FACTORS INFLUENCING BEHAVIORAL INTENTION TO USE COMPUTERIZED SYSTEM AMONG EMPLOYEES IN A SEMICONDUCTOR COMPANY IN KULIM, KEDAH.

PAVITHIRA A/P SABEHS KUMAR

MASTER OF SCIENCE (MANAGEMENT)
UNIVERSITI UTARA MALAYSIA
FEBRUARY 2026

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By

PAVITHIRA A/P SABEHS KUMAR

Thesis submitted to
School of Business Management,
Universiti Utara Malaysia,
in Partial Fulfillment of the Requirement for the Master of Sciences (Management)

Pusat Pengajian Pengurusan Perniagaan

SCHOOL OF BUSINESS MANAGEMENT

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ABSTRACT

The rapid digitalisation of manufacturing under Industry 4.0 has introduced computerised monitoring system to enhance efficiency, traceability, and sustainability. In this context, the semiconductor company in Kulim, Kedah implemented the computerized system to automated lid tracking and reduce e-waste. However, the success of such systems depends largely on user acceptance, which remains a critical challenge. This study aims to examine the behavioural intention of employees to adopt the system by integrating constructs from the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). Specifically, the study investigated the influence of perceived usefulness, perceived ease of use, performance expectancy, effort expectancy, social influence, and facilitating conditions on employees' behavioural intention. A quantitative, cross-sectional design was employees' using structured self -administered questionnaires distributed to 169 employees directly interacting with the system. Reliability was verified through pilot testing and Cronbach's alpha, while hypotheses were tested using descriptive statistics, correlation, and multiple regression analysis in SPSS. The findings revealed that all the six independent variables significantly influenced behavioural intention. Social influence demonstrated the strongest correlation, underscoring the role of managerial and peer encouragement in system adoption. Performance expectancy, and effort expectancy also showed strong positive relationship. The study concludes that improving usability, providing training, and ensuring technical support are essential to enhance acceptance. Management involvement and peer motivation are critical for sustaining adoption, while future research should expand to other semiconductor plant and employ longitudinal designs.

Keywords: Behavioral intention; Computerised system adoption; Technology Acceptance Model (TAM); Unified Theory of Acceptance and Use of Technology (UTAUT); Semiconductor manufacturing.

ABSTRAK

Pendigitalan dalam sektorr pembuatan di bawah kerangka Industri 4.0 telah memperkenalkan system pemantauan berkomputer untuk meningkatkan kecekapan, kebolehkesanan dan kelestarian. Dalam konteks ini, syarikat semikonduktor di Kulim, Kedah telah melaksanakan *Computerized system* bagi mengautomasikan penjejakan penutup dan mengurangkan e-sisa. Walau bagaimanapun, kejayaan system sebegini aman bergantunf kepada penerimaan pengguna, yang kekal sebagi cabaran kritikal. Kajian ini bertujuan untuk meneliti niat tingkah laku pekerja dalam mengguna pakai system tersebut dengan menggabungkan konstruk daripasa *Technology Acceptance Model (TAM) dan Unified Theory Acceptance and Use of Technology (UTAUT.* Secara khusus, kajian ini menilai pengaruh persepsi kegunaan, persepsi kemudahan penggunaan, jangkaan prestasi, jangkaan usaha, pengaruh sosial dan keadaan pemuda terhad niat tingkah laku pekerja. Reka bentu kajian adalah kuantitatif dan keratan rentas, menggunakan soal selidik berstruktur yang berinterkasi secara langsung dengan system. Kebolehpercayaan disahkan melalui kajian rintis dan ujian Cronbach alpha, manakala hipotesis diuji menggunakan statistic deskriptif, analisis korelasi dan regresi berganda melalui SPSS. Dapatan menunjukkan semua enam pemboleh ubah bebas mempunyai pengaruh signifikan terhadap niat tingkah laku. Pengaruh social menunjukkan korelesai paling tinggi, menekankan peranan galakan pengurus dan rakan sekerja dalam penerimaan system. Jangkaan prestasi dan jangkaan usaha juga mununjukkan hubungan positif yang kukuh. Kajian ini menyimpulkan bahawa penambahbaikan kebolehgunaan, Latihan berterusan dan sokongan teknikal adalah penting untuk meningkatkan penerimaan. Penglibatan pengurusan dan motivasi rakan sekerja adalah kritikal untuk mengkalkan penggunaan, manakala kajian masa depan perlu diperluas ke kilang semikonduktor lain dengan reka bentuk longitudinal.

Kata kunci: Niat tingkah laku; Penerimaan system berkomputer; *Technology Acceptance Model (TAM); Unified Theory of Acceptance and Use of Technology (UTAUT*); Pembuatan semikonduktor

ACKNOWLEDGEMENT

With folded hands, I bow in gratitude to the Almighty for blessing me with strength, perseverance, and clarity of thought throughout this academic journey. This thesis is the result of not only my own efforts but also the support and encouragement of many wonderful people around me.

First and foremost, I express my heartfelt thanks to both my supervisors, Dr Norsharina Binti Zabidi and Dr Siti Hawa Binti Harith, for their invaluable guidance, patience, and constructive feedback. Their encouragement and wisdom have been instrumental in shaping the direction of my research and in helping me overcome challenges along the way.

I am deeply grateful to my parents, who have been my pillars of strength. Their unconditional love, sacrifices, and constant motivation have inspired me to pursue higher education and to remain determined even during difficult times. My sincere thanks also go to my siblings and extended family, who have always believed in me and celebrated every small achievement.

A special note of appreciation goes to my boyfriend, who stood by me with encouragement, discussion, and laughter that made this journey less daunting.

Finally, I acknowledge the support of the university administration and all those who directly or indirectly contributed to the completion of this study.

This accomplishment is not mine alone; it belongs to everyone who has been part of my roller coaster journey.

Table of Contents

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

TAM	Technology Acceptance Model
PEOU	Perceived Ease of Use
PU	Perceived Usefulness
EE	Effort Expectancy
UTAUT	Unified Theory of Acceptance and Use of Technology

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Digitization has become a key element of Industry 4.0 in the manufacturing sector, making operations more efficient, traceable, and sustainable. According to McKinsey (2021), digitising can boost productivity by 15-30 percent, reduce machine downtime, and improve end-product quality by up to 20 percent. Today, technologies such as IoT applications, automated tracking, and real-time analysis are essential for maintaining competitiveness. The adoption of digital technology has significantly impacted the industry, both globally and in Malaysia. To start with, it enhances efficiency and productivity.

According to Malaysia Digital Economy Corporation (MDEC), local small and medium-sized enterprises (SMEs) have seen productivity increases of up to 60 percent and operational cost reductions of 20-30 percent through digitalisation. This includes adopting solutions like cloud-based accounting services and online marketplaces (MDEC, 2025). For instance, Amazon employs advanced analytics, robotics, and cloud computing to streamline logistics, significantly reducing delivery times and stock inaccuracies (Amazon, 2025).

Additionally, digital solutions such as digital payment systems and enterprise resource planning (ERP) software help SMEs cut paper-based operations and manual labor, reducing operational costs by around 25 percent (Jaish et al., 2023). An example is Mydin, a major Malaysian retail chain, which has implemented a centralized data and logistics management system, resulting in substantial savings in stock management and data distribution logistics (Itnews, 2025).

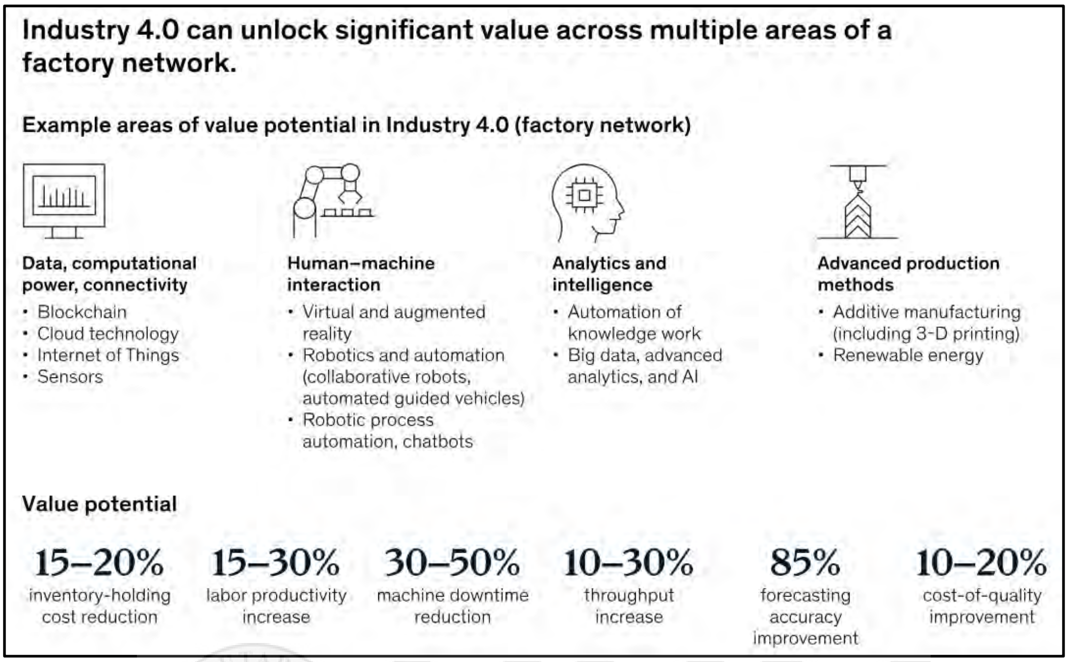

Figure 1.1:
Effect of Industry 4.0 on organisations
Source: McKinsey, 2022

In line with these global trends, the semiconductor company is undertaking a computerisation initiative with a computerized system to promote tracking of lids and minimise the use of expired lids, thereby helping to reduce e-waste. The system automates lid time tracking, replacing previously manual methods (Khan & Ahmad, 2022). However, such systems are largely dependent on the acceptance of various user groups for them to work efficiently.

Behavioral intention is a central construct in technology adoption research. It refers to an individual's conscious plan or willingness to perform a behavior in the future (Ajzen, 2005). In the context of digital systems, behavioral intention reflects whether employees intend to use the system consistently and confidently. Numerous studies have shown that behavioral intention is the strongest predictor of actual system usage (Davis, 1989: Venkatesh & Davis, 2000). The Technology Acceptance Model (TAM) explains that perceived usefulness and perceived ease of use shape user acceptance, which in turn influence behavioral intention. At the same time, the Unified Theory of Acceptance and Use of Technology (UTAUT) broadened this framework by incorporating the construct of performance expectancy, effort expectancy, social influence, and facilitating conditions as determinants of behavioral intention and system use (Venkatesh et al., 2003; Venkatesh et al., 2012). Recent studies reaffirm its central role of behavioral intention in technology adoption. Dwivedi et al. (2021) demonstrated that behavioral intention mediates the relationship between perceived usefulness and actual system use in digitalisation initiatives, highlighting its importance as the bridge between perceptions and real-world outcomes. Similarly, Zhang et al. (2022) found that behavioral intention towards industry 4.0 technologies is strongly influenced by contextual and social factors, showing that workplace culture and organizational support play a decisive role in adoption. Martin (2022) further emphasized that behavioral intention remains the most reliable predictor of technology adoption across industries, regardless of the type of digital tools being introduced. Venkatesh et al. (2022) also reinforced this view, noting that behavioral intention continues to explain adoption of advanced technologies such as AI, IoT, and smart manufacturing systems, making it indispensable in understanding digital transformation.

In high-volume, precision-driven industries such as semiconductors, behavioral intention is particularly critical because technical effectiveness alone does not guarantee successful adoption. Even when systems are well-designed, employees may resist or underutilize them if they lack confidence, perceived complexity, or feel misalignment with their workflows. Weak behavioral intention can therefore lead to production bottlenecks, higher scrap rates, and compliance risks, undermining the goals of digitalisation. This makes it essential to investigate behavioral intention among frontline employees, supervisors, and managers, as their willingness to embrace the new system directly determines whether digital transformation initiatives achieve their intended outcomes in Malaysia's semiconductors industry.

Recent years have seen the adoption of computerised systems in production, leading to significant improvements in efficiency, traceability, and compliance. According to Burkacky et al. (2022), precision is more important and time costs money in this semiconductor company. This digital transformation has to take place. An automated computerized system has been implemented in the End-of-Line 1 (EOL 1) process of the largest production lines in the semiconductor company in Kulim (Reuters Plus, 2025). This system monitors the sitting hours of lids (the protective coverings used to package chips) from the time they are shipped from the Integrated Device Manufacturer (IDM) until their 30-day expiry after shipment.

The new product automates daily supply deliveries to customers, tracks lid status, issues expiry alerts, and ensures lids are used within their recommended lifespan. This is crucial because expired lids can compromise product quality, increase production time, and lead to material waste. The system is an evolution of the semiconductor industry's Industry 4.0 roadmap, replacing a previously manual tracking system that was prone to errors and resource-heavy (Reuters Plus, 2025). As opportunities to improve operational accuracy and minimise e-waste grow, user acceptance becomes vital for the system's success. Ultimately, change management and ongoing process improvements in the high-stakes semiconductor manufacturing environment influence how employees, managers, and leaders perceive, interpret, and operate the new system.

This signals a pressing problem. While digital systems promise efficiency and sustainability, their success is ultimately constrained by user acceptance. In the semiconductor company in Kulim, early evidence shows that employees struggle with system usability and data reliability, highlighting a clear gap between technical capability and behavioral intention. Although the computerized system was designed to reduce e-waste and improve operational accuracy, its effectiveness is undermined when users hesitate to adopt it fully. This disconnect illustrates that technical innovation alone cannot guarantee successful digital transformation. Without strong acceptance, even advanced tools risk underutilisation, leading to inefficiencies, production delays, and wasted resources. In the case of a semiconductor company in Kulim, early evidence of difficulties with system usability and data reliability highlights a gap between technical capacity and behavioral intention. This gap signals a pressing problem where the computerized system was designed to reduce e-waste and improve operational accuracy. It is also potential benefits that remain unrealized if employees hesitate to adopt it fully.

Additionally, in examining the adoption of computerized system within semiconductor manufacturing, this study employs both Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and use of Technology (UTAUT) as guiding frameworks.

On other hand, if employees fail to embrace acceptance within the workplace, organizations are likely to encounter serious setbacks such as low morale, resistance to initiatives, diminished efficiency, and even increased employee turnover. This lack of cohesion often fosters mistrust and disengagement, leaving employees disconnected from the company's vision and objectives. This study examines organizational behaviour and workplace dynamics, this issue is particularly significant because acceptance plays a vital role in encouraging collaboration, innovation, and long-term stability. Specifically, to investigate whether behavioral intention influence employee to use the computerized system in a semiconductor company is directly linked to the problem statement, as it highlights the root cause of organizational challenges and sets the foundation for the next sub-topic.

1.2 Problem Statement

The integration of digital systems in semiconductor manufacturing has brought measurable gains in traceability, inventory control, and productivity. Tools such as an automated trace system and AI -driven quality monitoring have reduced human error and improved efficiency. Yet, the success of these technologies hinges not on their technical capacity alone, but on behavioural intention to use the computerized system and factors frequently underestimated during implementation. Digital transformation in semiconductor manufacturing is a strategic imperative for companies competing in a global, high-precision industry. Automated traceability systems and AI-driven monitoring tools promise significant improvement in productivity, quality assurance, and waste reduction. However, the effectiveness of these technologies is not determined solely by their technical sophistication. It depends critically on employees' behavioral intention to use the computerized system. Without this intention, even an advanced system risks becoming an underutilized investment, leading to inefficiencies, production delays, and compliance risks. This makes it essential to investigate the human and behavioral dimensions of digital adoption, rather than focusing only on technical performance.

In practice, the rollout of systems such as the computerized system in Kulim has revealed a misalignment between the technology's potential and user's behaviour intention. While the system is designed to minimize halts and reduce e-waste, many employees report difficulties with usability, interpretation of automated reports, and trust in system data. These challenges highlight that digital tool are often deployed without sufficient consideration of employee workflows, skills, and confidence, which directly influence their behavioural intention to use the system.

Recent studies reinforce this concern. Teoh and Tan (2021) found that perceived usefulness and ease of use strongly predict behavioral intention among Malaysian manufacturing engineers. According to Thoti (2024), trust in system reliability and digital literacy are critical determinants of employees' behavioral intention towards disruptive technologies. Based on Wen and Bajuri (2025) highlighted that organisational culture and user engagement are decisive factors in digital transformation success, while PwC (2026) reported that semiconductor firms continue to face adoption challenges due to workforce readiness gaps. Together, these findings confirm that behavioral intention is shaped not only by system design but also by broader organisational and cultural contexts.

