AN EMPIRICAL STUDY ON SAAS ADOPTION AMONG SMES IN INDIA.

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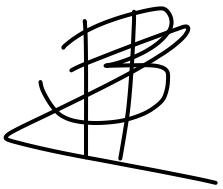

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ABSTRACT

AN EMPIRICAL STUDY ON SAAS ADOPTION AMONG SMES IN INDIA.

This study investigates the factors influencing the adoption of Software as a Service (SaaS) among small and medium-sized enterprises (SMEs) by integrating UTAUT & TTAT theories. The research collected data from 900 respondents across various regions in India. Partial Least Squares Structural Equation Modelling (PLS-SEM) is used in the analysis to evaluate the associations between the intention to use SaaS, perceived danger, social influence, effort expectancy, and enabling factors.

Key findings reveal that effort expectancy, facilitating conditions, and social influence positively impact the intention to adopt SaaS, emphasizing the importance of user-friendly interfaces, robust support, and endorsements from industry leaders. Conversely, perceived threat, including perceived severity and susceptibility, significantly deters adoption, highlighting the need for stringent security measures and transparent communication to mitigate risks. Performance expectancy also contributes positively but moderately to the intention to use SaaS, underscoring the perceived performance benefits.

The Importance-Performance Map Analysis (IPMA) further elucidates these factors, suggesting targeted strategies to enhance SaaS adoption. Recommendations include focusing on intuitive design, providing comprehensive support, addressing security concerns, leveraging social influence, and clearly communicating performance benefits. By adopting a holistic approach, SaaS providers can better meet the needs of SMEs, driving broader adoption and supporting technological advancement and operational efficiency in the SME sector.

This study's implications offer valuable insights for SaaS providers, policymakers, and SMEs, highlighting the critical factors and practical strategies to promote the adoption of SaaS solutions, ultimately contributing to the competitiveness and resilience of SMEs in the evolving business landscape.

Keywords: SaaS adoption, SMEs, UTAUT, TTAT, PLS-SEM.

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Chapter I – Introduction

1.1 Introduction

In recent years, the ascendancy of Software as a Service (SaaS) has fundamentally transformed the way organizations and individuals interact with and deploy software solutions. Enshrining a model where software is centrally hosted and made available to users over the internet, SaaS shifts the paradigm from ownership to access, engendering a more dynamic, scalable, and flexible approach to software utilization.

As a pivotal constituent of cloud computing alongside Infrastructure as a Service (IaaS) and Platform as a Service (PaaS), SaaS offers a multitudinous range of benefits including lower initial costs, seamless updates, accessibility from any location, and compatibility across various devices. The model thus epitomizes a democratization of software access, transcending geographical and economic barriers that erstwhile impeded the universal accessibility to cutting-edge software solutions. Moreover, SaaS disrupts the traditional software delivery model which necessitated the installation of applications on individual computers or servers. By relocating the locus of control from the end-users to a centralized service provider, it facilitates instantaneous deployment and fosters a collaborative environment where updates and patches are rolled out automatically without requiring active intervention from the end-users.

The ascension of Software as a Service (SaaS) within the landscape of business applications has sparked a rich body of literature scrutinizing the benefits and potential drawbacks of adopting such technology. Spanning considerations such as acquisition methods, choice parameters for selection, and the shifting paradigms of computing platforms, the discourse delves into pivotal aspects that dictate the trajectory of SaaS in the contemporary era.

An early analysis by Kim (2009) articulated the burgeoning potential of cloud computing, delineating its state at the time and prognosticating future developments. The researcher highlighted the overarching shift from traditional computing paradigms to cloud infrastructures, emphasizing the cost-effective, scalable, and flexible environment facilitated by cloud computing platforms. Despite being in its nascent stages at the time of the writing, the work underscored that cloud computing was poised to be a disruptive force in technology, a prediction that has certainly manifested in subsequent years.

Adding a strategic dimension to the discourse, Godse and Mulik (2009) proposed a framework for selecting SaaS products. Their approach was grounded in meticulously identifying and analyzing customer requirements to drive the selection process. This, they posited, would foster a more informed decision-making process, vital in navigating the burgeoning SaaS marketplace characterized by a myriad of solutions tailored for diverse business needs. Their work could be seen as a pioneering blueprint in SaaS selection, guiding stakeholders in making decisions that are congruent with their specific organizational objectives and requirements.

Delving deeper into the juxtaposition between on-premise and SaaS-based solutions, the study conducted by Bibi, Katsaros, and Bozanis (2012) examined the critical factors that influence the acquisition of business applications. Their discourse articulated the merits and demerits of both on-premise and SaaS-based solutions, steering through considerations such as cost, security, and customization. The authors advised a cautious approach to the adoption of SaaS, highlighting that while it offers notable benefits, it may not be the panacea for all organizations, urging for a nuanced consideration of the specific context of each organization.

Taking a broader lens, Cusumano (2010) explored the revolutionary potentials of cloud computing and SaaS as emerging computing platforms. The scholar delineated the

transformative capacity harbored by these technologies, illustrating how they are set to alter the foundational premises of how computing services are delivered and consumed. Cusumano underscored the potential of SaaS in engendering a more streamlined and efficient approach to software deployment, emphasizing the democratizing potential of this model in broadening access to sophisticated software solutions.

Lastly, Satyanarayana (2012) focused on the specific attributes and utilities of SaaS within the ambit of cloud computing. His analysis elucidated the particular advantages of SaaS, citing benefits such as reduced costs of ownership and enhanced convenience in application accessibility. Satyanarayana's discourse served to augment the understanding of SaaS as not merely a software delivery model but as an integral component in the cloud computing framework, offering distinct benefits that cater to the contemporary demands of businesses and individual users alike.

In synthesis, the referenced literature presents a rich tapestry of insights and analysis, echoing the transformative potential of SaaS while urging a nuanced approach to its adoption. While heralded for its cost-effectiveness, scalability, and democratizing potential (Kim, 2009; Satyanarayana, 2012), the literature also foregrounds the essentiality of strategic selection (Godse & Mulik, 2009) and a careful consideration of the organizational context in leveraging the full potential of SaaS solutions (Bibi et al., 2012). It is clear that as SaaS continues to evolve, so does its implication in the broader spectrum of cloud computing, substantiating its role as a disruptive force in the technological landscape (Cusumano, 2010).

1.2 Need and Significance of the Study

Drawing from the rich insights rendered through the above discussion, it emerges unequivocally that the SaaS landscape is fraught with opportunities and challenges alike. Given this complex tapestry, there arises a palpable need to conduct a focused study “on the

adoption of SaaS among Small and Medium Enterprises (SMEs)" — a segment that arguably stands to gain profoundly from the optimal leverage of this technology.

