of Global Economics on the Aviation Industry, 2023). Globally, the aviation industry has witnessed substantial growth, forming a sophisticated network involving airlines, regulatory bodies, and skilled professionals. Statistics from the International Air Transport Association (IATA) reveal a consistent robust growth, with a 5.5% compound annual growth rate in global passenger traffic over the past two decades (IATA, 2022), highlighting its pivotal role in fostering global trade, tourism, and economic development.

In Malaysia, the aviation industry plays a pivotal role in the nation's economic prosperity, strategically positioning itself as a key player in the regional and international aviation landscape (Malaysian aviation, aerospace industry set to soar higher, 2023). One of the critical aspects of service quality of the airline services is compliance of security and standards, which could be achieved by possessing highly qualified airline professionals. These airline professionals known as License Aircraft Engineer (LAE). LAEs are crucial to the industry, responsible for maintaining aircraft airworthiness and contributing significantly to passenger service quality by meticulously conducting maintenance and repairs (Aircraft Maintenance Engineer, 2023).

However, a significant challenge in the Malaysian aviation sector lies in the low statutory registration rate of LAEs with the Board of Engineers Malaysia (BEM),

Despite CAAM's recognition of AML qualifications under the REA 138, the low registration (New Straits Times, 2023) raises concerns about engineer's professional standardization and oversight of professional COC adherence and CPD. The recognition of AML qualifications by the CAAM under the REA 138 represents a significant step toward standardizing the professional qualifications of engineers in the field of aircraft maintenance (Abd. Rahim, 2020). However, despite this formal recognition, a conspicuous and persistent issue has emerged: the low statutory registration rate of engineers possessing AML qualifications. This situation raises critical concerns regarding the standardization of professional practices, the effectiveness of oversight in ensuring adherence to a professional code of conduct within the industry.

1.1 Background of the study

The global aviation industry has experienced remarkable growth (IATA, 2022) and transformative development, solidifying its status as a cornerstone of international commerce and connectivity. IATA reports a compounding annual growth rate of 5.5% in global passenger traffic over the past two decades, illustrating the industry's resilience and its significant role in facilitating global trade, tourism, and economic development (IATA, 2021). This expansion has led to a complex network that unites airlines, regulatory bodies, and skilled professionals (IATA, 2023), forming the backbone of a sophisticated global transportation system.

In tandem with this global trajectory, Malaysia has strategically positioned itself as a key player in the aviation landscape (MIDA, 2021). Geopolitically situated as a hub in Southeast Asia, the nation has embraced substantial growth and development in its aviation sector. The CAAM plays a pivotal role in overseeing aviation industry regulatory frameworks, ensuring adherence to stringent international

safety standards, and fostering a secure and efficient aviation environment within the country (CAAM, 2024).

The aviation industry's global growth has been a transformative force, not only shaping the movement of people and goods but also acting as a catalyst for technological advancement and economic development (ICAO, 2024). The evolution of aviation technology, coupled with the expansion of air travel services, underscores the industry's pivotal role in driving globalization and connectivity on a worldwide scale (Husary, 2021). Within the Malaysian context, this global growth narrative finds resonance, exemplified by the nation's commitment to infrastructure development and strategic positioning (MIDA, 2021). Malaysia boasts a burgeoning aviation sector marked by increasing numbers of airports, air carriers, and air traffic movements (MAVCOM, 2023). This growth reflects Malaysia's dedication to fostering a dynamic and competitive aviation industry that aligns with global standards.

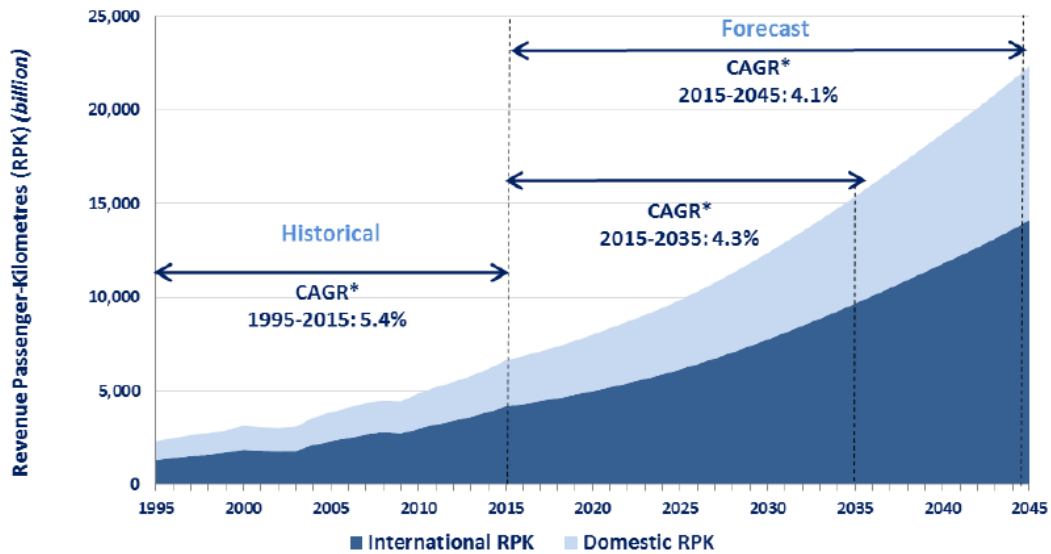
Central to the aviation industry's success are Licensed Aircraft Maintenance Engineers (LAEs), tasked with ensuring the airworthiness of aircraft and contributing substantially to the safety and quality of air travel (CAAM, 2024). However, the effectiveness of these professionals is contingent on a robust regulatory framework that validates their qualifications and competence (Aviation Career Hub, 2023).