This issue is further compounded by limited digital literacy and low engagement among frontline staff, creating a knowledge gap that undermines adoption. Industry reports confirm that poor behavioral intention and weak change management are leading causes of failed digital transformation in manufacturing. In high-volume, precision-driven environments like semiconductor plants, such underutilization translates into operational risks including bottlenecks, scrap, and compliance failures.

Despite widespread recognition of digital transformation's benefits, there remains a lack of empirical research into how production floor employees, supervisors, leaders, and managers form behavioral intentions toward computerized systems. Existing studies largely emphasize IT staff or decision makers, overlooking the perspectives of those who directly engage with digital tools in manufacturing contexts. This population gap leaves critical behavioral factors unexplored, particularly in Malaysia's semiconductor industry.

Therefore, this study addresses both the evidence and population gaps by investigating the determinants of behavioral intention to use a computerized system among employees in a semiconductor company. Specifically, it examines the relationships between perceived usefulness, ease of use, performance expectancy, effort performance, social influence, facilitating condition, and behavioral intention. By focusing on frontline users in high-volume production settings, the study aims to provide practical insights into fostering stronger behavioral intention and maximizing the impact of the digital transformation initiatives.

1.3 Research Questions

The research questions are as follows;

1. Is there any significant influence between perceived usefulness and employees' behavioral intention to use?
2. Is there any significant influence between perceived ease of use and employees' behavioral intention to use?
3. Is there any significant influence between performance expectancy and employees' behavioral intention to use?
4. Is there any significant influence between effort expectancy and employees' behavioral intention to use?
5. Is there any significant influence between social influence and employees' behavioral intention to use?
6. Is there any significant influence between facilitating condition and employees' behavioral intention to use?

1.4 Research Objectives

The research objectives are as follows;

1. To examine the significant influence between perceived usefulness and employees' behavioral Intention to use.
2. To examine the significant influence between perceived ease of use and employees' behavioral Intention to use.

3. To examine the significant influence between performance expectancy and employees' behavioral intention to use.
4. To examine the significant influence between effort expectancy and employees' behavioral intention to use
5. To examine the significant influence between social influence and employees' behavioral intention to use.
6. To examine the significant influence between facilitating condition and employees' behavioral intention to use.

1.5 Scope and Limitations of the Study

1.5.1 Scope of the study

This study focuses on analysing factors influencing employees' behavioural intention to use computerized systems at a semiconductor company in Kulim, Kedah. The reference framework examines how perceived ease of use, perceived usefulness, performance expectancy, effort expectancy, social influence, and facilitating conditions affect workers' attitudes toward integrating computerized systems into the organisational environment. Additionally, the study draws on the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) to develop a comprehensive theoretical framework.

The target population includes employees with access to computerized systems in various roles- operational, administrative, or managerial. The research emphasises system acceptance from the end user's perspective, focusing on behavioural intention rather than actual system use. Data was mainly be collected through structured questionnaires to assess employees' perceptions and attitudes.

The study is geographically limited to the Kulim plant of a semiconductor company in Kedah, Malaysia, and not to other semiconductor companies within the country or abroad. Time-wise, the research represents employees' perceptions at a particular point in time and does not address longitudinal developments in attitudes or behaviour regarding the acceptance of new technology.

1.5.2 Limitations of the study

Despite its contributions, this study has several limitations. Firstly, relying on a single case study limits the ability to generalize the findings, which may not be directly applicable to other organisations, industries, or cultures with different technological infrastructures or organisational cultures.

Secondly, the study mainly uses self-reported data that can be influenced by response bias, social desirability bias, or respondents' false self-assessments. Organisational pressures might cause workers to exaggerate their acceptance or report incorrectly about difficulties faced with the system.

Third, the research focuses on behavioural intention and acceptance rather than actual system use or performance outcomes, meaning it may not reflect the maximum effectiveness or long-term use of the systems.

Additionally, the selected independent variables may not encompass all factors influencing technology acceptance, such as organisational culture, job complexity, previous experience with technology, or system-specific technical problems.

Finally, resource and time constraints may limit the sample size, affecting the statistical strength of the results. These limitations could be addressed in future research through longitudinal studies, mixed methods, or cross-organisational comparisons.

1.6 Significance of the Study

1.6.1 Practical contribution

The research has practical significance for managing the semiconductor company in Kulim, Kedah, as it identifies key factors that influence employee acceptance of computerized systems. The findings can assist managers in designing targeted interventions to boost employee adoption by enhancing system usability, training, and supporting conditions. Additionally, the influence of social factors and performance expectations can inform more effective change management strategies during system implementation. On an industry level, the study offers evidence-based recommendations for technology-driven organizations aiming to maximize the benefits of digital investments. Furthermore, the results can help policymakers and relevant organizations develop workforce digital readiness programs.

1.6.2 Empirical contribution

This study validates and extends TAM and UTAUT models within a high-tech manufacturing company in Malaysia, contributing empirical insights to the literature on behavioral intention and technology adoption. By investigating the relationships among perceived ease of use, perceived usefulness, performance expectancy, effort expectancy, social influence, and facilitating factors through experimental methods, it provides context-specific evidence related to the semiconductor industry in Kulim, Kedah. The findings enrich existing knowledge by offering data relevant to evolving industrial environments, thereby improving the generalizability and practical application of technology acceptance models to organisations and industries.

1.6.3 Theoretical contribution

Since it combines and contextualizes the TAM and UTAUT constructs within a single model to explain employee adoption of computerized systems, the study provides a valuable theoretical contribution. By incorporating concepts such as perceived usefulness, ease of use, performance expectancy, effort expectancy, social influence, and facilitating factors in an organizational manufacturing setting, it enhances the explanatory strength of these original theories. Moreover, the framework emphasises the process influencing employees' acceptance, thereby improving the practical application of current theoretical insights and aiding in the adaptation of theories to complex industrial environments.

1.7 Definition of Key Terms

1.7.1 Employees' Behavioral Intention to Use: How comfortable, helpful, and satisfied a user is with a new system (Hajesmaeel-Gohari et al., 2022).

1.7.2 Perceived Ease of Use: The degree to which a user feels that navigating the operating system is effortless (Davis, 1989).

1.7.3 Perceived Usefulness: The degree to which users recognize the advantages of the system's functionality while carrying out their duties (Davis, 1989).

1.7.4 Performance Expectancy: The extent to which a person thinks that utilizing a system would enable them to perform better at work (Cohen et al., 2021).

1.7.5 Effort Expectancy: The level of system usability (Venkatesh et al., 2003).

1.7.6 Social Influence: The extent to which friends, coworkers, or superiors force people to utilize the system (Venkatesh et al., 2003).

1.7.7 Facilitating Conditions: The tools and assistance required to make the system usable (Venkatesh et al., 2003).

1.8 Organisation of Thesis

The background to the research, the problem description, and the research objectives are presented in the first of five chapters that highlight this study. The research issues addressed by the data collection and analysis are also highlighted in this chapter. The second chapter presents a literature review of existing research in this field, and the third chapter outlines the the study methodology for data collection and analysis. In the following chapter, the data set was analysed to address the research issues. The final chapter includes suggestions for improvement and an overall conclusion

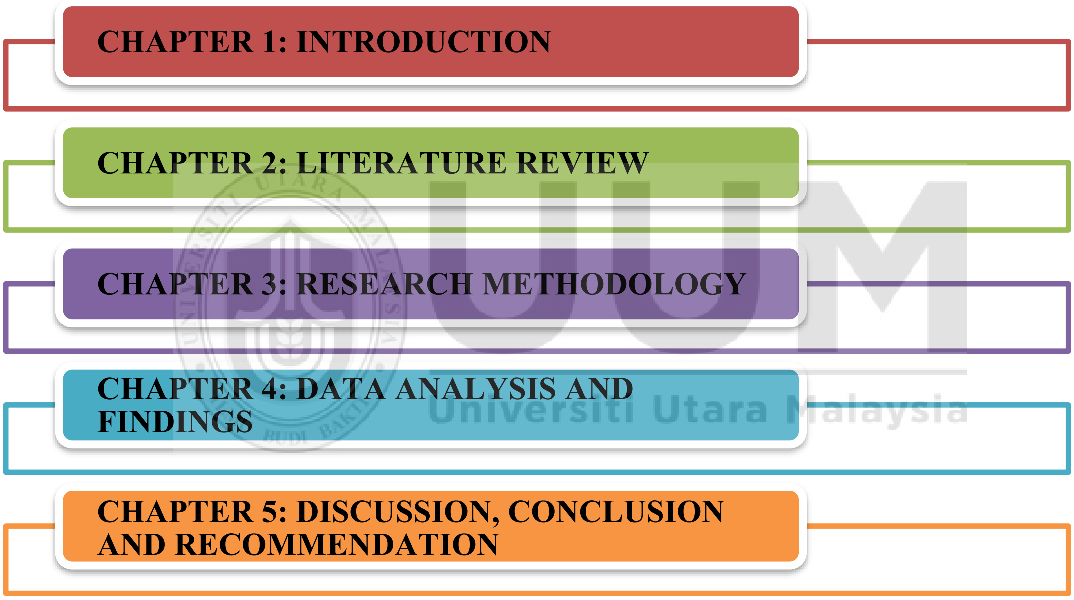

Figure 1.2
The study paper's structure
Source: Self-made, (2025)

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides a thorough analysis of employees' behavioural intention to use computerised systems, with a particular focus on the semiconductor company in Kulim, Kedah. It begins by summarising the theoretical underpinnings of technology adoption research, such as the UTAUT and the TAM, and identifying key variables, including perceived usefulness, perceived ease of use, performance expectancy, effort expectancy, social influence, facilitating conditions, and behavioural intention. It also reviews key findings from previous research to identify gaps that support the current study, demonstrating how these criteria have been implemented and validated in diverse organisational contexts. Based on this review, the chapter offers a conceptual framework and study-specific hypotheses, all grounded in the central theory. The chapter concludes with a summary that integrates the literature review and establishes the framework for the methodology outlined in Chapter 3.

2.2 Employees' Behavioral Intention to Use

In practice, employees' commitment to using computerized devices, especially in industrial settings, depends greatly on their perception of the system's necessity and how well it currently supports their work. Behavioral intention refers to an individual's willingness or desire to use a system in daily activities, rather than simply accepting the system or colleagues (Chatterjee, 2022). The intention to adopt the system is usually high among employees in manufacturing environments where functionality, accuracy, and time sensitivity are essential values, and where the system is viewed as relevant, useful, and a supportive addition to existing workflows.

According to Adikoeswanto et al. (2022), the shift from manual to digital processes is a key factor influencing the adoption of digital systems. This readiness directly impacts behavioral intention, as employees who are both cognitively and technically prepared are more likely to intend to use computerized systems consistently. Conversely, if employees believe the system is beyond their capabilities, they are less likely to use the technology, regardless of its potential (Khogali & Mekid, 2023). This underscores the importance of digital readiness in shaping behavioral intent, beyond mere deployment in industrial settings.

In manufacturing, the intention to implement systems like the computerized system is strongly linked to how easily these systems can be integrated into existing production processes. This aligns with technological adoption theories such as perceived usefulness and compatibility, which highlight perceived benefits and integration as critical factors.

Research by Akpa et al. (2021) also shows that broader organisational factors influence employees' behavioral intention to adopt computerized systems. A positive organisational culture fosters innovation and continuous learning, boosting the willingness to use new technologies. Training programs further reinforce employees' confidence and sense of control over the system, directly strengthening their behavioral intention. Additionally, employees are more likely to use the system once they perceive it as beneficial to their work functions.

Li et al. (2024) state that some employees quickly become accustomed to new systems, while others experience issues with usability and perception of the system's output. Awareness of these aspects is one of the keys to the successful implementation of the system, since the lifelong use of the system cannot rely solely on the technical functionality of its implementation but also on the motivation of the employees, their confidence, and their perception of the value the system brings to their specific working environment.

Although behavioral intention is widely recognized as a key determinant of system acceptance, prior research shows that its explanatory power is limited when considered in isolation. Early studies within Technology Acceptance Model (TAM) often treated behavioral intention as the final outcome of perceived usefulness and ease of use. However, more recent investigations emphasize that contextual influence such as organisational culture, employee readiness, and motivational factors play a significant role in shaping this intention. Unlike earlier linear models that assumed a straightforward link between perception and intention, contemporary findings. Akpa et al (2021) and Li et al. (2024) portray behavioral intention as fluid, evolving through ongoing training, usability experience, and trust in system outputs. This highlights a critical weakness. While behavioral intention reflects willingness, it does not fully account for sustained engagement or long-term adoption.

2.3 Perceived Ease of Use

Buley and Natoli (2024) describe perceived ease of use as the degree to which a system appears straightforward to users. It refers to the extent to which individuals believe operating a specific technology will be uncomplicated, also known as perceived ease of use or PEOU. Originally, Davis (1989) defined it as the belief that using a system would be easy. Ease of use and simplicity are key factors influencing the adoption of new technologies. Further research has broadened this understanding, with Venkatesh et al. (2003) within the UTAUT framework linking PEOU closely with effort expectancy, which measures how usable a system feels and the perceived minimal mental and physical effort required to interact with it. Gefen and Straub (2000) added that usability encompasses more than just technical simplicity.

It also involves lowering fear and boosting confidence in using a system. In organisations, PEOU has been linked to factors such as user support, proper training, and intuitive design, which influence employees' willingness to adopt new technology. Therefore, PEOU is a crucial factor in encouraging acceptance of computer-based workplace systems like the computerized system in a semiconductor company, as it accounts for both the system's technical aspects and the users' psychological comfort.

Over time, the role of perceived ease of use in system acceptance has changed. Early TAM studies (Davis, 1989) viewed PEOU mainly as the belief that a system is simple to use, which directly influences intention to adopt. Later models, such as UTAUT (Venkatesh et al., 2003), expanded on this idea, showing that ease of use also reduces users' effort and stress. More recent research (Gefen & Straub, 2000; Buley & Natoli, 2024) highlights that PEOU depends not only on technical design but also on training, support, and confidence. This shows a trend. While PEOU is important for a first impression. It does not fully explain long-term acceptance. Sustained use often requires trust in the system, a positive workplace culture, and ongoing reinforcement, which means that focusing solely on ease of use can oversimplify the adoption process.

2.3.1 The Relationship between Perceived Ease of Use and Employees' Behavioural Intention

Research indicates that when technology is user-friendly, employees are more inclined to adopt it. Davis (1989), as explained in the Technology Acceptance Model (TAM), noted that perceived ease of use (PEOU) directly influences behavioral intention. Venkatesh and Davis (2000) further found that ease of use enhances perceived usefulness, which in turn supports behavioral intention. A recent study by Nguyen and Nguyen (2024) demonstrated that effort expectancy, like PEOU, is a significant predictor of behavioural intention in learning systems. In another study, Rosmiza et al. (2020) showed that user-friendly platforms increase employee adoption of systems. Wolor et al. (2024) also highlighted that easy-to-use digital tools in manufacturing reduce barriers and promote daily use. Based on this review, individuals who perceive a system as simple to use tend to have more positive attitudes and are more motivated to use it. Therefore, the initial hypothesis for this investigation is:

H1: There is a significant influence between perceived ease of use and employees' behavioral intention to use the computerized system.

2.4 Perceived Usefulness

Perceived usefulness refers to how much a user believes that technology enhances their work performance (Gani et al. 2024). A key concept in technology adoption research, perceived usefulness refers to a person's belief that using a particular system will improve their work efficiency (Tian et al., 2023). According to the original TAM, Davis (1989) described PU as the degree to which an individual perceives that using a system will improve their performance, emphasising technology's role in increasing effectiveness and efficiency. Venkatesh et al. (2003) integrate PU into performance expectancy within the UTAUT, which summarises that technology use enhances job performance.

Building on this, Venkatesh and Davis (2000) connect PU with users' perceptions of effectiveness and productivity, and the resulting job outcomes. Gefen and Straub (2000) point out that PU extends beyond productivity alone, encompassing perceived value and utility of technology for routine tasks. PU is a strong predictor of intentions to use new systems, as it is linked to better decision-making, faster task completion, and improved communication in the workplace. Employees are more likely to adopt the Computerized system at a semiconductor company if they believe it will improve their overall performance and work efficiency.

Furthermore, perceived usefulness has always been seen as a strong factor in technology acceptance, but its role has changed over time. Early TAM studies (Davis, 1989) focused mainly on performance improvement, assuming that better efficiency alone would drive adoption. Later models, such as UTAUT (Venkatesh et al., 2003), show that PU is shaped by job demands and organisational context. Recent research (Gefen & Straub, 2000; Gani et al., 2024) highlights that PU also encompasses the value and relevance of technology in daily tasks. This shows a trend where PU is important for initial adoption, but it cannot fully explain long-term use, which also depends on trust, usability, and workplace culture.