Firstly, the democratizing potential of SaaS elucidated in the works of Cusumano (2010) and Satyanarayana (2012) underscores a significant opportunity for SMEs. These enterprises often grapple with resource constraints, and the cost-effectiveness and scalability of SaaS can potentially catapult them to a playing field erstwhile dominated by larger corporations endowed with more substantial resources. A study in this realm could dissect the extent to which SaaS can indeed be a levelling force, enabling SMEs to harness sophisticated software solutions that were previously beyond their reach.

Moreover, the strategic approach to selecting SaaS products delineated by Godse and Mulik (2009) further delineates the criticality of fostering an informed adoption pathway for SMEs. Given their limited resources, SMEs cannot afford missteps in adopting technologies that do not align with their specific needs and contexts. Hence, studying the dynamics of SaaS adoption in this sector can potentially yield frameworks and guidelines that are tailor-made for SMEs, guiding them in making choices that are aligned with their strategic objectives and operational realities.

Furthermore, the comparison between on-premise and SaaS-based solutions proffered by Bibi, Katsaros, and Bozanis (2012) hints at a rich area of study where the specific needs and contexts of SMEs could be aligned with the right kind of solution, be it on-premise or SaaS-based. Understanding the nuanced implications of each approach in the SME context can potentially shield these enterprises from unforeseen challenges, fostering a more sustainable and informed adoption pathway.

Lastly, the potential transformative impact of cloud computing and SaaS highlighted by Kim (2009) brings to fore the pressing need for SMEs to stay abreast with evolving technological

landscapes to remain competitive. A study focusing on SaaS adoption among SMEs could potentially unravel strategies and pathways through which these enterprises can remain agile and responsive to the shifting technological paradigms, leveraging SaaS solutions to foster innovation and drive business growth.

In light of the above, the significance of a study focusing on the adoption of SaaS among SMEs becomes glaringly apparent. Not only can such a study furnish SMEs with the insights and tools necessary to navigate the complex SaaS landscape adeptly, but it can also facilitate a broader understanding of the transformative potential and the challenges harbored by SaaS in the SME context. Consequently, it can guide policy and decision-making, fostering a conducive environment for SMEs to leverage the full spectrum of opportunities presented by SaaS while mitigating potential risks.

1.3 Research Problem

Even with the obvious benefits of Software as a Service (SaaS) solutions—like affordability, scalability, and accessibility—small and medium-sized businesses' (SMEs') adoption of these technologies is uneven and dependent on a wide range of intricate aspects. SMEs frequently have less funding and deal with certain difficulties that may influence their choice to adopt new technologies. These challenges include concerns about data security, the adequacy of organizational and technical support, and the influence of social and peer pressures. Additionally, while SMEs can greatly benefit from the performance enhancements offered by SaaS, their adoption is often hindered by perceived threats and the ease of use of these technologies. Existing research has primarily focused on either the motivational aspects of technology adoption or the avoidance behaviors related to perceived risks. However, there is a gap in the literature that comprehensively integrates these perspectives to understand the multifaceted nature of SaaS adoption in the SME context.

1.4 Research Purpose and Research Questions

"The primary objective of this study is to empirically investigate the factors influencing the adoption of Software as a Service (SaaS) among Small and Medium Enterprises (SMEs) in India". "This research aims to identify and analyze the key drivers, barriers, and the overall impact of SaaS adoption on the operational and competitive performance of SMEs in the Indian context". By exploring these aspects, the study seeks to "provide a comprehensive understanding of the current state of SaaS adoption", offering insights into how SMEs in India can leverage SaaS technologies for enhanced business efficiency, scalability, and innovation. Additionally, the findings of this study are intended to inform policymakers, software providers, and business leaders about effective strategies to foster a more conducive environment for SaaS adoption among SMEs, ultimately contributing to the digital transformation agenda within the Indian economy. The following are the research questions of the study:

1. What are the factors which influence the decision of SMEs in India to adopt SaaS solutions?
2. What barriers do SMEs in India face in adopting SaaS solutions?
3. How does the adoption of SaaS impact the operational and competitive performance of SMEs in India?
4. What strategies can be adopted by stakeholders (policymakers, software providers, and SMEs) to enhance SaaS adoption among SMEs in India?

Chapter 2: Literature Review

2.1 Introduction

With the introduction and spread of cloud computing and Software as a Service (SaaS) platforms in recent decades, the technical environment has undergone a massive transformation. The concept of software as a service (SaaS) has completely changed how businesses run by providing unmatched benefits including accessibility, scalability, and cost-effectiveness from anywhere in the world. Central to this transformation is the adoption behavior of individuals and organizations, which encompasses a myriad of factors and dimensions that influence the assimilation and sustained utilization of SaaS technologies.

Understanding the nuances of SaaS adoption is not just pertinent but imperative in the contemporary digital era. The existing body of literature has ventured into this realm from various angles, focusing on different aspects such as the technological advancements that facilitated this transition, the organizational implications of adopting SaaS, the potential security risks, and the influence it has on workforce productivity and business models. Each of these dimensions offers a rich vein of information, intricately detailing the forces at play in the SaaS adoption landscape.

As we navigate through the extensive literature available on this subject, it becomes evident that there exists a vibrant dialogue among scholars focusing on dissecting the multifaceted dimensions of SaaS adoption. From early adoption and discontinuation behaviors (Aggarwal et al., 2015) to sector-specific and regional analyses, the scope of research is both deep and wide, with contributions from various researchers worldwide offering a kaleidoscopic view of the dynamics in play.

Moreover, research has also sought to explore the environmental sustainability aspect of cloud computing, bringing to fore the necessity to align technological advancements with sustainable practices, showcasing a forward-thinking approach in the SaaS domain (Park et al., 2023).

This literature review seeks to unravel the intricate tapestry of research in the field of SaaS adoption, diving deep into the rich array of scholarly works that explore this dynamic landscape from diverse perspectives, including but not limited to technological advancements, organizational impacts, and security concerns. By synthesizing these diverse narratives, this review aims to forge a comprehensive understanding, encapsulating the manifold dimensions that define the pathway to SaaS adoption and its subsequent implications in the modern business ecosystem.

As we embark on this exploratory journey, we shall sieve through theoretical frameworks and real-world case studies, embracing a multifaceted lens to draw a holistic picture of the current research landscape. By grounding our discussion in the extensive body of scholarly works available, this literature review aspires to offer readers a deep, nuanced understanding of SaaS adoption, fostering an enriched discourse that is both grounded in theory and steeped in practical realities.