Despite the Malaysia industry's global success story (Koen, 2017), challenges persist, notably in the realm of statutory regulatory compliance and professional engineers registration (BERNAMA, 2023). This study focusses in on a critical facet of this challenge within Malaysia, specifically addressing the low registration rate of LAEs (Leong, 2019) with the Board of Engineers Malaysia (BEM). The standardization of engineers' competence is crucial for ensuring uniformity and maintaining high standards across the engineering profession. Under the Regulatory

Engineering Act (REA) 2015, it is essential that engineers receive equal recognition, similar to the acknowledgment afforded to other engineering professionals. This uniform recognition can help in standardizing practices and ensuring that all engineers meet consistent competence levels, ultimately leading to a more reliable and effective engineering sector. One of the significant implications of this standardization is its impact on industry safety. Engineers who are not registered under the REA may lack adherence to a professional code of conduct. This absence of formal registration could result in diminished accountability and oversight, raising concerns about the adherence to safety protocols and ethical standards. Consequently, unregistered engineers might inadvertently compromise industry safety, highlighting the need for stringent registration and adherence to professional guidelines. Furthermore, the quality benchmarks for engineering practice are critically influenced by continuous professional development (CPD). The lack of CPD seminars, talks, and other professional development opportunities can adversely affect the quality of practice among Licensed Aircraft Engineers (LAEs). Continuous learning and updating of skills are vital for maintaining high standards in engineering practice. Without these opportunities, the quality of work may decline, undermining the reliability and safety of engineering outputs.

1.1.1 Development of the Aviation Industry

Figure 1.1: Future of aviation



Sources: *International Civil Aviation Organization, 2022*

From figure 1.1 (ICAO, *Global Air Transport Outlook to 2032 and Trends to 2042*, 2017), it has shown that the magnitude of air traffic is astonishing, with over 400 departures per hour for scheduled commercial flights alone. Air transport plays a pivotal role in the social, economic development, and sustainability of regions worldwide (IATA, *Global Outlook for Air Transport, Times of Turbulence*, 2022).

The air transport industry is on an expansive trajectory, promising a bright future for aviation. In 2017, global airlines transported approximately 4.1 billion passengers and 56 million tons of freight through 37 million commercial flights. Daily, airplanes ferry over 10 million passengers and goods valued at around USD 18 billion (IATA, 2024-Release, 2024). This underscores aviation's substantial economic impact, representing 3.5% of the global GDP (2.7 trillion US dollars) and generating 65 million jobs worldwide (ICAO, *Future of Aviation*, 2024). As the singular rapid worldwide transportation network, aviation fuels economic growth, job creation, and facilitates

international trade and tourism. Moreover, it is acknowledged by the international community as a vital enabler in achieving the UN Sustainable Development Goals. Projections indicate that air transport demand will grow at an average rate of 4.3% per annum over the next two decades (ICAO, Future of Aviation, 2024).

If this growth trajectory materializes by 2036, the air transport industry is anticipated to contribute 15.5 million direct jobs and \$1.5 trillion to the world economy. Factoring in the impacts of global tourism, these figures could escalate to an impressive 97.8 million jobs and \$5.7 trillion in GDP (ICAO, Future of Aviation, 2024). By the mid-2030s, an estimated minimum of 200,000 flights per day is expected globally, envisioning a future with twice the current air traffic. (Sources: ICAO, UN Sustainable Development Goals)

1.1.2 An Overview of the Malaysian Aviation Industry

The aviation industry plays a crucial role in Malaysia's economic development and global connectivity. With a diverse range of airlines, airports and aviation-related services, Malaysia's aviation sector has witnessed substantial growth in recent years (CAAM, Malaysia: A Leading Aviation Nation in the Asia Pacific Region, 2021).