2.4.1 The Relationship between Perceived Usefulness and Employees' Behavioral Intention

A study by Yang et al. (2021) found a strong positive link between perceived usefulness and users' intention to adopt technology systems, noting that employees are motivated by tangible improvements in work outcomes. Similarly, Yang et al. (2024) observed that automated lid expiry receipt software can reduce waste and human errors in manufacturing. However, they caution that perceived usefulness might decline if employees are unclear about how the system contributes to these benefits or if the reports it generates are too complex to understand. This can weaken employees' behavioral intent to use the system, despite its technical capabilities.

Additionally, Chei et al. (2019) reported that perceived usefulness significantly influences employees’ acceptance of Industry 4.0 smart manufacturing technologies. Schorr (2023) highlighted that perceived usefulness is a well-validated factor in technology acceptance research, with employees’ behavioral intention increasing when they see clear performance gains. Collectively, these findings support the idea that perceived usefulness significantly impacts behavioral intention, especially in semiconductor sectors where digital tools simplify operations. Therefore, the second hypothesis for this study is:

H2: There is a significant influence between perceived usefulness and employees' behavioral intention to use of the computerized system.

2.5 Performance Expectancy

According to Fedorko et al. (2021), performance expectancy refers to the extent to which users believe they will be able to improve their outcomes or be more productive with the system. The degree to which a person believes that using a system would enable them to perform better at work is known as performance expectancy (PE). PE has been recognised as a strong predictor of behavioural intention to use technology within the UTAUT model. PE, on the other hand, is defined by Venkatesh et al. (2003) as the extent to which a person believes that using the system will help them perform better at work. Conceptually, this construct is closely similar to Perceived Usefulness (PU) in TAM, although it extends beyond individual views to encompass higher organisational goals such as efficiency, productivity, and effectiveness (Davis, 1989).

According to a different study by Venkatesh et al. (2012), PE shows how users' adoption of technology improves as they complete tasks. In professional life, PE is often associated with more effective decision-making, faster task completion, improved communication, and performance monitoring. The usefulness of PE depends on employees' perceptions of the Computerized system in a semiconductor company in Kulim and on the belief that the monitoring system can help improve work processes, reduce errors, and support employees.

Recent studies by Fedorko et al., (2021) show that PE also reflects how technology supports organisational goals, reduces errors, and improves processes. This trend highlights a limitation: while PE explains employees' belief in better performance, it cannot fully account for long-term system use. Sustained adoption also depends on usability, trust, and workplace culture, meaning PE should be considered alongside other factors.

2.5.1 The Relationship between Performance Expectancy and Employees' Behavioral Intention

In manufacturing, where high performance and operational efficiency are critical, employees are unlikely to develop a strong behavioral intention to use technologies that do not clearly enhance productivity, output quality, or environmental sustainability (Madzamba & Matorevhu, 2023). In this context, behavioral intention reflects the mindset of employees who incorporate a system into their daily routines, rather than simply recognizing its existence. The original UTAUT model by Venkatesh et al. (2003) identified Performance Expectancy (PE) as the strongest predictor of behavioral intention, indicating that employees are more inclined to use a system if they believe it boosts their performance.

Building on this, Chao (2019) demonstrated that PE significantly influences behavioral intention in system adoption, suggesting that employees' motivation depends on expected performance outcomes. Collectively, these studies offer compelling empirical evidence that performance expectancy is not just a theoretical idea but a proven driver of behavioral intention across various settings. Accordingly, the third hypothesis for this study is:

H3: There is a significant influence between performance expectancy and employees' behavioral intention to use of the computerized system.

2.6 Effort Expectancy

Effort Expectancy refers to how difficult and mentally taxing it is to use the system. The concept of Effort Expectancy (EE) was formulated by Venkatesh et al. (2003) within the UTAUT. It denotes the level of comfort with using the system and is closely related to Perceived Ease of Use (PEOU) in the TAM (Davis, 1989). EE extends PEOU by incorporating broader organisational and contextual factors, such as system design, support, and training.

Venkatesh and Bala (2008) noted that during the initial adoption stages, EE shapes users' expectations of how easy and light the system will be to utilise.

The later refinement by Venkatesh et al. (2012) indicated that EE is particularly important in the initial phases of implementation, and that its importance declines as users become accustomed to the system. EE is often associated with user-friendliness, clarity of instructions, and a low learning burden in the workplace, thereby reducing the mental and physical burden. Employees at the semiconductor company regard the computerized system as easy to learn, use, and integrate into daily routines, which enhances the likelihood of acceptance and continued use. This is where EE comes into play.

In fact, effort expectancy is recognized as an important factor in technology adoption. Studies have shown that its influence is strongest during the early stage of system use. More recent finding based on Venkatesh et al., (2012) highlight that EE gradually losses importance once users become familiar with the system, as confidence and routine replace initial concern about effort. This trend reveals a limitation, while EE explain first impressions and early adoption, it does not fully account for sustained use.

2.6.1 The Relationship between Effort Expectancy and Employees' Behavioral Intention.

Effort expectancy (EE) reflects how easy employees perceive a system to be to use. People tend to prefer technology that is straightforward and requires minimal effort. Venkatesh et al. (2003) identified EE as a key factor influencing behavioral intention within the Unified Theory of Acceptance and Use of Technology (UTAUT). Numerous studies have reinforced this link. For instance, Chao (2019) found that higher EE significantly increased the likelihood of users engaging with learning systems, showing a preference for user-friendly platforms.

Nguyen and Nguyen (2024) also reported that employees are more willing to adopt personalized learning systems when they feel comfortable using them, while Adegbite (2017) emphasized that EE directly affects behavioral intention to adapt systems. Additionally, Wolor et al. (2024) showed that intuitive systems encourage usage by reducing training time and discomfort. Collectively, these findings suggest that employees are more inclined to adopt systems they find easy to use and perceive positively, leading to the formulation of the following hypothesis:

H4: There is a significant influence between effort expectancy and employees' behavioral intention to use of the computerized system.

2.7 Social Influence

Social Influence refers to the capacity of colleagues, supervisors, or team leaders to sway users into deciding to adopt a system (Cho & Chan, 2021). Venkatesh et al. (2003) describe SI within the UTAUT as the belief that significant others think one should use the new system, highlighting how supervisors, peers, and organisational culture impact technology adoption. This concept is linked to subjective norms in the Theory of Reasoned Action (Fishbein & Ajzen, 1975) and the Theory of Planned Behavior (Ajzen, 1991), where social pressure and expectations shape behavioral intentions.

After further development, Venkatesh and Bala (2008) found that SI is particularly effective during the early stages of system implementation when employees are uncertain and tend to look to supervisors or colleagues for signals. SI typically manifests as peer support, managerial backing, and group expectations, all of which facilitate system use at work. To assess SI's relevance among semiconductor company workers, active encouragement and support from managers, team leaders, and colleagues in using the Computerized system are crucial, as such support can significantly enhance the likelihood of workers adopting and consistently using the system.

2.7.1 The Relationship between Social influence and employees' behavioral intention

Social influence refers to the degree to which employees believe that important others, including supervisors, think they should use a specific system. According to the Unified Theory of Acceptance and Use of Technology (UTAUT), Venkatesh et al. (2003) identified social influence (SI) as a key factor in predicting behavioral intention, suggesting employees are more likely to adopt technology when they perceive social pressure or encouragement. Furthermore, Wolor et al. (2024) emphasised that SI is vital in persuading employees to use the system, as corporate culture and peer support help reduce resistance to change. A similar finding was reported by Alalwan et al. (2017), who found that SI significantly positively impacts behavioral system adoption, demonstrating that peer and organizational support foster acceptance.

This influence is particularly strong in the initial stage of system implementation. The empirical data from Cho and Chan (2021) indicate that, in the formation of usage norms, social influence is a decisive factor that determines employees' intention to use a system. At this level, employees tend to seek signals that the system is critical and valid, and worth the effort. Through active use of the system and continuous promotion by the leaders, they will send a message of relevance and value, which will reinforce employees' desire to adopt the system in their daily activities. Based on the review of the literature, the fifth hypothesis developed for this study is:

H5: There is a significant influence between social influence and employees' behavioral intention to use of the computerized system.

2.8 Facilitating Conditions

Facilitating conditions refer to the resources, training, and support that enable users to interact with the system. Initially, these resources help teach users, and subsequently, they support users when assistance is needed (Camilleri & Camilleri, 2023). Facilitating Conditions (FC) represent the extent to which individuals believe that organisational and technological infrastructure exists to enable system use (Buraimoh et al., 2023). According to UTAUT by Venkatesh et al. (2003), FC reflects the belief that organisational and technological infrastructure supports system use, emphasising the importance of resources, training, and support.

Conceptually, in the Theory of Planned Behavior (Ajzen, 1991), this construct relates to perceived behavioral control, where external factors like opportunity and resource availability influence behaviour. Venkatesh et al. (2012) further refine FC as having a direct impact on behavioral intention and actual usage. This is especially true in organisations where system integration depends on proper IT backup, compatibility with existing processes, and user support. In practice, FC often appears through training programs, help desks, reliable hardware and software, and management backing. For semiconductor Kulim personnel, FC's importance hinges on sufficient resources, technical support, and organisational readiness, as staff must feel confident in their ability to implement and maintain system use.

This information allows research to quantify variables significantly associated with system adoption. Such insights are crucial for designing better implementation strategies, improving digital literacy, and ensuring successful, accepted integration of technology within manufacturing environments.

2.8.1 The Relationship between Facilitating Conditions and Employees' Behavioral Intention

The connection between facilitating conditions and employees’ behavioral intentions in system use has been extensively examined in technology acceptance research. Venkatesh et al. (2003), through the Unified Theory of Acceptance and Use of Technology (UTAUT), identified that factors like organisational support, infrastructure, and training are crucial for system adoption, while behavioral intention indicates employees’ motivation to use technology. Recent research by Nugraha et al. (2025) supports this, showing that facilitating conditions positively influence behavioral intention by enhancing perceptions of ease of use and usefulness during system adoption.

Additionally, Meiranto et al. (2024) found that facilitating conditions significantly impact behavioral intention, which in turn affects actual system use. Sabas and Kiwango (2021) noted that employees are more likely to adopt digital systems when they trust technical issues can be resolved quickly and efficiently. This confidence reduces fear of system failures and encourages more decisive use of the system in both normal and stressful situations. Consequently, the final hypothesis for this study is:

H6: There is a significant influence between facilitating conditions and employees' behavioral intention to use of the computerized system

2.9 Research Framework

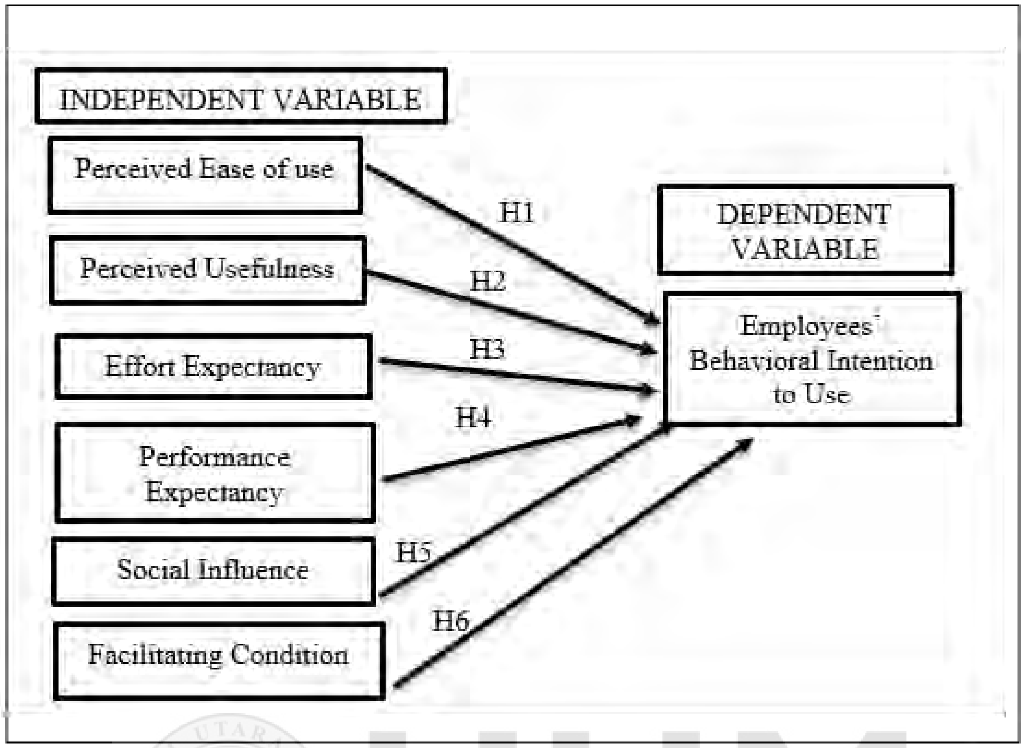

Figure 2.1
Research Framework
Source: Self-developed, (2025)

Figure 2.1. presents the research framework of this study. This study comprises six independent variables and a dependent variable. The independent variables are perceived ease of use, usefulness, performance expectancy, effort expectancy, social influence, and facilitating conditions. These variables are grounded in TAM and UTAUT, which are widely used models for explaining technology adoption within organisational environments. The dependent variable is employees' behavioural intention to use the computerized system. The framework's hypotheses posit that employees' behavioural intention to use the computerized system are influenced by perceived ease of use, perceived usefulness, expectations of performance, effort performance, social influence, and facilitating conditions. Together, these elements illustrate how these factors interact to determine the extent to which the sit time monitoring system is accepted by employees in the semiconductor company.

2.10 Underpinning Theory

2.10.1 Technology Acceptance Model (TAM)

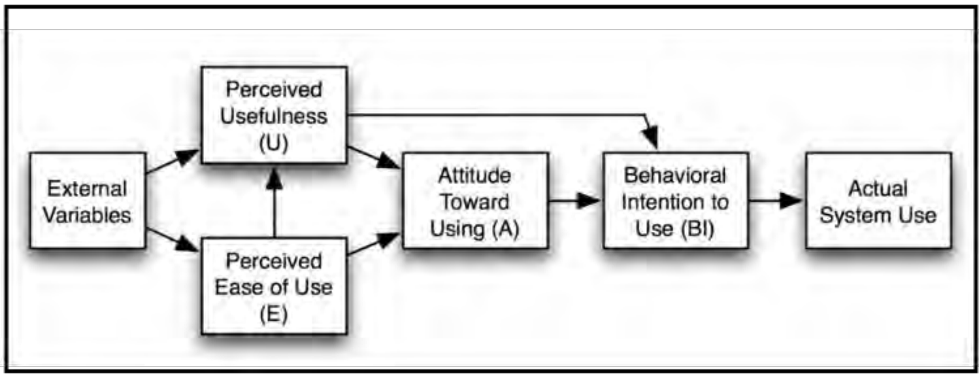

Figure 2.2
Structure of Technology Acceptance Model (TAM)
Source: Davis, (1989)

Figure 2.2 shows the structure of the Technology Acceptance Model (TAM), developed by Davis (1989), which has been widely recognised as one of the most influential frameworks for explaining individual technology adoption. The model asserts that behavioural intention to use a system is primarily determined by two cognitive beliefs: perceived ease of use (PEOU), defined as the extent to which an individual believes that using the system will be free of effort, and perceived usefulness (PU), define as the extent to which an individual believe that using the system will enhance job performance. These constructs shape users' attitudes and intentions, which in turn influence actual system usage. Despite the strong empirical evidence supporting the Technology Acceptance Model (TAM), the technology adoption rate in organisational contexts often remains low. This is because behavioural intention is not solely determined by ease of use and usefulness. In other contexts, managerial and social factors also exert significant influence on behavioural intention.

The underpinning theoretical rationale for employing the Technology Acceptance Model (TAM), in this study, lies in its simplicity and empirical robustness. The Technology Acceptance Model (TAM), provides a parsimonious yet powerful explanation of the individual-level acceptance, making it an appropriate starting point for examining employees' adoption of the computerized system. However, the Technology Acceptance Model (TAM), alone is insufficient to capture the complexity of organisational technology adoption. While Technology Acceptance Model (TAM), focuses on cognitive beliefs, it does not adequately account for social influence, facilitating conditions, performance expectation, or effort expectation, which are critical in workplace environments. For this reason, the present study integrates the Technology Acceptance Model (TAM) with the Unified Theory of Acceptance and Use of Technology (UTAUT). The combination of these theories enhances explanatory power of Technology Acceptance Model (TAM), contributes the foundation constructs of perceived ease of use and perceived usefulness, while UTAUT extends the framework by incorporating social and organisational dimensions. This integration ensures that both individual cognition and contextual determinants are considered, thereby offering a more holistic understanding of employees' behavioral intention.