2.2 Adoption Factors and Barriers

2.2.1 Organizational Factors

The journey towards adopting Cloud Computing and SaaS is mediated through a series of organizational factors. Studies have shown that organizational readiness and the existing infrastructure play a decisive role in the adoption process (van de Weerd et al., 2016). Moreover, the intricacies of business models, including their flexibility and alignment with

cloud computing paradigms, significantly affect the adoption decisions (Zhang et al., 2020). Additionally, the internal dynamics of organizations, including their size and resources, can significantly influence their readiness and approach towards adoption (Bogataj Habjan & Pucihar, 2017).

2.2.2 Environmental Influences

The environmental backdrop, wherein an organization operates, is a crucial determinant in the adoption process. Various studies have highlighted the role of governmental regulations, industry standards, and competitive pressures in shaping the decision to adopt cloud computing and SaaS solutions (Tju et al., 2020). Moreover, the socio-cultural environment, including customers' acceptance levels and preferences, can also guide the adoption pathways, influencing the speed and extent to which organizations can transition to these new technological paradigms (Oliveira et al., 2019).

2.2.3 Technological Aspects

Adoption rate is highly dependent on perceived technology efficacy and benefits as well as technological readiness. According to Lee et al. (2013), two important factors influencing adoption are the technology infrastructure and how well cloud computing solutions integrate with current systems. Furthermore, technological advancements and innovations, such as adaptive interface frameworks, have facilitated the smoother adoption of these technologies by providing user-friendly platforms and tools (Rodrigues et al., 2016).

2.2.4 Trust and Security

As organizations move towards more digitalized solutions, trust and security become paramount. Research illustrates a strong correlation between the perceived security of cloud solutions and the willingness to adopt them. Trust in service providers and the assurance of

robust security protocols has been underlined as vital in facilitating the adoption process (Lee & Brink, 2020). Similarly, Venkatraman and Venkatraman (2014) emphasize that the trust in cloud providers significantly impacts the organization's adoption behavior, highlighting the role of provider reputation and established trust relations.

2.2.5 Perceived Risks and Benefits

Determining the advantages and disadvantages of implementing SaaS and cloud computing is a crucial aspect that impacts the decision-making process. It has been noted that organizations often weigh the perceived benefits, including cost savings and operational efficiencies, against the potential risks such as security breaches and downtime (Kim et al., 2017). Thus, a balanced understanding of the risks and benefits, grounded in empirical evidence, can play a crucial role in guiding organizations in their adoption journey.

To summarise, the process of adopting Cloud Computing and SaaS is complex and involves various elements such as organisational characteristics, environmental conditions, technology maturity, and trust and security issues. The existing literature paints a complex picture, emphasizing the necessity for organizations to navigate a series of barriers and facilitators in the adoption landscape (van de Weerd et al., 2016; Zhang et al., 2020; Lee et al., 2013; Rodrigues et al., 2016; Lee & Brink, 2020; Venkatraman & Venkatraman, 2014; Kim et al., 2017). As organizations continue to adapt to the rapidly evolving digital landscape, a nuanced understanding of these factors can guide them in making informed adoption decisions, optimizing the potential benefits while mitigating risks. Future research should continue to explore these dynamics, potentially uncovering new factors and offering a deeper understanding of the adoption landscape in different contextual settings.

2.3 Organizational Impacts and Business Models

2.3.1 Organizational Factors in SaaS Adoption

The literature has been keen on delineating the factors internal to organizations that predicate their adoption of Software as a Service (SaaS) solutions and cloud computing. Ferrari et al. (2013) proposed that a myriad of elements, including the size of the organization, its readiness to adapt to new technologies, and the existent IT infrastructure, play pivotal roles in determining the likelihood and the extent of SaaS adoption.

Bogataj and Pucihar (2013) further advanced the discourse, arguing that business model factors such as cost efficiency, flexibility, and strategic alignment are intrinsic to fueling the adoption rates. The research showcases a scenario where organizations progressively attuned to the digital revolution are more likely to endorse and assimilate SaaS solutions seamlessly.

2.3.2 The Restructured Role of IT Departments

Choudhary and Vithayathil (2013) ventured into exploring the metamorphosed roles of IT departments in organizations that are navigating the waves of cloud computing adoption. The studies underscore the growing importance of IT departments in orchestrating a successful transition towards SaaS, by not only providing technical expertise but also playing a strategic role in steering organizational decisions and policies.

This transformation into a strategic unit necessitates a departure from traditional IT roles, fostering innovation, and facilitating more integrative and collaborative approaches to IT management. In this sense, IT departments are envisaged to become the bedrock upon which the SaaS strategies are sculpted and implemented, thereby augmenting the organizational agility and fostering a culture of innovation.

2.3.3 Business Models and Competitive Landscapes in Cloud Computing

The landscape of business models has undergone profound transformations with the advent of SaaS and cloud computing. Scholars such as Luoma et al. (2018) and Ma & Kauffman (2014) have delved deep into understanding the shifting sands of business strategies and competition dynamics among SaaS vendors. The research posits a vibrant and evolving marketplace characterized by intensified competition and a constant endeavor for innovation, where SaaS vendors seek to carve out a niche through differentiated offerings and leveraging API marketplaces and integration platforms.

Furthermore, recent contributions to the literature by Manchanda et al. (2023) and Neifer et al. (2021) shed light on the industry dynamics, portraying a space where collaborative approaches and interoperability become cardinal, nurturing a rich ecosystem of integrated services and solutions.

Drawing from the existing body of literature, it becomes evident that the organizational impacts and the reshaping of business models stand as central themes in the discourse on the adoption of SaaS and cloud computing. The studies reviewed herein advocate for a strategic and well-rounded approach to the adoption of cloud services, urging organizations to rethink their business models and to reconceptualize the roles of IT departments (Ferrari et al., 2013; Bogataj & Pucihar, 2013; Choudhary & Vithayathil, 2013).

Moreover, they posit an industry landscape in a constant state of flux, driven by competitive dynamics and the relentless pursuit of innovation (Luoma et al., 2018; Ma & Kauffman, 2014). It is palpable that future trajectories in SaaS adoption will be significantly influenced by the evolving business models and organizational strategies, demanding a continuous process of learning, adaptation, and innovation to stay afloat in a fiercely competitive market space. Future research endeavors in this arena should aim to unravel the complexities of the

changing business dynamics and offer pragmatic insights to organizations on leveraging the potential of SaaS and cloud computing optimally.