The Malaysian aviation sector has also witnessed substantial growth in passenger traffic. In 2019, Malaysia recorded over 100 million passenger movements, with Kuala Lumpur International Airport (KLIA) being one of the busiest airports in the Asia-Pacific region (Malaysia Airports, 2020). This growth is a testament to Malaysia's strategic location, excellent connectivity and the expansion of airlines such as Malaysia Airlines, AirAsia and Batik Air (formerly known as Malindo Air). Table 1.0 presents a comprehensive overview of the annual operating statistics of Malaysian carriers, providing valuable insights into the evolving landscape of the aviation

industry in the country. The data, sourced from the Malaysian Aviation Commission in 2023, spans over a decade and encompasses key performance indicators.

The Annual Operating Statistics of Malaysian carriers provide valuable insights into the performance and trends within the country's aviation sector. Table 1.0 presents key metrics spanning from 2010 to 2021, including Available Seat-Kilometres (ASK), Revenue Passenger-Kilometres (RPK), the number of passengers carried, aircraft movements, and cargo movements. The data reveals several notable trends over the years. For instance, there is a discernible growth in metrics such as RPK, the number of passengers carried, and aircraft movements from 2010 to 2019, indicating a period of expansion and increasing demand within the Malaysian aviation industry. However, a significant downturn is observed in 2020 and 2021, attributed to the global COVID-19 pandemic, which severely impacted air travel worldwide.

Table 1.1: Table of Malaysian carriers' annual operating statistics

Year	Available Seat-Kilometre (ASK) [mil]	Revenue Passenger - Kilometre (RPK) [mil]	Number of Passengers Carried [mil]	Number of Aircraft Movements	Cargo Movements [tonne]
2010	87,599	66,719	31.09	628,337	922,710
2011	96,720	74,911	33.82	675,047	909,663
2012	94,364	73,502	35.65	678,051	898,572
2013	139,483	89,339	42.99	775,854	916,920
2014	158,821	97,190	28.59	834,538	1,007,374
2015	116,770	87,210	38.70	857,438	1,001,276
2016	123,219	97,275	52.43	868,677	908,759
2017	135,590	110,203	58.64	907,436	997,172
2018	141,102	112,516	59.95	925,926	1,010,004
2019	134,630	110,146	59.90	958,456	986,906
2020	35,875	25,018	15.65	373,327	820,901
2021	7,832	4,601	5.31	248,595	1,070,838

Sources: Malaysian Aviation Commission, 2023

The metric of Available Seat-Kilometre (ASK) serves as an indicator of the total passenger-carrying capacity provided by Malaysian carriers each year. In 2010, the figure stood at 87,599 million, steadily increasing to 141,102 million in 2018 before experiencing a notable decline to 35,875 million in 2020 and further dropping to 7,832 million in 2021. This substantial variation reflects the dynamic nature of the industry, influenced by factors such as global events, economic conditions, and public health crises.

Revenue Passenger-Kilometre (RPK) measures the actual passenger traffic, and the table illustrates a consistent upward trend from 66,719 million in 2010 to a peak of 112,516 million in 2018. The subsequent years witnessed fluctuations, notably in 2020 and 2021, aligning with the unprecedented challenges posed by the COVID-19 pandemic. The Number of Passengers Carried, a pivotal metric indicating the scale of aviation services, reveals an overall increase from 31.09 million in 2010 to 59.90 million in 2019. However, the impact of the pandemic is evident in the sharp decline to 15.65 million in 2020 and a further reduction to 5.31 million in 2021.

The Number of Aircraft Movements signifies the total count of flights operated by Malaysian carriers. The data demonstrates a consistent growth trajectory, reaching 907,436 movements in 2017. The subsequent years experienced slight fluctuations, emphasizing the resilience and adaptability of the industry. Cargo Movements, measured in tonnes, show a steady increase from 922,710 tonnes in 2010 to 1,070,838 tonnes in 2021. This growth underscores the significance of air cargo in supporting trade and logistics, even during challenging periods.

In summary, the data from Table 1.0 underscores the resilience, adaptability, and challenges faced by Malaysian carriers over the years. The substantial variations in key metrics highlight the industry's responsiveness to external factors, emphasizing

the need for continuous monitoring and strategic planning within the dynamic aviation landscape.