In the specific context of a semiconductor company, the Technology Acceptance Model (TAM), is particularly relevant for analysing employees' adoption of computerized system. Employees' perception of the system ease of learning and ease of use in daily production tasks reflects perceived ease of use, while their belief that the system improves efficiency, accuracy, and predictive power reflects perceived usefulness.

It is important to note that not all the variables from the original Technology Acceptance Model (TAM), are included in this study. Specifically, the constructs of attitude and actual behaviour have been excluded. The exclusion is justified on methodological and contextual grounds. First, the attitude variable is conceptually redundant when behavioural intention is directly measured, as intention already reflects the motivational disposition towards system use. The second actual behaviour is excluded because the study focuses on predictive factors of intention rather than post-adoption behaviour. Measuring actual system use would require longitudinal data collection, which falls outside the scope of this research design. By streamlining the model to focus on perceived ease of use, perceived usefulness, and behavioural intention, the framework remains parsimonious while still capturing the most critical determinants of technology acceptance in this organisational context.

Additionally, perceived ease of use and perceived usefulness are closely related but do not carry the same meaning within the Technology Acceptance Model (TAM). Perceived ease of use (PEOU) refers to the degree to which an individual believes that using a system will be effort-free, emphasising the system's simplicity and user-friendliness. In contracts, perceived usefulness (PU) refers to the degree to which an individual believes that the system will enhance job performance, emphasising the value and productivity outcome derived from its use. Recent empirical studies reaffirm this distinction. Surairi et al. (2025) demonstrated that ease of use primarily influences users' confidence and willingness to engage with the system, while usefulness directly impacts their perception of improved efficiency and accuracy in work tasks. Similarly, Anaam et al. (2023) found that while both constructs are significant predictors of behavioral intention, perceived ease of use indirectly strengthens perceived usefulness by making the system more accessible, thereby enhancing its perceived value. Thus, although interconnected, ease of use and usefulness represent different dimensions. One will address the effort required, and the other will address the performance benefits. Together, they provide a more comprehensive understanding of behavioral intention in technology adoption.

2.10.2 Unified Theory of Acceptance and Use of Technology (UTAUT)

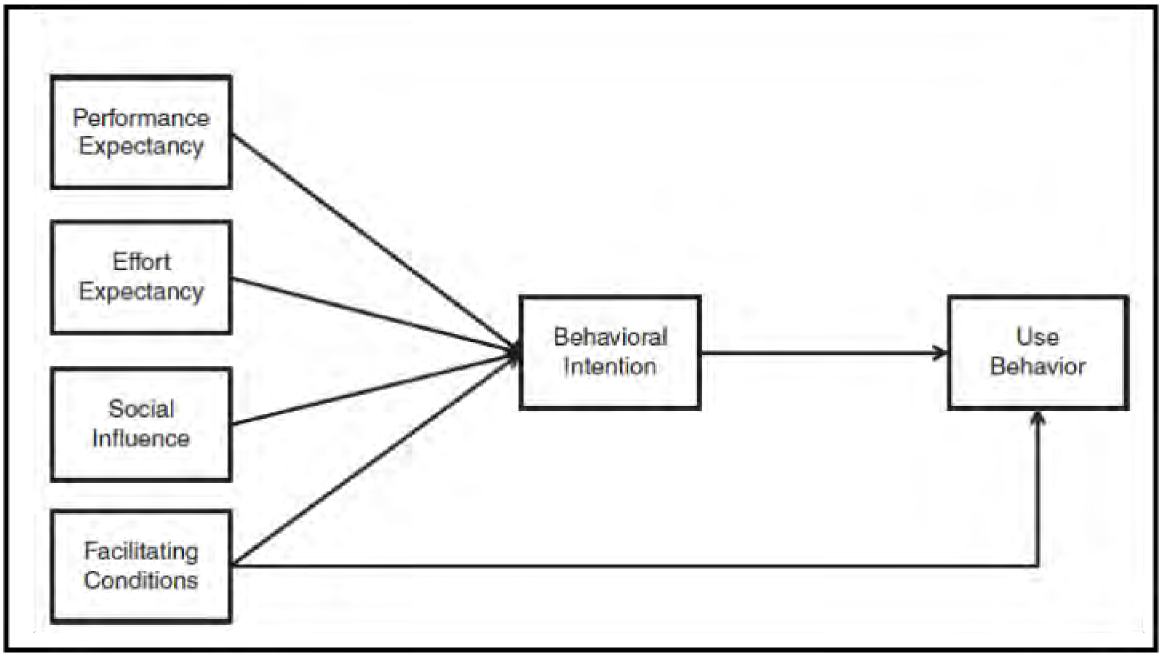

Figure 2.3
Unified Theory of Acceptance and Use of Technology (UTAUT)
Source: Venkatesh et al. (2003)

Venkatesh et al. (2003) discuss' Unified Technology Acceptance and Use (UTAUT), which considers key factors influencing technology adoption within organisations. Figure 2.3 illustrates these variables, combining elements from several major technology acceptance theories. According to UTAUT, there are four core constructs. There are performance expectancy, effort expectancy, social influence, and facilitating conditions. They are used to assess behavioral intention. Performance expectancy refers to how much a person believes that using the system will improve their job performance. It also includes whether they feel pressure from significant others to adopt the system. Effort expectancy captures perceptions of the system's ease of use and user-friendliness. Social influence involves the perception of pressure from important people, while facilitating conditions relate to how supported and able an individual feels in using the system. Facilitating conditions represent the organisational and technical support available to enable effective system use. Collectively, these constructs provide a multidimensional view of behavioural intention, extending beyond individual cognition to include social and organisational determinants. UTAUT has been widely examined in research focusing on technology adoption across diverse organisations and industries.

UTAUT has been widely validated across diverse organisational and industrial contexts, demonstrating its explanatory strength in predicting behavioural intention. In this study, four independent variables, which are performance expectancy, effort expectancy, social influence, and facilitating conditions, are directly derived from UTAUT. These constructs are particularly well suited to the semiconductor company, where employees' behavioral intention to adopt the computerized system depends not only on perceptions of usefulness and ease of use but also on organisational readiness and peer influence. For example, performance expectancy is related to employees' belief that the system will improve productivity, accuracy, and predictive capabilities, while effort expectancy reflects their perception of the system's ease of learning and integration into daily production tasks. Social influence is shaped by the expectation of supervisors, colleagues, and the wider organisation, and facilitating conditions encompass the infrastructural and managerial support that enable system adoption.

It is important to note that, unlike the original UTAUT, this study does not extend its analysis to actual system use. The focus is limited to behavioral intention as the dependent variable, reflecting the study's emphasis on predictive factors rather than post-adoption behaviour. This methodological choice is justified by the research design, which seeks to identify the determinants of employees' intention to adopt the system rather than measure usage outcomes. By concentrating on behavioural intention, the framework remains parsimonious while still capturing the most critical organisational and social influence on technology adoption in this context.

This research directly bases four independent variables on UTAUT. They are performance expectancy, effort expectancy, social influence, and facilitating conditions. These constructs are best suited to describe employees' behavioural intention to use the computerized system in a semiconductor company, where adoption depends not only on individual perception but also on organisational readiness and social influence. Performance expectancy relates to how employees perceive that the system will improve productivity and accuracy. Expectancy refers to their perception of the system's user-friendliness. Social influence involves supervisors, peers, and the relevant organisation. However, unlike the original UTAUT, this study examines only behavioural intention as the dependent variable and does not investigate actual system use.

2.11 Summary of the Chapter

This review chapter covers the literature and concepts related to employees' behavioral intentions to use the computerized system in semiconductor companies. The study identified dependent variables, such as perceived ease of use, usefulness, performance, and effort expectancy, as well as independent variables, such as social influence and facilitating factors, based on the TAM and UTAUT frameworks. By aligning relevant TAM and UTAUT constructs with the study's objectives, it also outlined the theoretical framework. Overall, these insights provide a foundation for exploring the factors that affect technology adoption within a business context.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the study methods used to evaluate employees' approval of the computerized system developed at a Kulim semiconductor plant. It covers the study framework, hypotheses, research design, population, sample, sampling methods, and data collection tools. Additionally, it presents a logical plan for data collection and analysis to ensure the study's validity, reliability, and relevance, detailing the tools and analytical approaches employed.

3.2 Summary of Proposed Research Hypotheses

The hypothesis of this research is as follows;

H1: There is a significant influence between perceived ease of use and employees' behavioral intention to use the computerized system.

H2: There is a significant influence between perceived usefulness and employees' behavioral intention to use the computerized system.

H3: There is a significant influence between performance expectancy and employees' behavioral intention to use the computerized system

H4: There is a significant influence between effort expectancy and employees' behavioral intention to use the computerized system

H5: There is a significant influence of social influence and employees' behavioral intention to use the computerized system

H6: There is a significant influence difference between facilitating conditions and employees' behavioral intention to use the computerized system.

3.3 Research Design

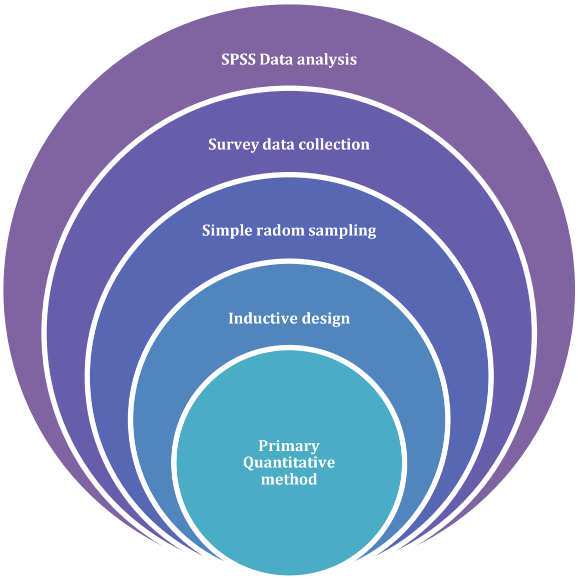

Figure 3.1
Research Design
Source: Self-developed, (2025)

Figure 3.1 illustrates that a research design is a strategic framework for systematically integrating various components of a study (Amadi, 2023). It details how data will be collected, measured, and analysed. An inductive research design has been chosen for this study to explore the patterns and relationships among different factors influencing employees' behavioural intentions regarding the computerised system at a semiconductor company in Kulim. The unit of analysis is the individual employee, since behavioral intention is assessed at the personal level. This inductive approach is appropriate because the study seeks to draw general conclusions from specific observations gathered directly from employees (Conaty, 2021). As behavioural intention correlates with measurable responses, structured questionnaires have been used to collect primary quantitative data directly. Additionally, this method effectively identifies trends and facilitates data-driven conclusions without the need for hypothesis modelling.

3.4 Research Population

Population Size (N)	Sample Size (S)
10	10
15	14
20	19
25	24
30	28
35	32
40	36
45	40
50	44
55	48
60	52
65	56
70	59
75	63
80	66
85	70
90	73
95	76
100	80
110	86
120	92
130	97
140	103
150	108
160	113
170	118
180	123
200	127
210	132
220	136
230	140
240	144
250	148
260	144
300	**169**
320	175
340	181
360	186
380	191
400	196
420	201
440	207
460	212

Figure 3.2:
Determining Sample Size for Research Activities
Source: Kerjcie and Morgan (1970)

Figure 3.2 shows the determination of sample size for research activities by Kerjcie and Morgan (1970). This study was conducted among employees of a semiconductor company in Kulim, who were potential or existing users of the computerised system. These roles included machine operators, line leaders, technicians, and supervisors who directly impacted production.

Based on the most current HR records, the total N = 300 individuals were within the scope of the study. Using the sample size determination formula by Krejcie and Morgan (1970):

$S = \chi^2 \cdot N \cdot P(1-P) / d^2(N-1)+\chi^2 \cdot P(1-P)$

Where:

- N=300N = 300N=300
- P=0.5P = 0.5P=0.5 (assumed population proportion)
- d=0.05d = 0.05d=0.05 (margin of error)
- χ2=3.841\chi^2 = 3.841χ2=3.841 (for 95% confidence)

Thus, a minimum sample size of 169 respondents was deemed sufficient for this study.

3.5 Research Sample

Sample research participants for this study included employees of a semiconductor company who either directly operate the computerized system or are indirectly involved. This group comprised roles such as machine operators, technicians, line leaders, and shift supervisors within the production environment. The unit of analysis of this study is individual. They were selected because they are the system's primary users and are best positioned to evaluate its usability, usefulness, and impact on work performance. Their insights are crucial for understanding behavioral intentions in a high-demand, precision-focused manufacturing setting. This approach helps prevent bias and allows for empirical generalisation from the findings. Data were gathered through self-administered structured questionnaires distributed during work hours, with management approval. Therefore, this sample is appropriate for examining the variables that influence behavioral intention toward the Computerized system.

3.6 Sampling Technique

This study used simple random sampling, giving each member an equal chance, to minimise bias and improve result generalizability (Raifman et al., 2022). It was essential since the research focused on employees' behavioral intentions towards the computerized system within a company. This method gathered unbiased opinions from diverse user groups like machine operators, technicians, and supervisors. All participants worked in the same organisation and technological context, making simple random sampling appropriate, yielding 169 respondents. As Hays and McKibben (2021) noted, this approach simplified analysis and enhanced the power and relevance of the findings. Overall, it increased the study's validity by capturing diverse user experiences free from researcher influence.

3.7 Research Design

The main research instrument used in this study was a well-structured questionnaire designed to quantitatively assess employees' behavioural intention to use the computerised system in a semiconductor company in Kulim. This research employed a cross-sectional design to analyse the collected data. The questionnaire was constructed using validated constructs drawn from the TAM and the UTAUT. It comprised closed-ended questions measured on a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). The instrument was divided into several segments representing specific variables, such as perceived ease of use, perceived usefulness, performance expectancy, effort expectancy, social influence, facilitating conditions, and the dependent variable, behavioural intention (refer to Table 3.1) [Refer to Appendix 1].

Table 3.1
Questionnaire design

Part	Content
Section A	Demographic Information
Section B	Independent Variable
Section C	Dependent Variable

Source: Self- developed, (2025)

The combined Cronbach's alpha for the 7 items was 0.717, as shown in Table 3.3, which exceeds the acceptable minimum of 0.70. This indicates sufficient internal consistency and that the questionnaire items reliably measure the underlying constructs.

3.8 Research Measurement

This section explains how variables are operationalised: behavioural intention is the dependent variable, while perceived ease of use, perceived usefulness, performance expectancy, effort expectancy, social influence, and facilitating conditions are the independent variables. The measure aims to explore the relationship between these variables. Typically, the survey for this research was divided into several sections: Section A, Section B, and Section C, each containing closed-ended items. For Sections B and C, a 5-point Likert Scale was employed. As noted by Hameed et al. (2018), researchers strongly recommend using a 5-point Likert Scale in surveys to improve both response rates and validity. Table 3.3 details the number of sections, total questions, and sources of the items used in this study. The questionnaire was prepared in both English and Malay to ensure clarity and fairness. The translation involved forward and backward translation processes, followed by expert review to ensure accuracy and cultural appropriateness.