2.4 Technological Advancements and Innovations

2.4.1 Evolution from Traditional ERP Systems

Over the years, there has been a notable evolution from traditional Enterprise Resource Planning (ERP) systems to more adaptable, cloud-based systems, a trajectory explored meticulously in the work of Al-Ghofaili and Al-Mashari (2014). The researchers depict the transformational journey where cloud-based systems have increasingly become the cornerstone, offering a flexible, scalable, and cost-effective alternative to traditional ERPs, thereby facilitating more agile and responsive business operations. This shift is viewed as a natural progression towards leveraging modern technologies to enhance organizational efficacy.

2.4.2 Adaptive Interface Frameworks and Collaboration Tools

In another interesting exploration, Altenburger et al. (2012) took a deep dive into the emerging adaptive interface frameworks and collaboration tools. The authors highlighted the salient role these innovations play in fostering collaboration and enhancing user experience in the SaaS environment. The development of adaptive interfaces has paved the way for more intuitive and user-friendly platforms, enriching the SaaS landscape by fostering ease of use and facilitating seamless integrations, which are essential in today's fast-paced business environment.

2.4.3 Experiment Systems for Building Products

The domain of SaaS has further seen innovations in terms of systems designed for experimenting with building products, an area Bosch (2012) shed light upon. Experiment

systems serve as a sandbox, facilitating a trial-and-error approach to product development, thereby encouraging innovation and agility. Bosch contends that these systems can be pivotal in helping organizations to iteratively develop and refine products, based on real-time feedback and analytics, leading to products that are better aligned with user expectations and market demands.

SaaS and cloud computing breakthroughs and advancements are testament to the relentless rate of change in an ever-evolving technological ecosystem. The journey from traditional ERP systems to modern, cloud-based alternatives marks a significant shift in how organizations manage their resources and operations, bringing about enhanced flexibility and agility (Al-Ghofaili & Al-Mashari, 2014).

Moreover, the focus has intensified on developing adaptive interfaces and collaborative tools, with an eye on improving user experiences and fostering collaboration, which are deemed as vital components in the current SaaS ecosystem (Altenburger et al., 2012). Alongside, the advent of experiment systems heralds a new approach to product development, encouraging iterative and agile methodologies that are closely aligned with market needs (Bosch, 2012).

As we forge ahead, it remains imperative to stay attuned to these advancements and innovations, seeking to leverage them to foster a SaaS landscape that is dynamic, user-centric, and primed for future growth. Future research should endeavor to map these technological advancements continuously, dissecting their implications and charting the pathways they carve in the evolving landscape of SaaS solutions.

2.5 Quality and Service Measurements in SaaS

2.5.1 Understanding Service Quality and its Role in Usage Continuance

As SaaS platforms continue to mature and become increasingly prevalent in organizational settings, understanding and measuring service quality has emerged as a critical area of focus. The work of Benlian, Koufaris, and Hess (2011) delved deep into the crucial role service quality plays in influencing user's continuance intention. Through meticulous analysis, the researchers have underscored the imperative of maintaining high service quality, arguing that it fosters sustained usage and fosters a loyal user base. Quality, in this regard, becomes not merely a benchmark but a dynamic entity that commands ongoing attention to secure customer loyalty and ensure business vitality.

2.5.2 Development of Measures for SaaS Quality

Following a similar thematic concern, Benlian and Hess (2011) turned their lens on the task of developing tangible measures for assessing SaaS quality. This is a significant stride towards conceptualizing and institutionalizing a framework within which SaaS quality can be gauged with clarity and precision. Through their research, a set of parameters have been identified and delineated, offering a concrete pathway for organizations to consistently monitor and enhance the quality of the services they offer. This establishes a ground for nurturing excellence and facilitating a landscape where SaaS solutions can thrive with a strong emphasis on quality assurance.

The scholarly focus on quality and service measurements within the sphere of Software as a Service (SaaS) brings to the fore a pivotal aspect of the SaaS landscape — the relentless pursuit of quality. The emphasis on service quality and its role in usage continuance, as explored by Benlian, Koufaris, and Hess (2011), uncovers a deep-seated relationship between quality assurance and user loyalty, highlighting the necessity for continuous engagement with quality parameters to foster sustained user relationships.

Moreover, the endeavor to craft and institutionalize measures for assessing SaaS quality showcases a matured, evolved approach towards understanding and enhancing service quality within the SaaS ecosystem (Benlian & Hess, 2011). This line of inquiry holds profound implications for service providers, nudging them towards a pathway of continuous improvement through rigorous, methodical quality assessments.

As we stand on the threshold of further innovations and developments in the SaaS sector, maintaining a laser focus on quality and service measurements will remain a cardinal principle. Future research trajectories in this domain should ideally foster a discourse that is reflective, critical, and forward-thinking, envisioning a framework where quality stands tall as both a beacon and a benchmark, guiding the evolutionary journey of SaaS solutions towards excellence.

2.6 Security and Risks

2.6.1 Analyzing Security Issues and Risk Assessment Frameworks

As the landscape of cloud computing and SaaS continues to expand, it brings forth an increment in the concerns revolving around security and associated risks. Gupta and Bhatia (2019) have taken a profound delve into the pressing issue of security in cloud computing, pointing out potential vulnerabilities that may exist and proposing strategies to mitigate such risks. Their analysis underscores the continual need for robust security mechanisms to safeguard sensitive data and maintain trust in cloud services.

Following the trajectory of scrutinizing risks associated with cloud computing, Dande & Lee (2019) provided an indispensable contribution by developing frameworks for risk assessment pertaining to cloud software. The frameworks delineated by them offer a structured pathway

to identify, analyze, and manage potential risks that can affect cloud computing environments, fostering a culture of prevention rather than reaction.

2.6.2 Case Studies on Security and Risk Management in Specific Sectors

Adding depth to the discourse on security and risks, Cole et al. (2019) orchestrated a case study exploring the dimensions of cloud computing adoption within the hedge fund industry, a sector known for its stringent data security needs. The research offers insightful glimpses into the real-world challenges and strategies employed by organizations in securing cloud platforms, reinforcing the necessity to create bespoke security strategies that cater to specific industry requisites.

The discourse on security and risks in the SaaS landscape portrays a rich tapestry of investigations and insights, revealing a domain continuously grappling with challenges and evolving to address them effectively. The work of Gupta and Bhatia (2019) stands as a testament to the ongoing efforts in unravelling the complexities surrounding security issues, proposing a nuanced approach towards establishing fortified security mechanisms in cloud computing.

Furthermore, the development of risk assessment frameworks by Dande & Lee (2019) marks a significant step towards fostering a pre-emptive approach in managing risks, where organizations are equipped with the tools and knowledge to anticipate potential pitfalls and strategize accordingly.