1.1.3 CAAM Licensed Aircraft Maintenance Engineers (LAE) in Malaysia

The Civil Aviation Authority of Malaysia (CAAM), formerly known as the Department of Civil Aviation (DCA), is the regulatory body entrusted with ensuring the safety, security, and sustainability of civil aviation in Malaysia (CAAM, About Us, 2024). Established under the Civil Aviation Authority of Malaysia Act 2017, CAAM plays a pivotal role in enforcing regulatory standards, overseeing aviation activities, and fostering continuous improvement within the aviation industry.

CAAM's multifaceted responsibilities encompass the certification of aviation personnel, including LAEs (CAAM, Aircraft Maintenance Engineer, 2024). Through stringent regulations and adherence to international safety standards, CAAM contributes significantly to the development and maintenance of a robust aviation infrastructure in Malaysia. The regulatory framework provided by CAAM ensures that aviation professionals meet the highest standards of competence, contributing to the overall safety and reliability of the aviation sector (CAAM, Safety Reporting, 2024).

Licensed Aircraft Maintenance Engineers (LAEs) in Malaysia: Certifier of Airworthiness

Licensed Aircraft Maintenance Engineers (LAEs) form an integral part of the aviation industry, serving as custodians of aircraft airworthiness. These professionals play a crucial role in ensuring the safety, reliability, and operational efficiency of aircraft (CAAM, Aircraft Maintenance Engineer, 2024). Licensed by CAAM, LAEs are entrusted with the responsibility of conducting thorough inspections, maintenance, and repairs on aircraft, adhering to stringent regulations and industry best practices

(Harun, 2024). The roles of LAEs extend beyond routine maintenance, encompassing the diagnosis and rectification of technical issues, conducting necessary inspections, and ensuring compliance with airworthiness standards set by CAAM (CAAM, Aircraft Maintenance Engineer, 2024). Their meticulous work is essential for preventing potential safety hazards and maintaining the overall integrity of aircraft systems (APR, 2024).

CAAM's relationship with LAEs is characterized by a regulatory framework that ensures the competence of these aviation professionals (CAAM, CAD 1 - Personnel Licensing, 2022). The authority issues and oversees the maintenance of licenses for LAEs, enforcing strict standards to guarantee that only qualified individuals are entrusted with the critical responsibility of maintaining aircraft airworthiness (CAAM, CAD1801-Aircraft Maintenance License Part 66, 2022). The regulatory oversight provided by CAAM extends to the training requirements (CAAM, CAD 1821 - Maintenance Training Organization Approval, 2022) of the LAEs. This involves staying abreast of technological advancements, participating in recurrent training programs, and adhering to evolving industry standards. CAAM, as the custodian of aviation safety, acts as a partner in the growth of LAEs, fostering an environment where the workforce is equipped with the necessary skills and knowledge to navigate the complexities of modern aircraft maintenance (CAAM, CAGM 1801 - Aircraft Maintenance License, 2022).

CAAM's role in regulating and overseeing the aviation industry in Malaysia is pivotal to ensuring the highest standards of safety and expertise (CAAM, 2024). Licensed Aircraft Maintenance Engineers, licensed and monitored by CAAM, stand as guardians of airworthiness, contributing to the industry's overall safety and reliability. The synergy between CAAM and LAEs reflects a commitment to

excellence and continuous improvement within Malaysia's aviation landscape (CAAM, 2024).

LAEs has been part of the Malaysian aviation industry since 1947 during the British era (Malaysia Airlines, 2023). The conventional engineers such as the civil, electrical and mechanical engineers had been in the Malaysian systems during the British days and are professionally recognized by the engineering council in United Kingdom. However, the LAEs are not part of the systems of conventional engineers under the BEM. In another words, there was no statutory registration provision for the LAEs in the Malaysian system even though the licensing system is similar to the CAA aircraft maintenance engineer licensing system. The Board of Engineers Malaysia (BEM) which was established in 1972 did not recognize the LAEs until the year 2018.

1.1.4 Board of Engineers Malaysia (BEM): Statutory Regulatory Body of Professional Standards

BEM is a statutory regulatory body established under the Registration of Engineers Act 1967. As the authoritative entity overseeing the engineering profession in Malaysia, BEM plays a pivotal role in ensuring that engineering practitioners adhere to the highest standards, code of conduct and continuous professional development. BEM's mandate extends to the statutory registration and code of conduct regulation of engineers, including LAEs, to uphold the integrity and safety of engineering practices within the country effective 2018 onwards.

The Registration of Engineers Act 1967 empowers BEM to regulate the engineering profession, safeguarding public interests and ensuring the competence and ethical conduct of engineers. BEM's jurisdiction encompasses various engineering disciplines, including aerospace engineering, the field under which LAEs operate. The Act empowers BEM to set and enforce standards for statutory registration, code of