Table 3.2

The Summary of Measurement of the Study Construct

Author & Link of Original Paper	Original Question Items	Adopted/Adapted Questionnaire Items	Dwi Language/Bahasa Melayu (if applicable)	Scale of the questionnaire items
IV: Perceived Ease of Use				
Mohammad Taufiq Abdul Ghani et al., (2019)	The instructional online game is simple to utilize, in my opinion.	The system is simple to operate.	*Sistem ini mudah digunakan.*	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
	I had no trouble learning how to use the instructional online game.	I have no trouble learning how to utilize the system.	*Belajar cara menggunakan sistem ini mudah bagi saya.*	
	Gaining proficiency with the instructive digital game is simple.	Gaining proficiency with the system is simple.	*Ianya mudah untuk menjadi mahir dalam menggunakan sistem ini.*	
	It is evident how I connect with the instructional online game.	It is evident how I engage with the system.	*Interaksi saya dengan sistem ini adalah jelas.*	

	The instructional digital game will make it simple for me to find information.	Finding information through the system will be simple for me.	*Ianya mudah bagi saya untuk mencari maklumat melalui sistem ini.*	
IV: Perceived Usefulness				
Mohammad Taufiq Abdul Ghani et al., (2019)	The educational video game will help me learn more effectively.	My performance will be enhanced by the system.	*Sistem ini akan meningkatkan prestasi saya.*	1.Strongly agree 2.Agree 3.Neutral 4.Disagree 5.Strongly disagree
	The instructional video game will boost academic output..	My productivity will rise thanks to the system.	*Sistem ini akan meningkatkan produktiviti saya.*	
	Studying course material may be made simpler by the instructional online game.	Using the system makes my tasks at work easier.	*Tugas di tempat kerja saya menjadi lebih mudah apabila saya menggunakan sistem ini.*	
	The educational video game will improve learning efficacy.	The system will improve my productivity at work.	*Sistem ini akan meningkatkan keberkesanan kerja saya.*	
	The instructional online game is helpful, in my opinion.	The system is helpful, in my opinion.	*Saya mendapati sistem ini berguna.*	
IV: Performance Expectancy				
	I can access academic	I can get information related	*Sistem ini membolehkan saya*	1.Strongly agree

Onaolapo &Oyewole, (2018)	information that is pertinent to my academic pursuits thanks to my smartphone.	to my work activities thanks to the system.	*mengakses maklumat yang berkaitan dengan aktiviti tempat kerja saya.*	2.Agree 3.Neutral 4.Disagree 5.Strongly disagree
	I can utilize my smartphone to learn more effectively.	I can use the system to work more productively.	*Saya boleh bekerja dengan lebih cekap dengan menggunakan sistem ini.*	
	My academic performance is not improved by using smartphones.	I do not do better at work when I utilize the system.	*Penggunaan sistem ini tidak meningkatkan prestasi kerja saya.*	
	Using a smartphone makes it simple to implement literature search and information retrieval.	The technology makes it simple to find information about the workplace.	*Mendapatkan maklumat tempat kerja adalah mudah dengan menggunakan sistem ini.*	
	Using my smartphone for mobile learning has no benefits.	My work activities are not enhanced by the system.	*Sistem ini tidak memberikan nilai tambah kepada aktiviti tempat kerja saya.*	
	I am motivated to utilize a smartphone by the available electronic information resources.	The system's easily accessible information resources encourage me to use it.	*Saya bermotivasi untuk menggunakan sistem ini kerana sumber maklumat yang mudah diakses.*	
	I firmly believe that using a smartphone will enhance my educational endeavors.	I am certain that the method will improve the quality of my work.	*Saya yakin bahawa sistem ini akan menambah nilai kepada kerja saya.*	

	I can keep up with global learning trends by using my smartphone for mobile learning.	I can keep up with worldwide trends in workplace learning by using the system.	*Menggunakan sistem ini membolehkan saya mengikuti tren global dalam pembelajaran di tem,pat kerja.*	
IV: Effort Expectancy				
Onaolapo &Oyewole, (2018)	Stress is not a feature of smartphone use for mobile learning.	Stress is not a feature of using the system at work.	*Penggunaan sistem di tempat kerja tidak dicirikan oleh tekanan.*	1.Strongly agree 2.Agree 3.Neutral 4.Disagree 5.Strongly disagree
	To use my smartphone for mobile learning efficiently, I do not need a lot of technical knowledge.	To utilize the system efficiently at work, I do not need a lot of technical knowledge.	*Saya tidak memerlukan teknikal yang tinggi untuk menggunakan sistem ini dengan berkesan di tempat kerja.*	
	I can use my smartphone to access electronic information resources at any time and from any location.	Through the system at work, I can access information resources pertinent to my job at any time and from any location.	*Saya boleh mengakses sumber maklumat berkaitan kerja di mana-mana dan pada bila bila masa melalui sistem di tempat kerja.*	
	The cost, time, and effort involved in a traditional learning system are decreased when cellphones are used for	Utilizing the system lowers the expenses, time, and effort related to traditional workplace procedures.	*Pengguna sistem ini mengurangkan kos, masa, dan usaha yang berkaitan dengan proses konvensional di tempat kerja.*	

	mobile learning.			
	It is not annoying to use cellphones for mobile learning.	It is not annoying to use the system at work.	*Penggunaan sistem di tempat kerja tidak mengecewakan.*	
	It is challenging to use smartphones for mobile learning due to terminal limitations such small screens, short battery life, and cumbersome input.	System limitations like server failure make job tasks less user-friendly.	*Sekatan sistem seperti kerosakan pelayan mengurangkan kemudahan penggunaan dalam tugas di tempat kerja.*	
	IV: *Social Influence*			
Venkatesh et al., (2003)	Those who have an impact on my conduct believe that I ought to make advantage of the system.	Those who have an impact on my conduct believe that I ought to make advantage of the system.	*Orang yang mempengaruhi tingkah laku berpendapat bahawa saya harus menggunakan sistem ini.*	1.Strongly agree 2.Agree 3.Neutral 4.Disagree 5.Strongly disagree

	Those that matter to me believe that I ought to utilize the system..	I should use the system at work, according to people who are essential to me.	*Orang yang penting bagi saya berpendapat bahawa saya harus menggunakan sistem ini di tempat kerja.*	
	This company's senior management has been supportive in making use of the system.	Using the system has been made easier by the senior management.	*Pihak pengurusan atasan telah membantu dalam penggunaan sistem ini.*	
	The organization has generally encouraged the system's use.	The organization has generally encouraged the system's use.	*Secara amnya, organisasi telah menyokong penggunaan sistem ini.*	
IV: *Facilitating Conditions*				
Sodiq Onaolapo and Olawale Oyewole (2018).	At my university, there is sufficient instruction on using smartphones for mobile learning.	In my organization, there is sufficient instruction on how to use the system.	*Terdapat Latihan yang mencukupi mengenai penggunaan sistem ini dalam organisasi saya.*	1.Strongly agree
	My instructors encourage students to use smartphones for mobile learning.	My supervisor encourages me to use the system.	*Penggunaan sistem ini digalakkan oleh penyelia saya.*	2.Agree
	I am capable of using smartphones for mobile learning.	I am capable of using the system.	*Saya mempunyai kemahiran dan keupayaan untuk menggunkan sistem ini.*	3.Neutral
	To use my smartphone for mobile learning efficiently, I need to get better at ICT.	To use the system at work efficiently, I need to get better at ICT.	*Saya perlu meningkatkan kemahiran ICT saya untuk menggunakan sistem ini dengan berkesan di tempat kerja.*	4.Disagree

	The efficient usage of cellphones for mobile study at my university is hampered by an erratic power supply.	An unstable server makes it more difficult to use the system efficiently at work.	*Kehadiran pelayan yang tidak stabil menghalang penggunaan sistem ini dengan berkesan di tempat kerja.*	5.Strongly disagree
	My university's poor bandwidth and limited Internet connection discourage me from using my smartphone for mobile learning.	I am not motivated to use the system at work when the server breaks down.	*Kerosakan pelayan tidak memberi motivasi kepada saya untuk menggunakan sistem ini di tempat kerja.*	
	Because mobile learning is so complicated, I find it really challenging to use my smartphone.	Because the system is so complicated, I have a terrible time using it at work..	*Saya mendapati sukar untuk menggunakan sistem ini tempat kerja kerana ia agak kompleks.*	

DV: Behavioural Intention (BI)				
Humida, Al Mamun, & Keikhosrokiani, (2021)	I would use the e-learning if I had access to it.	I would use the system if I had access to it.	*Jika saya mempunyai akses kepada sistem ini, saya berniat untuk menggunakannya.*	1. Strongly agree
	I intend to utilize online education in the future.	I intend to make use of the system in the future.	*Saya merancang untuk menggunakan sistem ini pada masa hadapan.*	2. Agree
	I plan to make frequent use of the e-learning platform.	.I plan to use the system a lot in my work.	*Saya berniat untuk menggunakan sistem ini dengan kerap dalam tugas saya.*	3. Neutral
	I suggest that another student utilize the online learning platform.	I suggest that another staff member	*Saya mengesyorkan agar pekerja lain menggunakan sistem ini.*	4. Disagree 5.Strongly

		utilize the system.		disagree

3.9 Data Collection

Data collection in research is the systematic process of obtaining relevant and accurate information to address questions, test hypotheses, and assess results (Sukmawati, 2023). A structured, self-administered questionnaire was used in this study to collect primary quantitative data from employees in the Kulim semiconductor industry. This method was selected because it can efficiently handle a large volume of standardised responses in a short time, making it well suited to the time- constrained nature of a production context. The use of a survey questionnaire is highly justified for this and other reasons, including the study's objectives to gauge attitudes and perceptions of the computerized system, which are better assessed with an objective scale. At the same time, the survey's anonymity encouraged employees to be candid about their experiences with the system without fear of repercussions (Ressler, 2022).

Furthermore, this approach enabled the researcher to access a large, diverse population of system users across shifts and job groups, thereby enhancing the representativeness of the results. Additionally, the survey's formalised format ensured comparable responses, enabling statistical analysis of the data (Zhao & Chen, 2022). The data gathered provided an empirical understanding of the factors affecting user acceptance, aligning with the study's aim of identifying key acceptance-enabling determinants in an industrial setting. In this study, a simple random sampling method was used, in which all employees in the population had an equal chance of being selected. With organisational approval, an absolute sample frame was obtained from formal departmental and system access files, indicating that there are 300 employees who are presently active users of the computerized system.

All employees were assigned identification numbers from 1 to 300. The sampling was then conducted using a computer-based random number generator (Microsoft Excel RAND function) to select 169 respondents, which is the suggested sample size according to Krejcie and Morgan (1970). This approach removed selection bias and ensured a random selection of participants. After carrying out the random selection process, the sampled respondents were contacted using their supervisors at respective departments to seek permission and ensure that the right time was established. The questionnaires were then made available in printed form during working hours for physical pickup to facilitate access for all respondents, especially those on the production floor.

A part of the study objective was provided in a brief description of what was needed for each questionnaire, an assurance of confidentiality, and a clear explanation of how the questionnaires were to be completed. Both respondents had a good time filling out the questionnaire and sending it back in closed envelopes to ensure anonymity. This process fell under personal data collection, during which the researcher did not engage any enumerators. This approach ensures consistent communication, minimises information distortion, and allows the researcher to clarify respondents' concerns while taking great care to avoid influencing their responses.

3.10 Data Analysis Technique

3.10.1 Descriptive Analysis

Descriptive analysis was conducted to generalise and describe the respondents and key study variables. SPSS was used to produce frequency distributions, percentages, means and standard deviations for the demographic variables. The main aim was to present the demographic information and collect details for use in analysing the findings. A total of 4 statements provided specific information, such as gender, academic qualification, work position and ethnicity. This discussion provided a general overview of the respondents' profiles and their perceptions of the computerized system. Descriptive statistics were also useful for detecting trends in responses and determining the suitability of the data for subsequent inferential statistics.

3.10.2 Normality Analysis

Normality was tested to determine whether the data distribution met the conditions required for parametric statistical testing. Q-Q plots in SPSS were used to assess the normality of each construct (Mertler et al., 2021). The distribution of the designs appeared roughly normal, according to visual inspection, indicating that the data points closely matched the diagonal reference line. As a result, parametric tests, including multiple regression, linear regression, and correlation, were deemed suitable.

3.10.3 Reliability Analysis

Reliability analysis was conducted to evaluate the internal consistency of the questionnaire items. Cronbach's alpha coefficient was calculated for the respective constructs, namely perceived ease of use, perceived usefulness, performance expectancy, effort expectancy, social influence, facilitating conditions, and employees' behavioural intention to use (Khanal & Chhetri, 2024). An alpha of 0.70 or above was regarded as satisfactory, indicating satisfactory reliability. This analysis showed that the items of each construct consistently measured the same underlying concept, thereby providing credibility and accuracy to the collected data.

3.10.4 Correlation Analysis

Correlation analysis was conducted to examine the strength and direction of relationships among the independent variables and between these variables and employees' behavioural intention to use the system. The Pearson correlation coefficient was used because the data satisfied the assumptions of normality and measurement at the interval level. The results indicated positive, negative, or non-significant relationships, providing initial evidence to support or challenge the hypotheses (Khanal & Chhetri, 2024). Additionally, correlation analysis helped identify potential multicollinearity issues before performing multiple regression analysis.

Table: 3.3

Correlation strength into 5 level ranging from every weak to very strong

Range of Correlation Coefficient Value	Level of Correlation	Range of Coefficient Value	Level of Correlation
0.8 to 1.00	Very strong Positive	-1.00 to -0.80	Very strong Negative
0.6 to 0.79	Strong Positive	-0.79 to -0.60	Strong Negative
0.40 to 0.59	Moderate Positive	-0.59 to -0.40	Moderate Negative
0.20 to 0.39	Weak positive	-0.39 to -0.20	Weak Negative
0.00 to 0.19	Very Weak Positive	-0.19 to -0.01	Very weak Negative

Source: Cohen (1988)

3.10.5 Multiple Regression Analysis

A multiple regression analysis was conducted to assess how various independent variables predict employees' behavioural intention to use the computerised computerized system. The variables included perceived ease of use, perceived usefulness, performance expectancy, effort expectancy, social influence, and facilitating conditions, all entered simultaneously into the regression model (Khanal & Chhetri, 2024). The analysis focused on the significance of each predictor, the overall model fit, and the strength of each variable's association with behavioural intention. This method enabled testing hypotheses and identifying the most influential factors affecting system acceptance.

3.11 Chapter Summary

This chapter outlines the methodology employed to examine employees' acceptance of the computerized system at a Semiconductor Company in Kulim. It provides an overview of the research framework, hypotheses, and the rationale for choosing an inductive quantitative research design. The analysis focused on individual employees, as behavioral intention was assessed at the personal level. To minimise bias, simple random sampling was used, and data collection was conducted via a structured questionnaire. Validated instruments measured each research variable, ensuring data reliability and supporting data-driven insights into system acceptance. This chapter effectively sets the stage for the subsequent sections of the research.

CHAPTER FOUR

RESULTS

4.1 Introduction

In this chapter, the research results are presented, with an emphasis on screening the data obtained, assessing reliability, and analysing relationships among the research variables. The findings provide insight into factors that contribute to behavioural intentions towards adopting the system in the organisational environment.

4.2 Rate of Response

Data collection for this research was carried out using a questionnaire, which was made available in printed form during working hours to facilitate access for all respondents, particularly those on the production floor. A population of 300 employees from a semiconductor company was chosen to collect the data. Krejci and Morgan's (1970) table was utilised to determine the sample size. According to the table, a sample size of 169 was recommended for a population of 300. Around 169 questionnaires were distributed to respondents working at the company, in line with the minimum sample size. 169 employees completed and returned the questionnaire, resulting in a 100% response rate. This response rate for the research is illustrated in Table 4.1 below.

Table 4.1:
Respond Rate:

Item	Total	Percentage (%)
Distributed Questionnaires	169	100
Collected Questionnaires	169	100
Completed Questionnaires	169	100
Uncompleted Questionnaires	0	0

4.2.1Demographic Profile of Respondents

Table 4.2
Summary of Respondents' Demographic Profile

Variable	Classification	Frequency	Percentage
Gender	Male	79	53.3
	Female	90	46.7
Academic	SPM	46	27.2
	Diploma	90	53.3
	Bachelors	20	11.8
	Master	13	7.70
Working Experience (Year of experience)	Less than 5 years	19	11.2
	6-10 years	50	29.6
	11-15 years	60	35.5
	More than 15 years	40	23.7
Ethnicity	Malay	140	82.8
	Chinese	4	2.3
	India	25	14.8
Total		**169**	**100**

Table 4.2 presents the demographic profile of the 169 respondents in this study. In terms of gender, the majority of participants were female (53.3%), while males made up 46.7% of the sample. The academic qualifications are largely vocationally oriented, as evidenced by the fact that the majority of respondents (53.3%) hold a diploma, fewer have a bachelor's SPM (27.2%), and just a small percentage have degrees (11.8) or master's (7.7%). The majority are mid-to late-career workers, with the largest group having 11-15 years of service (35.5%), followed by 6-10 years (29.6%) and more than 15 years (23.7%), indicating a stable and seasoned workforce. Finally, Malay makes up the majority ethnic representation (82.8%), followed by Indian (14.8%) and Chinese (2.3%). Taken as a whole, these findings demonstrate

a workforce that is technically proficient, seasoned, and ethnically diverse, offering a solid foundation for analysing HR tactics and technology adoption in the manufacturing company.

4.2.2 Variable Statistics

Based on a five-point Likert scale, the table provides the mean score and standard deviation for each variable. The factors are listed below.

Table 4.3
Descriptive Result

Variables	Mean	Median	Std Deviation
Perceived ease of use	2.09	1.8	0.81032
Perceived usefulness	2.09	1.8	0.83921
Performance expectancy	2.76	2.8	0.69164
Effort expectancy	2.93	3.0	0.69781
Social Influence	2.04	1.8	0.82871
Facilitating condition	2.85	2.9	0.68327
Behavioral Intention (DV)	2.25	2.0	0.77871

Table 4.3 presents the descriptive results for seven key variables related to technology acceptance, based on the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). The average scores for perceived usefulness and perceived ease of use (2.09) indicate that respondents generally agree that the system is useful and easy to operate. These concepts are central to TAM, as Davis (1989) emphasised that perceived ease of use and usefulness significantly influence user acceptance. The relatively small standard deviation (0.81) and median value (1.8) suggest some variability in responses, possibly due to differences in exposure or digital literacy levels.