Moreover, the case study by Cole et al. (2019) offers a fine-grained analysis of the cloud computing environment in a sensitive sector, highlighting the pressing need for custom-designed security strategies that cater to unique industry needs, thereby contributing to a discourse rooted in practicalities and tailored solutions.

In conclusion, the ongoing research in the realm of security and risks in SaaS and cloud computing underlines the perpetual dynamics of risks and countermeasures. It points to a future where adaptive, resilient, and tailored security solutions become a mainstay, guided by comprehensive risk assessment frameworks, to foster a secure and trustworthy SaaS environment. Future scholarly endeavors in this direction hold the promise of refining our understanding further, paving the way for robust, resilient architectures that stand tall in the face of evolving security challenges.

2.7 Implications for the Workforce and Productivity

2.7.1 Digital Workplaces and Productivity Enhancement

The era of digital transformation brings forth substantial implications for the workforce and productivity in various sectors. Attaran, Attaran, & Kirkland (2019) ventured into an examination of the avenues through which digital workplaces can bolster workforce productivity. The study underscored the pivotal role that a digitized work environment plays in enhancing efficiency and fostering a culture of innovation within organizations. The digital workplace, encompassing cloud services and SaaS, emerges as a transformative force, steering companies towards a pathway of streamlined operations and elevated productivity.

2.7.2 Bridging the Gap between Academia and Small Enterprises

The interplay between academia and small enterprises in the digital landscape has also been scrutinized, with Cavillier & Wieser (2018) probing into the implications of the connectivity between these two spheres. The research paints a detailed narrative of the symbiotic relationship that can be cultivated between academic institutions and small enterprises, facilitated by cloud computing environments. By fostering a collaborative ecosystem, it is

envisaged that a vibrant nexus of innovation and growth can be nurtured, thereby contributing to a mutually beneficial paradigm of development and learning.

2.7.3 Educating the Future Workforce for a Cloud-First Future

Foster et al. (2018) set out to define the parameters of a contemporary computer science curriculum suited for a cloud-first future with an eye towards the future. The study centres on the necessity of providing the next generation of learners with the necessary knowledge and skill set to successfully traverse the cloud-centric digital ecosystem. The proposed curriculum is designed to meet industry expectations and provide a competent workforce capable of utilising cloud technology to promote innovation and advancement.

In summary, the scholarly discourse on the implications for the workforce and productivity in the cloud computing and SaaS environment manifests a rich tapestry of insights and forward-thinking perspectives.

The exploration by Attaran, Attaran, & Kirkland (2019) throws light on the transformative potential of digital workplaces, delineating a landscape where efficiency and innovation become the hallmark of organizational dynamics. Their research nudges organizations to embrace the digital workplace paradigm, heralding a future of elevated productivity.

Simultaneously, the study by Cavillier & Wieser (2018) enriches the discourse by elucidating the collaborative potentials harbored in the nexus between academia and small enterprises, a collaboration facilitated and nurtured through cloud technologies. It proposes a symbiotic ecosystem where knowledge transfer and innovative strides become a commonplace phenomenon.

Furthermore, the visionary lens of Foster et al. (2018) directs attention towards the educational precincts, urging a reconfiguration of the computer science curriculum to prepare

the workforce for a cloud-first future. It stands as a clarion call to foster educational paradigms that are attuned to the evolving demands of the digital landscape.

As we stand at the cusp of a digital revolution guided by SaaS and cloud computing technologies, it becomes incumbent to envisage and sculpt frameworks that nurture a workforce adept at maneuvering the complex, yet promising corridors of a cloud-centric world. The scholarly endeavors echoed in these studies stand as beacons guiding us towards a future replete with opportunities and pathways to enhance workforce productivity and foster a collaborative and innovative work environment. It opens up vistas for further research in understanding the ever-evolving implications for the workforce, aligning educational strategies with industry demands, and creating workplaces that resonate with efficiency and innovation.

2.8 Business Models and Competitive Dynamics

2.8.1 Business Strategies and Vendor Competition

The landscape of Software as a Service (SaaS) is marked by an evolving dynamic of business models and strategies which significantly influence competitive dynamics within the industry. An exploration of the transformations in the strategies deployed by SaaS vendors was undertaken by Luoma et al. (2018) and Ma & Kauffman (2014), where they dissected the shifts in competitive landscapes as SaaS platforms continue to grow and innovate. They illustrate that SaaS vendors are constantly engaged in reinventing their strategies to maintain a competitive edge, emphasizing the fluid nature of business strategies in the digital age and highlighting the necessity for companies to remain adaptable to maintain a stronghold in the market.

2.8.2 API Marketplaces and Integration Platforms

The market dynamics have been further enriched with the introduction of Application Programming Interface (API) marketplaces and integration platforms, a narrative vividly elucidated in the works of Manchanda et al. (2023) and Neifer et al. (2021). These studies foreground the burgeoning relevance of APIs and integration platforms, delineating their role in enhancing interoperability and fostering a more collaborative and enriched service landscape. Through facilitating easier integration of various applications and services, these platforms stand as catalysts in enhancing the robustness and versatility of SaaS offerings.

2.8.3 Competing in a Saturated Market

The SaaS market has undergone substantial transformations, moving from a nascent stage to a mature market with a high level of saturation. In such a setting, SaaS companies are compelled to develop and adapt novel strategies to sustain their competitive advantage, a phenomenon that necessitates a thorough comprehension of both evolving customer tastes and technical improvements. The research delves further into these dynamics, emphasising how innovation and strategic partnerships play a part in developing a long-term business plan in a cutthroat industry.

In reflection, the realm of business models and competitive dynamics within the SaaS industry presents a rich and multifaceted area of study. The insights garnered from the meticulous studies conducted by scholars such as Luoma et al. (2018) and Ma & Kauffman (2014) offer a nuanced understanding of the ever-evolving strategies employed by SaaS vendors to stay competitive. Their works emphasize the mercurial nature of the industry, constantly under the influence of technological advancements and market demands, thereby necessitating a spirit of adaptability and forward-thinking in business strategies.

Simultaneously, the contributions of Manchanda et al. (2023) and Neifer et al. (2021) provide a compelling glimpse into the burgeoning API marketplaces and integration platforms. These

studies underline the pivotal role these platforms play in augmenting the SaaS landscape, fostering an environment rife with collaboration and enhanced service offerings. They steer us towards understanding that in a saturated market, the delineation of clear, innovative, and adaptive strategies becomes indispensable to foster sustained growth and competitive advantage.