The higher mean scores for performance expectancy (2.76) and effort expectancy (2.93) suggest users believe the technology enhances job performance and is straightforward to use. These findings align with UTAUT, in which these variables are strong predictors of behavioural intention, as noted by Venkatesh et al. (2003). The low standard deviation (0.69) indicates consistent perceptions among respondents. Conversely, social influence scored lower at 2.04, suggesting that company or peer pressure may not be the primary driver of technology adoption in this context. This aligns with research in Malaysian manufacturing settings, where social norms are often secondary to individual benefits (Marikyan & Papagiannidis, 2025). On the other hand, the highest mean score was given to facilitating conditions (2.85), indicating that users believe they need to use the technology. This supports UTAUT's claim that technical assistance and infrastructure are essential facilitators of system utilisation.

Lastly, the dependent variable, behavioural intention, shows moderate readiness to use the system (2.25). This result implies that, even though consumers are aware of the system's advantages and simplicity, other elements, such as perceived relevance or organisational preparedness, may influence their ultimate choice.

In conclusion, the descriptive results demonstrate the significance of usability, performance advantages, and support structures in influencing technology adoption behaviour, supporting the theoretical foundations of TAM and UTAUT.

4.2.3 Reliability Test

This section of the study evaluates the reliability of the items for each variable. The table below presents the results of the reliability tests.

Table 4.4
Reliability Test Table

Variables	Responses	Number of Item	Cronbach Alpha
Perceived ease of use	169	5	0.975

Perceived usefulness	169	5	0.981
Performance Expectancy	169	8	0.948
Effort Expectancy	169	6	0.873
Social Influence	169	4	0.970
Facilitating Condition	169	7	0.938
Behavioral Intention	169	4	0.976

Table 4.4 present the reliability analysis for each contrast using Cronbach's Alpha, which assesses the internal consistency of the measurement item. According to Nunnally (1978), a Cronbach Alpha value above 0.70 is considered acceptable, while Hair et al. (2014) suggests that value above 0.90 indicate excellent reliability. In this research, excellent internal consistency is indicated by Cronbach's Alpha value above 0.87 for every construct. Especially PU (0.981) and PEOU (0.975) exhibit the highest reliability, supporting the robustness of Davis (1989) technology acceptance model (TAM), which highlight these two categories as essential to user acceptance prediction.

Secondly, strong dependability is also shown by performance expectancy (0.948) and facilitating condition (0.938), which align with unified theory of acceptance (UTAUT) framework put forward by Venkatesh et al. (2003). These elements are essential for determining whether users believe the system can help them complete activities and whether the infrastructure needed to support use is in place. The UTAUT model's relevance is also supported by effort expectancy (0.873) and social influence (0.970), especially in Malaysia organization contexts where peer pressure and perceived ease of use can significantly shape behavioral intention (Hasni et al, 2023). The strong alpha for SI indicates that responder consistently interpret social norms and expectation.

4.2.4 Data Screening

Data screening was conducted to assess data quality and suitability for further statistical analyses. This process did not include missing-value analysis or assessment of the normality of all study constructs. The screening results indicate that the dataset is clean, normally distributed, and free of missing values or extreme outliers (Sharifnia et al. 2025). The results meet the assumptions of parametric statistical methods, thereby justifying the validity of the subsequent correlation, regression, or structural equation modelling analyses.

4.2.5 Missing Value Analysis

As shown in Table 4.5, the missing value analysis indicates that all 169 cases were complete, with no missing values (0.0) across all constructs: perceived ease of use, perceived usefulness, performance expectancy, effort expectancy, social influence, facilitating conditions, and behavioural intentions.

Table 4.5
Analysing Missing Values

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Perceived ease of use	169	100%	0	0.0%	169	100%
Perceived usefulness	169	100%	0	0.0%	169	100%
Performance expectancy	169	100%	0	0.0%	169	100%
Effort expectancy	169	100%	0	0.0%	169	100%
Social Influence	169	100%	0	0.0%	169	100%
Facilitating condition	169	100%	0	0.0%	169	100%
Behavioral Intention	169	100%	0	0.0%	169	100%

This is an assurance that the questionnaire was fully completed by the respondents, indicating clear item phrasing and effective survey administration. Furthermore, no extreme values were observed according to the interquartile range (IQR) criteria, which indicates that there were no extreme values likely to skew the statistical estimates. The means and standard deviations also support the presence of reasonable variability in the responses, which in turn supports the sufficiency of the data for inferential analysis (McGrath et al. 2020).

4.2.6 Normality Test

According to a study by Tabachnich and Fidella (2013), the normality of research constructs can be assessed using either graphical or statistical methods. In this study, Q-Q plots were used as part of the graphical approach, providing a visual check of whether the data distribution approximates normality. Hair et al. (2010) emphasises the usefulness of graphical techniques like Q-Q plots for detecting deviations from normality, and Field (2013) notes that these methods are particularly beneficial with larger samples, where statistical tests might be overly sensitive. These findings support the effectiveness of this method. The visual inspection of these graphs provides additional evidence of the distributional properties observed in normality tests, justifying the application of parametric analysis to the data (Tokdar & Martin, 2021).

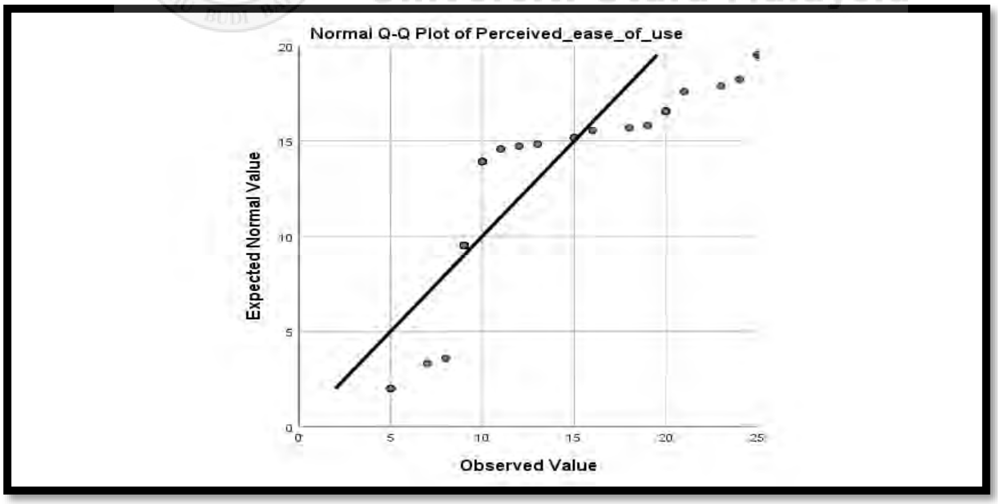

Figure 4.1:
Normality Q-Q for Perceiveed_ease_of_use

Figure 4.1 (Perceived Ease of Use) shows a roughly symmetric distribution, with most data clustered at the centre and tapering off towards both ends. The absence of significant outliers indicates that respondents' perceptions of system ease of use are approximately normal rather than perfectly normally distributed, supporting the assumption of normality (Tokdar & Martin, 2021).

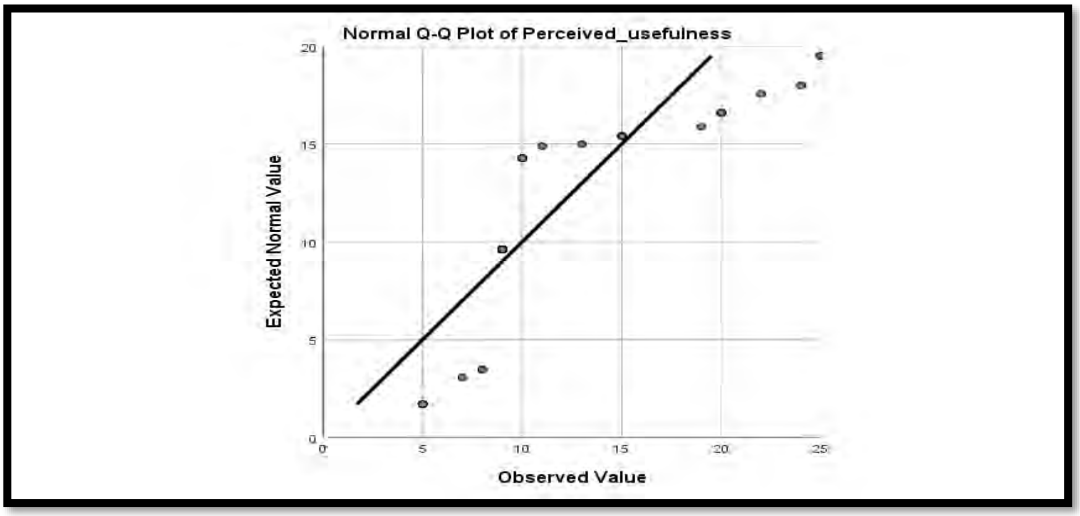

Figure 4.2:
Normality Q-Q plot for Perceiveed_usefulness

The same is reflected in Figure 4.2 (Perceived Usefulness), which shows a line plot with no skewness or kurtosis. This indicates that sentiment among respondents is relatively balanced regarding the system's usefulness, and that the responses are approximately normal rather than perfectly normally distributed around the central tendency.

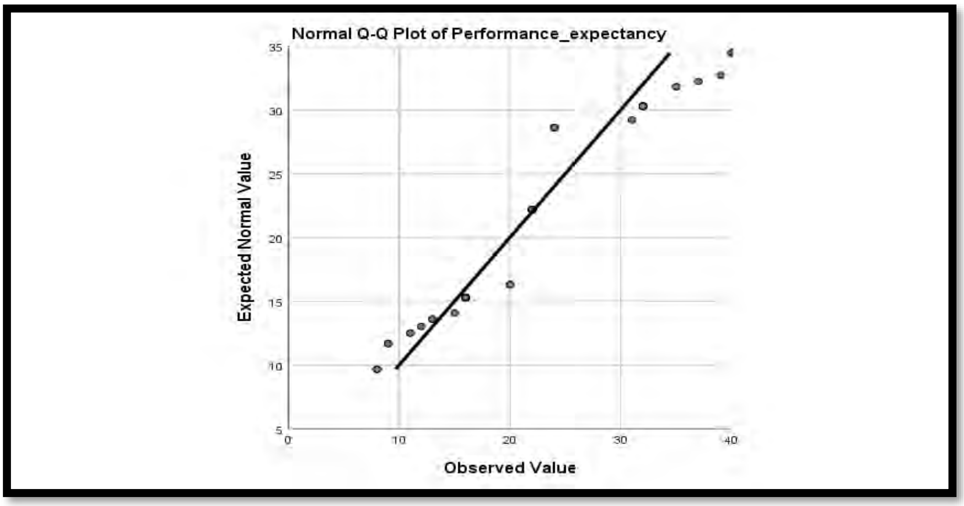

Figure 4.3
Normality Q-Q plot for Performance_expectancy

Figure 4.3 (Performance Expectancy) shows a slightly wider distribution, which is more indicative of the variation in respondents' expectations regarding performance improvement. Nevertheless, the overall shape remains symmetric, and there are no outliers, supporting the acceptable assumption of an approximately normal rather than perfectly normally distributed normal (Faulkenberry, 2021).

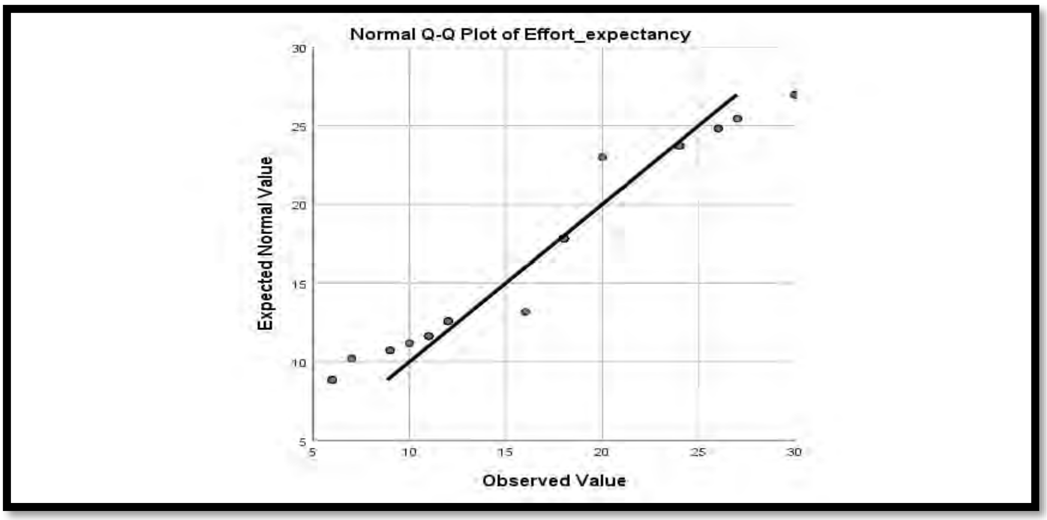

Figure 4.4

Normality Q-Q plot for Effort_expectancy

The distribution presented in Figure 4.4 (Effort Expectancy) is smooth and centrally concentrated. The gradual line indicates that respondents have similar feelings about the effort required to use the system. The data distribution is approximately normal rather than perfectly normal, and there is no distortion of responses (Bayoud, 2021).

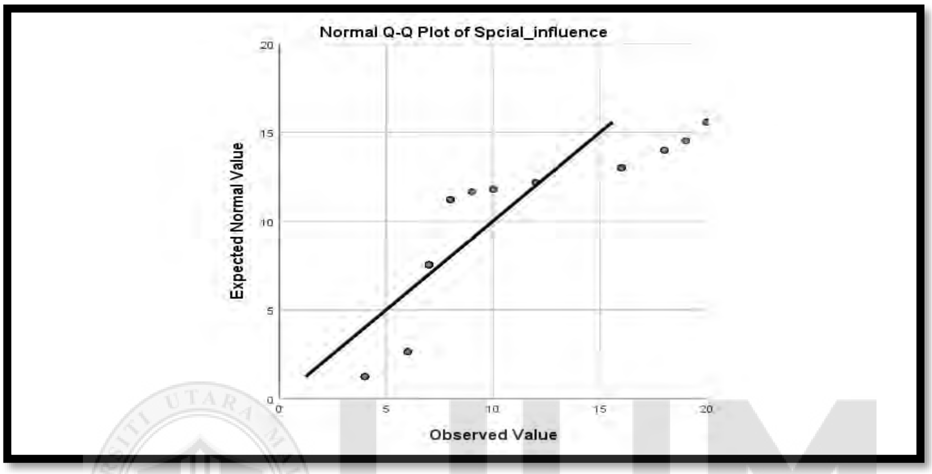

Figure 4.5
Normality Q-Q plot for Social_influence

Figure 4.5 (Social Influence) has a compact distribution with low dispersion, meaning that there is a relative homogeneity in perceptions of social and organizational influence on the use of systems. The data are approximately normally distributed rather than perfectly normally distributed.

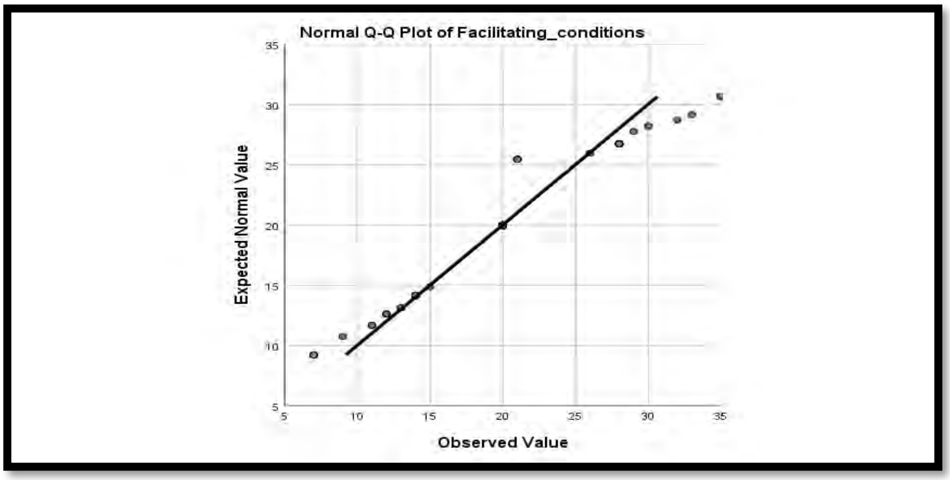

Figure 4.6
Normality Q-Q plot for Facilitating_conditions

Figure 4.6 (Facilitating Conditions) shows that the distribution of data is approximately normal rather than perfectly normally distributed. This suggests some variation in respondents' perceptions of organisational and technical support, yet these perceptions still follow the assumptions of a normal distribution (Lenart-Gansiniec et al. 2025).