As we navigate the intricate landscape of SaaS, understanding the underlying currents of business models and competitive dynamics becomes paramount. These scholarly engagements stand testament to the vibrant and dynamic nature of the SaaS industry, where innovation, strategic adaptations, and a deep understanding of the market nuances become the linchpin for success. The detailed investigations embarked upon by the researchers pave the way for a deeper understanding of the SaaS industry's business models and competitive dynamics, encouraging further scholarly discourse and investigation into this vibrant and rapidly evolving field. It instigates a dialogue urging businesses to foster a culture of adaptability, foresight, and innovative thinking as they carve their niche in the SaaS industry.

2.9 Sector-Specific and Regional Studies in SaaS Adoption

In recent years, the narrative surrounding the adoption of Software as a Service (SaaS) has branched out significantly to include both sector-specific and regional analyses. These studies, grounded in distinct contexts and geographical locales, offer vital insights into the adoption behavior, thereby catering to the increasing need for diversified studies that span various sectors and regions.

2.9.1 Sector-Specific Analyses

2.9.1.1 Telecommunication Sector

The telecommunication sector stands as a notable focus in the scholarly investigation of SaaS adoption, as discerned in the works of Luoma et al. (2011) and Luoma et al. (2010). These studies scrutinize the unique dynamics in telecommunications, elucidating the intricacies of SaaS adoption and offering a deep dive into how telecommunication firms leverage SaaS solutions to enhance their operations, proving instrumental in grasping the peculiarities associated with this sector.

2.9.1.2 Small and Medium Enterprises (SMEs)

Small and medium enterprises (SMEs) have not been left behind in this narrative, with research such as that of Venkatachalam et al. (2014) and Kruja et al. (2019) that bring to the fore the unique challenges and opportunities that SMEs encounter in adopting SaaS solutions. Their exploration into the SME landscape articulates the varying degrees of readiness among SMEs and how different business models are employed to facilitate SaaS adoption, therefore serving as a rich repository for understanding SaaS adoption in small and medium enterprise settings.

2.9.1.3 Education Sector

Within the education sector, scholars have demonstrated a growing interest in SaaS adoption, guided by the works of Jyothi et al. (2014) and Troshani et al. (2013). These studies elucidate the integration of SaaS solutions in educational institutions, offering a perspective on how SaaS can be a tool to foster educational advancement through streamlined services and enhanced operational efficiencies.

2.9.2 Regional Studies

2.9.2.1 Asia-Pacific Region

The Asia-Pacific region, particularly countries like Korea and Indonesia, has been a focal point in the regional analysis of SaaS adoption. Studies by Lee et al. (2013) and van de Weerd et al. (2016) delve into the contextual factors affecting SaaS adoption in these geographical locations, offering a meticulous analysis of the environmental, organizational, and technological dynamics in these regions.

2.9.2.2 European Perspective

Further extending to the European continent, scholars have ventured to uncover the adoption trends in countries such as Germany and Greece, as observed in the works of Miroshnychenko et al. (2012) and Roungeris et al. (2013). These studies illuminate the specific regional nuances influencing SaaS adoption, providing a detailed understanding of the regional determinants and trends shaping SaaS adoption in the European context.

To encapsulate, the scholarly discourse surrounding sector-specific and regional studies in SaaS adoption paints a rich and diverse landscape, encapsulating a myriad of perspectives drawn from various sectors and geographical contexts. These studies not only offer a deepened understanding of the sector-specific challenges and opportunities but also furnish critical insights into the regional determinants that influence SaaS adoption across different geographical landscapes.

Furthermore, these narratives foster a comprehensive understanding, allowing stakeholders to glean nuanced insights into the complex web of factors influencing SaaS adoption across different sectors and regions. Thus, these studies form a critical linchpin in the scholarly discourse on SaaS adoption, offering a multifaceted view that is both rich in depth and breadth, and instrumental in guiding future research and practical implementations in the continually evolving landscape of SaaS solutions.

2.10 Cloud Computing and Environmental Sustainability

In recent times, a burgeoning line of inquiry within the cloud computing and Software as a Service (SaaS) research has been the evaluation of its environmental implications, chiefly focusing on sustainability through energy efficiency. This notable shift in scholarly discourse aligns with the contemporary global emphasis on sustainability, thereby positioning cloud computing as a potent tool in facilitating environmentally sustainable operations. In this vein, the analysis centers on recent contributions to this thematic area, focusing on the newfound direction in SaaS research anchored in environmental sustainability.

2.10.1 Energy Efficiency and Environmental Concerns

Park et al. (2023) stand as recent contributors to the foray of studies investigating the environmental implications of cloud computing. These scholars have embarked on the exploration of energy efficiency, a fundamental aspect underlying the environmental sustainability of cloud services. Through their analytical lens, cloud computing is envisioned not just as a technological advancement, but as a tool that harbors the potential for an environmentally sustainable future, an outlook that leverages the efficiencies of cloud services to foster energy savings and reduce carbon footprints. This vantage point accords prominence to the operational efficiencies resultant of cloud computing adoption, elucidating the potential to diminish energy consumption and mitigate adverse environmental impacts.

2.10.2 Sustainability as a Focal Point

The burgeoning interest in the environmental sustainability of cloud computing is substantiated by an emerging body of literature that accentuates the importance of sustainable practices within the realm of SaaS and cloud computing. This trend signals a transformative trajectory in SaaS research, where the focus diverges from merely understanding the

technological aspects to incorporating a robust analysis of its environmental bearings. Consequently, this area of study facilitates a discourse steeped in the principles of environmental stewardship, thereby opening avenues for the development of cloud solutions that are not just efficient and innovative but also grounded in the principles of sustainability.

In summation, the emerging narrative within SaaS research, centered on environmental sustainability, offers a refreshing and pertinent perspective in the contemporary discourse. This thematic area, still in its nascent stages, embodies a rich potential for scholarly exploration, promising to unveil the multifaceted dimensions through which cloud computing intersects with sustainability objectives. By fostering a discourse that embraces the principles of environmental sustainability, it aligns the technological advancements within the cloud computing sphere with the globally acknowledged imperatives of sustainable development, thereby portraying cloud computing not just as a technological tool, but as a harbinger of a sustainable future. It is thus incumbent upon scholars and practitioners alike to nurture this discourse, steering the future of cloud computing towards a path that is not only innovative but also sustainable, carving a future that is harmoniously aligned with the environment.

2.11 Theoretical Perspectives and Case Studies

The research landscape pertaining to cloud computing and Software as a Service (SaaS) has seen a prolific growth, engendering a rich tapestry of theoretical frameworks and case study analyses that delve deep into the nuances of adoption behavior and the ramifications it has in various sectors. This segment seeks to accentuate the pivotal role played by theoretical perspectives and case studies in elucidating the complex dynamics of SaaS adoption, providing rich, multidimensional insights into real-world scenarios.

2.11.1 Theoretical Frameworks in SaaS Research

A significant strand in the literature revolves around empirical analyses grounded in established theoretical frameworks. In recent years, we have seen the incursion of theories such as the adaptive structuration theory (Wang et al., 2023) and rational choice theory (Shuraida & Titah, 2023), that have been instrumental in delineating the complex patterns and behaviors associated with the adoption of SaaS and cloud computing solutions.

For Example, the adaptive structuration theory, as explored by Wang et al. (2023), sheds light on the dynamic interplay between technology and organizational structures, elucidating the transformative potential of SaaS solutions in fostering organizational adaptability and enhancing operational efficiencies. On the other hand, Shuraida & Titah (2023) leverage the rational choice theory to examine the rational considerations that lead organisations to choose for or against cloud computing solutions can be understood by examining the decision-making processes that support cloud adoption.

2.11.2 Case Studies: A Window to Real-World Scenarios

Parallel to the theoretical explorations, case studies have emerged as a powerful tool in the scholarly discourse, offering a microscopic lens into the adoption of SaaS in various organizational contexts. A notable exploration is seen in the food industry, where scholars (Zadeh et al., 2018) have delineated the unique challenges and opportunities that come to fore in the context of cloud computing adoption, painting a rich picture of the practical realities that organizations grapple with.

Moreover, studies investigating CRM applications (Rossignoli et al., 2017) have provided granular insights into the implications of SaaS adoption in customer relationship management, thereby extending a nuanced understanding of the transformative potential of cloud computing solutions in enhancing business operations and fostering customer-centric approaches.

As we steer through the elaborate nexus of theoretical frameworks and case studies, it becomes evident that this multifaceted approach fosters a rich scholarly discourse, granting depth and texture to the understanding of cloud computing and SaaS adoption. The dialectics between theory and real-world scenarios manifest a vibrant academic landscape, where theoretical frameworks provide a structured pathway to decipher the complexities, and case studies offer a grounded, practical perspective, thereby enriching the discourse with multidimensional insights.

This continuous synergy between theoretical perspectives and case study analyses remains pivotal in unveiling the nuanced dynamics of SaaS adoption, inviting scholars to delve deeper, explore broader, and to foster a rich, interconnected narrative that is as grounded in theory as it is steeped in the realities of the contemporary business ecosystem. It is this dynamic interplay between theory and practice that promises to steer the future discourse in cloud computing and SaaS research, nurturing a rich, mature, and grounded scholarly landscape.

2.12 Summary and Conclusion

Over the past few decades, the rapid evolution and adoption of Software as a Service (SaaS) platforms have transformed business operations globally, introducing a new paradigm of efficiency and flexibility in the way services are delivered and consumed. Our meticulous traversal through the rich tapestry of literature on SaaS adoption has revealed deep insights into several pivotal aspects such as technological advancements, security and risks, quality and service measurements, organizational impacts and business models, as well as the implications on workforce and productivity.

Researchers have explored the various nuances of SaaS adoption from different angles, including business models and competitive dynamics, delving into the ever-evolving

landscape marked by a shift in strategies and competition among SaaS vendors (Luoma et al., 2018; Ma & Kauffman, 2014). Detailed sector-specific and regional studies have been conducted, offering a granular view of the adoption patterns in different industries and geographical locales, helping in understanding the unique challenges and opportunities that various sectors face while adopting SaaS solutions (Venkatachalam et al., 2014; Kruja et al., 2019).

Furthermore, the literature showcases a growing concern for environmental sustainability, steering the conversation towards the energy efficiency of cloud services and its role in fostering a sustainable technological ecosystem (Park et al., 2023). A wealth of case studies and theoretical perspectives have been leveraged to deepen the understanding of the adoption behavior, drawing upon a range of theories and real-world scenarios to elucidate the dynamics at play in different contexts (Wang et al., 2023; Shuraida & Titah, 2023).

Despite this rich repository of research and insights, a notable gap persists in the existing literature, particularly concerning the exploration of SaaS adoption factors among Small and Medium Enterprises (SMEs) in the Indian context. While studies have presented detailed analyses on a global scale and in various other regional settings, the unique socio-economic landscape of India — marked by a booming digital infrastructure, a vibrant startup ecosystem, and diverse business environments — remains relatively underexplored.

Given India's status as a burgeoning economic powerhouse with a substantial SME sector that significantly contributes to its GDP, it becomes crucial to dive deep into the specific factors influencing SaaS adoption in this segment. Moreover, understanding the influences at play in the Indian SME sector, be it cultural nuances, regulatory frameworks, or business practices, can offer a more rounded view of the global SaaS adoption narrative.

Therefore, there exists a pressing need to foster research endeavors that delve into the intricate dynamics of SaaS adoption among Indian SMEs, to facilitate a comprehensive understanding that is both regionally grounded and globally relevant. The future research could focus on bridging this gap by unraveling the unique patterns, challenges, and opportunities that define the SaaS adoption landscape in the vibrant and diverse Indian market, thereby contributing a fresh, contextualized perspective to the existing corpus of knowledge in the field.

Chapter 3 – Research Methodology

3.1 Research Problem

Cloud computing technologies, which evolved rapidly in the last couple of decades, has given rise to Software as a Service (SaaS), a model that allows businesses to access software applications over the internet without the need for traditional software installation. SaaS presents a particularly appealing proposition for Small and Medium Enterprises (SMEs) due to its cost-efficiency, scalability, and ease of use. Despite these advantages, the adoption rate of SaaS among SMEs in India varies significantly, influenced by a myriad of factors including but not limited to technological readiness, organizational culture, awareness, and perceived benefits and challenges.

India, being a burgeoning economy with a vast landscape of SMEs contributing significantly to its GDP, employment, and industrial output, presents a unique ecosystem for studying SaaS adoption. These enterprises are pivotal to the nation's economic growth, innovation, and competitiveness. However, the extent to which Indian SMEs embrace SaaS solutions, and the factors influencing their adoption decisions, remain underexplored areas. This gap signifies a crucial research problem, as understanding these elements is essential for policymakers, software providers, and the SMEs themselves to foster a more robust adoption framework that can enhance operational efficiencies and competitive advantages in a digital age.