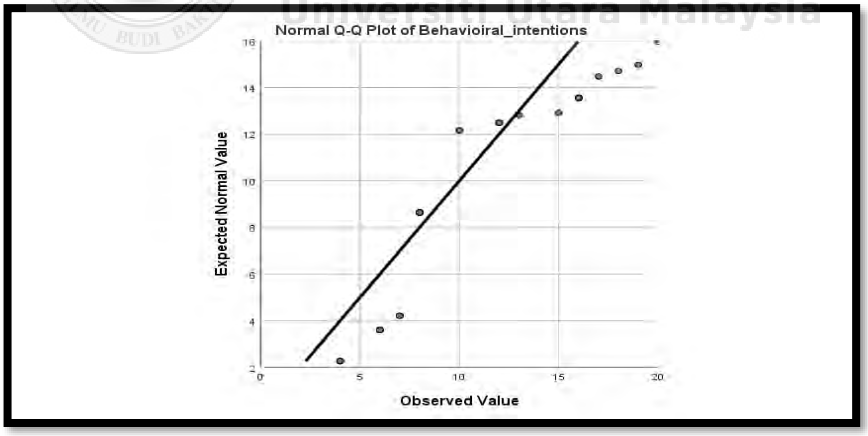

Figure 4.7:
Normality Q-Q plot for Behavioural_intentions

Figure 4.7 (Behavioural Intentions) shows the distribution of data is approximately normal rather than perfectly normally distributed around the mean with no extremes or anomalies. This attests to the fact that the intentions of the respondents to use the system are always reflected throughout the sample.

4.2.7 Correlation Analysis

Table 4.6 shows that there are several statistically significant relationships (p < 0.01). The correlations among perceived usefulness, performance expectancy, social influence, facilitating conditions, and behavioural intentions are high; the theoretical alignment is good in relation to the technology acceptance literature (Alshammari & Rosli, 2020). On the other hand, perceived ease of use and effort expectancy show negative correlations with certain constructs, suggesting that wording or contextual interpretation effects may need to be resolved before the actual research.

Table 4.6
Correlation Analysis

Independent Variable	**Dependent Variable**	***r*-value**	**Sig (Two-tailed)**
Perceived ease of use		0.912	<.001
Perceived usefulness		0.939	<.001
Performance expectancy		0.813	<.001
Effort expectancy	Behavioral	0.702	<.001
Social Influence	Intention	0.933	<.001
Facilitating condition		0.814	<.001

Table 4.6 displays the correlation coefficients between independent variables and the dependent variable. All variables demonstrate strong to very strong positive correlations, with values ranging from 0.702 (effort expectancy) to 0.939 (perceived usefulness). The strongest correlation was found between perceived usefulness and behavioral intention (r= 0.939), followed by social influence (r=0.933) and perceived ease of use (r= 0.912), highlighting these factors as key predictors of behavioral intention. All relationships are statistically significant

at p <.001, confirming their reliability. These findings support the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT), which underscore the importance of usefulness, ease of use, and social influence in shaping user intentions.

4.2.8 Multiple Linear Regression

The regression analysis shows that the proposed model is very strong in explaining behavioural intentions. The most significant determinants are facilitating conditions, expectancy of effort, and perceived usefulness, whereas perceived ease of use and performance expectancy play minor roles when other predictors are present (Alquhaif & Al-Mamary, 2025). The findings provide strong empirical support for the technology acceptance theory and can be of great use to decision-makers in organisations keen to improve the acceptance of systems. A multiple linear regression analysis was used to test the effects of perceived ease of use, perceived usefulness, performance expectancy, expectation of effort, social influence, and facilitating conditions on behavioural intentions to use the system (Chaveesuk et al., 2022). The regression model used an enter approach, in which all predictors were entered simultaneously.

Table 4.7
Result of Model Summary

Model	R	R Square	Adjusted R Square
1	0.961	0.924	0.924

The model summary indicates how effectively the independent variables (IVs) predict the dependent variable (DV), which is behavioral intention. The R Square value is 0.924, showing that 92.4% of the variations in behavioral intention are explained by the six independent variables: perceived ease of use, perceived usefulness, effort expectancy, facilitating conditions, performance expectancy, and social influence. This demonstrates that the model is highly robust and dependable. The Adjusted R Square is also 0.924, confirming that the result is stable even after accounting for the number of variables and the sample size.

Table 4.8
ANOVA Table

Model	Sum of Square	df	Mean Squares	F	Sif
Regression	1506.137	6	251.023	328.376	<.001
Residual	123.839	162	.764		
Total	1629.976	168			

Table 4.8 explains the ANOVA table, which helps determine whether the overall regression model is statistically significant. In this study, the F-value is 328.376 and the Sig value is less than .001, indicating that the model is highly significant. This suggests that the combination of independent variables significantly explains the variations in behavioural intentions (Fauzan et al. 2024). It confirms that variables such as perceived ease of use, perceived usefulness, effort expectancy, performance expectancy, social influence, and facilitating conditions can reliably predict the dependent variable of behavioral intention.

4.2.9 Regression Coefficient

These regression results, therefore, must be treated with care and used only to refine instruments, not to confirm hypotheses (Roustaei, 2024).

Table 4.9
Regression Coefficient

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	T	Sig.
1	(Constant)	.788	.321		2.455	.02
	Perceived_ease_of_use	-.027	.079	-.035	-.338	.74
	Perceived_usefulness	.301	.124	.406	2.434	.02
	Performance_expectancy	.100	.087	.178	1.153	.25
	Effort_expectancy	-.413	.089	-.555	-4.640	.00
	Social_influence	.351	.181	.374	1.937	.05
	Facilitating_conditions	.377	.045	.578	8.336	.00

The individual regression coefficients in Table 4.9 provide insights into the relative importance of each predictor, controlling for the others. Facilitating conditions emerge as the strongest positive predictor of behavioural intentions ($\beta = 0.578$, $t = 8.336$, $p < 0.001$), indicating that organizational support, resources, and infrastructure are crucial in shaping users' willingness to adopt the system (Ariawan et al. 2023). Effort expectancy shows a significant negative impact on behavioural intentions ($\beta = -0.555$, $t = -4.640$, $p < 0.001$), suggesting that perceived complexity or effort reduces users' willingness to use the system, highlighting the importance of simplicity.

Perceived usefulness positively influences behavioural intentions significantly ($\beta = 0.406$, $t = 2.434$, $p = 0.016$), aligning with the core assumptions of the Technology Acceptance Model (TAM) that perceived usefulness is a key predictor of usage intention (Mahmoodi et al. 2023). Social Influence has a modest but significant positive effect ($\beta = 0.374$, $p = 0.05$). The impact of performance expectancy on behavioural intentions ($\beta = 0.178$, $p = 0.251$) is not statistically significant, indicating that performance improvement expectations do not independently predict intention after controlling for other factors. Additionally, perceived ease of use shows no significant relationship with behavioural intentions (β = –0.035, p = 0.736), possibly due to multicollinearity with effort expectancy and perceived usefulness or because familiarity with the system diminishes concerns about ease of use (Hull et al. 2022). Table 4.10 presents the results of the hypothesis testing.

Table 4.10
Summary of Hypothesis Testing

Hypothesis	Statement	Decision
H1	Employee behavioral intention to use the Computerized system is significantly influenced by perceived ease of usage.	Not Supported
H2	The behavioral intention of employees to utilize the Computerized system is significantly influenced by perceived usefulness.	Supported
H3	The behavioral intention of employees to utilize the Computerized system is significantly influenced by their performance expectations.	Not Supported
H4	The behavioral intention of employees to utilize the Computerized system is significantly influenced by Effort Expectancy.	Supported
H5	The behavioral intention of employees to utilize the Computerized system is significantly influenced by social influence.	Supported
H6	The behavioral intention of employees to utilize the Computerized system is significantly influenced by facilitating conditions.	Supported

Hypothesis 1

There is no significant influence of perceived ease of use on employees' behavioural intention to use the computerized system. Regression analysis results in Table 4.9 show no significant relationship between perceived ease of use and behavioural intention, with a coefficient of -0.027 and a significance value of 0.736. The p-value is well above the 0.05 threshold, indicating that perceived ease of use does not significantly impact employees' intention to use the system. Therefore, Hypothesis 1 is not supported in this study. This finding aligns with prior studies that found ease of use to be insignificant once users have baseline familiarity with technology. In organisational contexts, behavioral intention is often shaped more by perceived usefulness, management directives, and mandatory requirements than by usability. Therefore, ease of use may be considered a background expectation rather than a decisive factor in predicting employees' intention to adopt the computerized system.

Hypothesis 2

As shown in Table 4.9, perceived usefulness has a positive and statistically significant effect on behavioural intention, with a coefficient of 0.301 and a p-value of 0.016. Since the p-value is below 0.005, this confirms that perceived usefulness is a meaningful predictor of intention. Thus, Hypothesis 2 is supported, aligning with the Technology Acceptance Model (TAM).

Hypothesis 3

The regression output indicates a coefficient of 0.100 and a p-value of 0.251 for performance expectancy. This p-value exceeds the 0.05 threshold, suggesting that expectations of improved performance do not significantly affect behavioural intention in this context. Therefore, Hypothesis 3 is not supported.

Hypothesis 4

Effort expectancy shows a significant negative effect on behavioural intention, with a coefficient of -0.413 and a p-value of 0.000. This result implies that higher perceived effort reduces the intention to use the system. Since the p-value is below 0.001, the hypothesis is supported.

Hypothesis 5

Social influence has a coefficient of 0.351 and a p-value of 0.054. This is slightly above the conventional 0.05 threshold, suggesting a marginal effect. Therefore, the hypothesis is supported.

Hypothesis 6

Facilitating conditions show the strongest positive effect, with a coefficient of 0.377 and a highly significant p-value of 0.000. This indicates that organisational support and resources play a crucial role in shaping behavioural intention. So, Hypothesis 6 is supported.

4.3 Summary of the Chapter

This chapter has been summarised as showing that the data were robust and suitable for analysis, and that the determinants identified were important in shaping behavioural intentions. The results provide a sound basis for interpretation, discussion, and conclusion in the chapter.

CHAPTER FIVE

DISCUSSION

5.1 Introduction

The chapter summarises the entire research, including the objectives, methodological procedures, research findings, and other elements. The initial section of this chapter links the findings to the objectives, aligning all research findings obtained from the data analysis with the objectives of this study. The primary aim of this research is to examine the factors influencing employees' behaviours and intentions to utilise a computerised system at their workplace. In addition, the research aims to address several gaps in this research area. The summarisation presented in this chapter justifies the achievement of these research goals and the methodological choices.

5.2 Discussion on Research Finding

5.2.1 Perceived ease of use is not significant factor that influence the employees' behavioral intention to use the computerized system.

Based on analysis in chapter 4, it is reported that perceived ease of use is not significant factors that influence the employees' behavioral intention to use the computerized system. A similar finding was also reported in a study by Shahreki et al. (2020), who reported that when considering utility and organisational support, perceived ease of use does not significantly affect electronic system adoption. Moreover, according to Podkamien and Perez (2020), employee decisions are more affected by perceived usefulness and social impact. They also demonstrated that perceived ease of use mainly acts as a moderating factor rather than a direct predictor of intention. This indicates that employees prioritize efficiency and outcomes over simplicity. In a comprehensive cross-national study, Lee et al. (2023) found that perceived usefulness and psychological states are stronger predictors of enterprise system adoption than ease of use. They also observed that the influence of perceived ease of use tends to diminish as users become more familiar with the system. Collectively, these studies indicate that PEOU is often not significant because employees in organisational contexts are motivated more by the system's ability to improve performance, the presence of organisational support, and the assurance of long-term efficiency. Thus, while ease of use may reduce initial barriers, its importance declines over time, making perceived usefulness, effort expectancy, and facilitating conditions the dominant factors shaping sustained behavior intention.

5.2.2 Perceived usefulness is the significant factors that influence the employees' behavioral intention to use the computerized system.

Perceived usefulness was found to be a key determinant of employees' intention to use the Computerized system, aligning with the fundamental principles of the Technology Acceptance Model (TAM). The regression analysis indicated that employees are more inclined to adopt the system when they believe it enhances their job performance. This result is consistent with Mahmoodi et al. (2023), who identified perceived usefulness as the most influential factor in technology acceptance across organisational settings. Likewise, Shahreki et al. (2020) reported that, in the context of electronic HRM adoption, perceived usefulness was a stronger predictor of employees' behavioural intention to use the system than perceived ease of use.

According to Lee et al. (2023), perceived usefulness remains a consistent driver of enterprise system adoption, even when perceived ease of use and performance expectancy play a weaker role. Taken as a whole, these studies show that workers value a system's efficiency and practical advantages more, proving that perceived usefulness is a major factor influencing behavioural intention in the adoption of organisational technology. The significance of PU across these studies is explained by several factors, such as job performance enhancement, where employees adopt systems that help them achieve goal more efficiently, task relevance, as system that align with daily responsibilities are perceived as more valuable, organisational support, which reinforce the usefulness of the system through training, resources, and communication and trust and transparency, where fairness and privacy in system implementation strengthen employees' belief in its long-term utility. Collectively, these findings confirm that PU is significant because employees are more willing to embrace technology when they perceived clear, practical advantage that improves both individual and organisational outcomes. Based on the results, it is advised that the semiconductor company provide ongoing training and communication so that employees are fully aware of the system's advantages and can relate it to their daily tasks. Secondly, improved organisational support with easily accessible IT resources, such as user manuals and helpdesks, will guarantee usability and lower potential resistance. Additionally, addressing fairness, privacy, and openness in system implementation will reassure employees and promote long-term adoption by encouraging trust and transparency.

5.2.3 Performance expectancy does not influence employees' intention to adopt technology.

The regression analysis found that performance expectancy does not significantly influence employees' intention to use the technology. This suggests that, after accounting for other predictors like facilitating conditions and effort expectancy, employees' expectations of improved performance are not essential in shaping their behavioral intentions. A similar finding was also reported in a study by Fridkin et al (2024), which found that in a mandatory enterprise system, performance expectancy was not a significant predictor because employees had no choice but use the system, making organisational support and facilitating conditions more decisive. Previous research has shown that organizational support and system simplicity often have a greater impact than performance expectancy on behavioral intention (Venkatesh et al., 2003). In some cultural contexts, such as Saudi Arabia's e-learning adoption, performance expectancy was found to be significant (Al-Gahtani, 2016). A meta-analysis of UTAUT applications further indicated that the role of performance expectancy varies across studies (Dwivedi et al., 2019). Taken together, these studies suggest that performance expectancy is often not significant because employees assume performance improvement as given, while adoption is more strongly influenced by factors such as organisational support, system simplicity, perceived usefulness, and facilitating conditions.

5.2.4 The significant influence between effort expectancy and employee's behavioral intention to use the computerized system.

Studying the link between effort expectancy (EE) and employees' behavioral intention to use the system at a semiconductor company in Kulim was the fourth objective of this study. Employee expectations related to accessibility, ease of learning, and cost, time, and effort reduction were successfully met, as shown by the descriptive statistics, which yielded an average score of 5.0. Additionally, regression analysis confirmed a beneficial and statistically significant correlation between EE and behavioral intention, suggesting that employees are more likely to adopt systems that are easy to use and require less technical knowledge. This aligns with the findings of Rahi et al. (2019), who found that effort expectancy significantly influences technology adoption in service industries, and Itasanmi (2023), who highlighted that ease of use enhances behavioral intention and reduces resistance in organisational settings.

Similarly, Gajendragadkar et al. (2024) demonstrated that employee engagement and long-term use are boosted by digital technologies perceived as easy to operate. Taken together, these findings confirm that EE is significant because employees are more likely to adopt and continue using system that minimize technical complexity, reduce cognitive load, and provide straightforward pathways to proficiency, thereby enhancing productivity and long-term organisational efficiency. The semiconductor company should focus on making the computerized system as user-friendly as possible to ensure employees continue using it effectively without feeling overwhelmed. Providing brief training sessions and simple instructions can help employees quickly become proficient without needing additional technical skills. Furthermore, listening to employee feedback and addressing minor issues early will keep the system useful and supportive of daily tasks. These steps will enhance overall office productivity, increase employees' comfort, and motivate ongoing use of the system.

5.2.5 The significant influence of social influence on employees' behavioural intention to use.

The findings indicate that social influence has a significant positive impact on employees' behavioural intention to use the system. This suggests that encouragement from supervisors, peers, and organisational culture plays an important role in shaping employees' willingness to adopt new technology. This outcome is consistent with the Unified Theory of Acceptance and Use of Technology (UTAUT), which highlights that individuals are more likely to embrace a system when they perceive that important others expect them to do so (Venkatesh et al., 2003). Supporting evidence can also be found in Al-Gahtani's (2016) study on e-learning adoption in Saudi Arabia, which showed that social influence significantly affects user acceptance. More recently, Gajendragadkar et al. (2024) demonstrated that social influence continues to play a critical role in digital technology adoption, as peer encouragement and managerial support were found to boost employee engagement and sustain long-term system use.

According to Dwivedi et al. (2019), a meta-analysis of UTAUT applications confirmed that social influence remains a reliable predictor of technology adoption across different organisational and cultural contexts. Taken together, these studies confirm that social influence is significant because employees are more likely to adopt and continue using computerized systems when they feel supported by their colleagues, supervisors, and organisational culture, reinforcing the importance of collective expectation and share norms in driving technology acceptance. To normalise adoption throughout the workplace, organisations should first make use of peer advocates who serve as role models by demonstrating efficient system use and motivating employees. Secondly, managers who actively promote and use the system themselves reassure employees of its significance and foster confidence; therefore, clear communication and visible managerial support are crucial. Thirdly, to promote collective assurance and reinforce the positive social influence that SPSS analysis confirmed as a significant predictor of behavioural intention, collaborative training programmes should be put in place that enable employees to learn together, share experiences, and support one another.

5.2.6 The significant influence between facilitating condition and employees' behavioral intention to use.

Recognizing that organisational and technical support variables play a critical role in shaping technology acceptance, the sixth study focused on how facilitating conditions affect employees' behavioral intentions to use the system. SPSS analysis revealed a strong positive correlation. This finding aligns with the UTAUT framework, which highlights facilitating conditions as a key factor influencing system use (Venkatesh et al., 2003). Similar results were reported by Taylor and Todd (1995) and Ifinedo (2012), who stressed the importance of organizational resources, training, and infrastructure in supporting system adoption. According to this research, employees' intention to use the system is strengthened by their perception that sufficient support, such as reliable technology, clear guidance, and workplace readiness, is essential for enhancing productivity and efficiency. Similarly, Gajendragadker et al. (2024)

found that digital technologies were more readily accepted when employees perceived strong managerial and technical support, which enhanced trust and sustained long -term engagement. Collectively, these studies confirm that facilitating conditions are significant because employees are more likely to adopt systems when they feel supported by reliable technology, clear guidance, and organisational readiness. The factors that make the facilitating condition significant include the availability of resources and infrastructure, training and technical support, integration with existing workflows, and organisational commitment through incentives and recognition. These elements reduce uncertainty, build trust, and strengthen employees' confidence in the system, thereby motivating sustained adoption and effective use.

Based on the significant link between employees' behavioral intention and facilitating conditions, three suggestions are proposed. First, companies should establish a feedback system that allows employees to report technical issues or recommend improvements, ensuring continuous system enhancement and building trust in its reliability. Second, integrating the system with existing workplace tools and procedures will reduce duplication and create a seamless workflow, thereby improving perceptions of the system's usefulness and ease of adoption. Third, implementing incentive structures related to the system, such as performance credits or recognition programs, can motivate employees to engage more actively and demonstrate the organisation's commitment to using the digital platform as a key productivity tool.

5.3 Contribution of the study

5.3.1 Practical Contribution

This study offers valuable insights for organisational management within the semiconductor company. The findings highlight that employees' behavioral intention to adopt the computerized system is strongly influenced by perceived usefulness, ease of use, social influence, and facilitating conditions. For managers, this study highlights several key strategies to enhance employee behavioral intention of the computerized system. Management should demonstrate clear benefits by showcasing tangible outcomes, such as time savings, reduced errors, and improved operational efficiency. Ensuring the system remains user-friendly is equally important, as a simple, intuitive design minimises resistance and encourages sustained use. Strong organisational support, including training programs, user manuals, and responsive IT assistance, is necessary to provide employees with the resources they need to operate the system effectively. In addition, supervisor and team leaders play a crucial role in leveraging leadership and peer influence by modelling system use and motivating their team to adopt it. Taken together, these practical contributions guide the company practitioners is designing interventions that foster employee acceptance and long-term utilization of monitoring technologies, ultimately driving productivity and operational excellence.

5.3.2 Empirical Contribution

Empirically, this study advances the body of knowledge on technology adoption by validating the applicability of TAM and UTAUT constructs within the semiconductor manufacturing context. The findings confirm that perceived usefulness, ease of use, performance expectancy, effort expectancy, social influence, and facilitating conditions significantly shape employees' behavioral intention to adopt a computerized system. Importantly, this study demonstrates that effort expectancy exerts a strong negative influence, highlighting the need for system simplicity in the company environment. By situating these constructs in a real-world organizational setting, the study enriches existing literature with context-specific evidence, thereby strengthening the generalizability of the technology adoption model and offering empirical clarity on factors that drive or hinder employee behavioral intention to use a computerized system.

5.3.3 Theoretical Contribution

Theoretically, this study contributes to refining and contextualizing established technology adoption models, particularly TAM and UTAUT. The findings demonstrate that facilitating conditions emerged as the strongest predictor of behavioral intention, underscoring the importance of organisational infrastructure and support in company environments. This extends UTAUT by emphasizing that facilitating conditions are not merely external enablers but central determinants of adoption in technology-intensive workplaces. Moreover, this study highlights the negative role of effort expectancy, challenging the UTAUT assumption that its influence diminishes over time. Instead, the results suggest that system complexity continues to deter of perceived usefulness, reinforcing TAM's central construct, showing that employees' intention to adopt is directly tied to clear, practical benefits for both individual performance and organisational outcome, By linking these insight back to the underpinning theories discussed in Chapter 2, this study advance theoretical understanding by bridging abstract constructs with real world application, thereby enhancing the explanatory power of TAM and UTAUT in the context of semiconductor manufacturing.

5.4 Recommendation for future research

The scope of this research was limited to a semiconductor company, focusing solely on employees' behavioural intentions. This narrow focus could pose limitations in the future (Akanle et al., 2020). To strengthen the generalizability of the findings, future studies should consider several factors. First, research should analyse the system's actual use to understand how often and in what ways employees utilise it, beyond just their intentions. Second, expanding the sample to include a wider range of workers from different industries and regions would improve scope.

Third, to gain deeper insights, future research could explore additional variables, such as organisational culture, ease of use, or job satisfaction, and employ methods such as interviews, longitudinal studies, or mixed-methods approaches. Additionally, to determine if behavioral intention translates into long-term productivity gains, researchers might investigate the long-term impacts of system adoption on employee performance and organisational outcomes. Lastly, future research could also examine how emerging technologies like AI or mobile apps influence behavioral intentions, providing a more current view of digital acceptance in the workplace.

5.5 Conclusion

This study explored employees' behavioral intentions to adopt the computerized system at a semiconductor company in Kulim, Kedah, within the broader scope of Industry 4.0 digitalisation. The introduction outlined the context, problem statement, objectives, and significance, highlighting the essential role of user acceptance in the successful implementation of computerized systems. The literature review integrated previous research and theoretical models, particularly TAM and UTAUT, to identify key constructs, including perceived usefulness, perceived ease of use, performance expectancy, effort expectancy, social influence, and facilitating conditions.

The methodology section described a rigorous quantitative approach, using structured questionnaires and statistical methods to ensure reliability and validity. Results showed that only four variables significantly impacted behavioral intention, with facilitating conditions, perceived usefulness, effort expectancy, and social influence demonstrating the strongest links. These results were discussed in the final chapter, which emphasised the importance of technical support, training, usability improvements, peer encouragement, and managerial support in fostering system adoption.

Overall, the thesis contributes theoretically by applying TAM and UTAUT in a high-volume manufacturing context, empirically by extending technology acceptance research into Malaysia's semiconductor sector, and practically by offering managerial insights. For a deeper understanding of long-term usage behavior, the study recommends future research across multiple facilities and longitudinal studies, reaffirming that employee acceptance is vital for successful digital transformation.

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APPENDIX

Section 1 of 3

A SURVEY ON FACTORS INFLUENCING BEHAVIORAL INTENTION TO USE OF COMPUTERIZED SYSTEM AMONG EMPLOYEES IN A SEMICONDUCTOR COMPANY IN KULIM, KEDAH.

Dear Respondent,

We are conducting a research project titled "**FACTORS INFLUENCING BEHAVIORAL INTENTION TO USE COMPUTERIZED SYSTEM AMONG EMPLOYEES IN A SEMICONDUCTOR COMPANY IN KULIM, KEDAH.**" Your participation is valuable in helping us understand the key factors affecting behavioral intention to use computerized systems among employees in a semiconductor company in Kulim, Kedah.

This survey consists of several sections:

· Section A collects **demographic information** from respondents.

· Section B examines **factors influencing behavioral intention to use** computerized system.

· Section C focuses on employees' behavioral **intention** toward the system.

All information provided will be treated as **private and confidential** and will be used **only for academic research purposes**. Thank you for taking the time to answer this survey.

If you have any enquiries, please feel free to contact us at **pavithirasabehsvealla97@gmail.com**.

Yours faithfully,

Pavithira A/P Sabehs Kumar
School of Business Management
College of Business
Universiti Utara Malaysia

By continuing with this survey, you confirm that:

1. Your participation is voluntary
2. You understand the purpose of this study
3. Your respond will remain as confidential

SECTION A: DEMOGRAPHIC INFORMATION

Instructions: Please read the questions carefully and choose the correct answer or fill in the required detail in the space provided.

Q1: What is your gender?

Male(   )

Female (   )

Q2: What is your academic status?

SPM (   )
Diploma (   )
Bachelor (   )
Master (   )

Q3: How long have you been working at Intel Kulim?

Less than 5 year (   )
6-10 years (   )
11-15 years (   )
More than 15 years (   )

Which ethnic group(s) do you identify with?

Malay (   )
Chinese (   )
Indian (   )

Section 2 of 3

SECTION B: FACTORS INFLUENCING BEHAVIORAL INTENTION TO USE COMPUTERIZED SYSTEM AT INTEL KULIM, KEDAH.

There are 5 factors. Kindly select the number that best reflects your opinion. ***(Perceived Usefulness, Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions). Help to circle.***

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

INDEPENDENT VARIABLE

Perceived Ease of Use **(5 questions)**

1. The system is simple to operate.
1.*Sistem ini mudah digunakan*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

2. I have no trouble learning how to utilize the system.
2.*Belajar cara menggunakan sistem ini mudah bagi saya.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

3. Gaining proficiency with the system is simple.
3. *Ianya mudah untuk menjadi mahir dalam menggunakan sistem ini.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

4. It is evident how I engage with the system.
4. *Interaksi saya dengan sistem ini adalah jelas.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

5. Finding information through the system will be simple for me.
5. *Ianya mudah bagi saya untuk mencari maklumat melalui sistem ini*.

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

Perceived Usefulness (5 questions)

1. My performance will be enhanced by the system.
1. ***Sistem ini akan meningkatkan prestasi saya.***

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

2. My productivity will rise thanks to the system.
2. ***Sistem ini akan meningkatkan produktiviti saya.***

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

3. Using the system makes my tasks at work easier.
3.*Tugas di tempat kerja saya menjadi lebih mudah apabila saya menggunakan sistem ini*.

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

4. The system will improve my productivity at work.
4. ***Sistem ini akan meningkatkan keberkesanan kerja saya.***

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

5. The system is helpful, in my opinion.
5. ***Saya mendapati sistem ini berguna.***

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

Performance Expectancy (8 questions)

1. I can get information related to my work activities thanks to the system.
1. ***Sistem ini membolehkan saya mengakses maklumat yang berkaitan dengan aktiviti tempat kerja saya.***

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

2.I can use the system to work more productively.
2.*Saya boleh bekerja dengan lebih cekap dengan menggunakan sistem ini.*

11. Strongly agree

2. Agree

3. Neutral

4. Disagree

5. Strongly disagree

3. I do not do better at work when I utilize the system.
3. *Penggunaan sistem ini tidak meningkatkan prestasi kerja saya*.

1. Strongly agree

2. Agree

3. Neutral

4. Disagree

5. Strongly disagree

4. The technology makes it simple to find information about the workplace.
4. *Mendapatkan maklumat tempat kerja adalah mudah dengan menggunakan sistem ini.*

1. Strongly agree

2. Agree

3. Neutral

4. Disagree

5. Strongly disagree

5. My work activities are not enhanced by the system.
5. *Sistem ini tidak memberikan nilai tambah kepada aktiviti tempat kerja saya.*

1. Strongly agree

2. Agree

3. Neutral

4. Disagree

5. Strongly disagree

6. The system's easily accessible information resources encourage me to use it.
6. *Saya bermotivasi untuk menggunakan sistem ini kerana sumber maklumat yang mudah diakses.*

1. Strongly agree

2. Agree

3. Neutral

4. Disagree

5. Strongly disagree

7. I am certain that the method will improve the quality of my work.
7. *Saya yakin bahawa sistem ini akan menambah nilai kepada kerja saya.*

1. Strongly agree

2. Agree

3. Neutral

4. Disagree

5. Strongly disagree

8. I can keep up with worldwide trends in workplace learning by using the system.
8. *Menggunakan sistem ini membolehkan saya mengikuti tren global dalam pembelajaran di tem,pat kerja.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

Effort Expectancy (5 questions)

1. Stress is not a feature of using the system at work.
1. *Penggunaan sistem di tempat kerja tidak dicirikan oleh tekanan.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

2. To utilize the system efficiently at work, I do not need a lot of technical knowledge.
2.*Saya tidak memerlukan teknikal yang tinggi untuk menggunakan sistem ini dengan berkesan di tempat kerja.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

3. Through the system at work, I can access information resources pertinent to my job at any time and from any location.
3.*Saya boleh mengakses sumber maklumat berkaitan kerja di mana-mana dan pada bila bila masa melalui sistem di tempat kerja.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

4. Utilizing the system lowers the expenses, time, and effort related to traditional workplace procedures.
4. *Pengguna sistem ini mengurangkan kos, masa, dan usaha yang berkaitan dengan proses konvensional di tempat kerja.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

5. System limitations like server failure make job tasks less user-friendly.
5. *Sekatan sistem seperti kerosakan pelayan mengurangkan kemudahan penggunaan dalam tugas di tempat kerja.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

Social Influence (4 questions)

1. Those who have an impact on my conduct believe that I ought to make advantage of the system.
1.Orang yang mempengaruhi tingkah laku berpendapat bahawa saya harus menggunakan sistem ini.

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

2.I should use the system at work, according to people who are essential to me.
2.*Orang yang penting bagi saya berpendapat bahawa saya harus menggunakan sistem ini di tempat kerja.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

3. Using the system has been made easier by the senior management.
3. *Pihak pengurusan atasan telah membantu dalam penggunaan sistem ini.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

4. The organization has generally encouraged the system's use.
4. *Secara amnya, organisasi telah menyokong penggunaan sistem ini.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

Facilitating Conditions (7 questions)

1.In my organization, there is sufficient instruction on how to use the system.
1. *Terdapat Latihan yang mencukupi mengenai penggunaan sistem ini dalam organisasi saya.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

2. My supervisor encourages me to use the system.
2. *Penggunaan sistem ini digalakkan oleh penyelia saya.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

3. I am capable of using the system.
3. *Saya mempunyai kemahiran dan keupayaan untuk menggunkan sistem ini.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

4. To use the system at work efficiently, I need to get better at ICT.
4.*Saya perlu meningkatkan kemahiran ICT saya untuk menggunakan sistem ini dengan berkesan di tempat kerja*.

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

5. An unstable server makes it more difficult to use the system efficiently at work.
5. *Kehadiran pelayan yang tidak stabil menghalang penggunaan sistem ini dengan berkesan di tempat kerja.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

6. I am not motivated to use the system at work when the server breaks down.
6.*Kerosakan pelayan tidak memberi motivasi kepada saya untuk menggunakan sistem ini di tempat kerja.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

7. Because the system is so complicated, I have a terrible time using it at work.
7.*Saya mendapati sukar untuk menggunakan sistem ini tempat kerja kerana ia agak kompleks.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

Section 3 of 3

Section C focuses on employees' **behavioral intention** toward the system.

Instructions: Please specify your level of agreement or disagreement with each statement using the following options.

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

Dependent Variable:

Behavioural Intention (BI) (4 questions)

1. I would use the system if I had access to it.
1. *Jika saya mempunyai akses kepada sistem ini, saya berniat untuk menggunakannya.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

2. I intend to make use of the system in the future.
2. *Saya merancang untuk menggunakan sistem ini pada masa hadapan*.

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

3. I plan to use the system a lot in my work.
3.*Saya berniat untuk menggunakan sistem ini dengan kerap dalam tugas saya.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

4. I suggest that another staff member utilize the system.
4. *Saya mengesyorkan agar pekerja lain menggunakan sistem ini.*

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

Thank you for your cooperation. Your participation is greatly appreciated.