Furthermore, the diversity of the Indian SME sector, characterized by a wide range of industries with varying degrees of digital maturity, adds complexity to the adoption landscape. There's a pressing need to empirically investigate the current state of SaaS adoption among these enterprises, identifying the key drivers, barriers, and the impact of external environmental factors. This study aims to address these gaps by providing an in-depth analysis of SaaS adoption among Indian SMEs, utilizing empirical data to uncover

patterns, challenges, and opportunities. The outcomes are expected to offer actionable insights for stakeholders and contribute to the broader discourse on digital transformation within the SME sector in emerging economies.

The research problem encapsulated by this study revolves around understanding the multifaceted dimensions influencing the adoption of SaaS by SMEs in India. It seeks to unravel the determinants of SaaS adoption, assess the perceived benefits and challenges, and ultimately, provide a roadmap for enhancing the adoption rates among SMEs in a key emerging market.

3.2 Research Purpose and Questions

This study's main goal is to empirically analyse the reasons that Small and Medium Enterprises (SMEs) in India are using to adopt Software as a Service (SaaS). The objective of this study is to determine and examine the primary motivators, obstacles, and overall effects of SaaS adoption on the competitive and operational performance of SMEs in India. By examining these factors, the report aims to present a thorough picture of the state of SaaS adoption today and provide guidance on how Indian SMEs may use SaaS technology to improve their operational effectiveness, scalability, and inventiveness. Additionally, the findings of this study are intended to inform policymakers, software providers, and business leaders about effective strategies to foster a more conducive environment for SaaS adoption among SMEs, ultimately contributing to the digital transformation agenda within the Indian economy. The following are the research questions of the study:

5. What are the factors which influence the decision of SMEs in India to adopt SaaS solutions?
6. What barriers do SMEs in India face in adopting SaaS solutions?

7. How does the adoption of SaaS impact the operational and competitive performance of SMEs in India?
8. What strategies can be adopted by stakeholders (policymakers, software providers, and SMEs) to enhance SaaS adoption among SMEs in India?

3.3 Operationalization of Theoretical Constructs

To explore the factors influencing the adoption of Software as a Service (SAAS) in small and medium-sized enterprises (SMEs), a theoretical model has been constructed, drawing from the foundational concepts of two key theories: the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) and the Technology Threat Avoidance Model (TTAT) (Liang & Xue, 2009). From UTAUT, the variables considered are Facilitating Conditions, Social Influence, Performance Expectancy, and Effort Expectancy. TTAT contributes variables such as Perceived Susceptibility, Perceived Severity, and Perceived Threat.

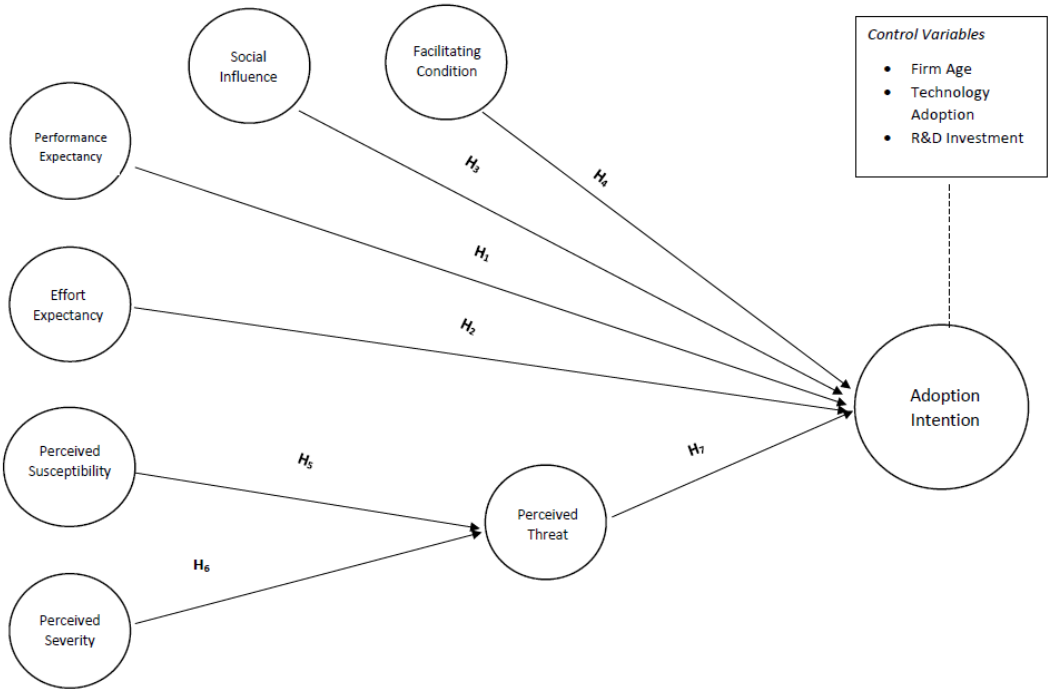
The UTAUT framework, as proposed by Venkatesh et al. (2003), suggests that Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC) are pivotal in determining the acceptance and use of technology. Specifically:

- PE refers to the belief that utilizing a particular system will improve job performance.
- EE indicates the ease of use associated with the system.
- SI is the perceived pressure from significant others to use the new system.
- FC denote the belief that there is adequate organizational and technical support for using the system.

Conversely, the TTAT framework by Liang and Xue (2009) focuses on avoidance behaviors related to technology adoption, emphasizing the importance of Perceived Threat (PT) and its components: Perceived Susceptibility (PSS) and Perceived Severity (PSE).

- Perceived Susceptibility involves the individual's subjective assessment of the likelihood of encountering negative consequences.
- Perceived Severity relates to concerns about the ethical and legal implications of technology use.
- Perceived Threat encompasses the overall sense of threat due to potential negative outcomes, such as data breaches or other security issues.

Figure 3.1: SAAS Adoption Model



3.4 Study Hypotheses

H_1 – Performance Expectancy will have significant influence on the adoption intention of SAAS

H_2 – Effort Expectancy will have significant influence on the adoption intention of SAAS

H_3 – Social Influence will have significant influence on the adoption intention of SAAS

H_4 – Facilitating Conditions will have significant influence on the adoption intention of SAAS

H_5 – Perceived Susceptibility will have significant influence on the perceived threat on the adoption of SAAS

H_6 – Perceived Severity will have significant influence on the perceived threat on the adoption of SAAS

H_7 – Perceived threat will have significant influence on the adoption intention of SAAS

3.5 Measurement Scale

Please rate the Below Statements

(From 1 – strongly disagree to 7 – strongly agree)

Construct	Indicator	1	2	3	4	5	6	7
Performance Expectancy *(Venkatesh et al., 2012)*	PE01 - I find SAAS useful in our line of work							
	PE02 - Using SAAS will increase efficiency on the job							
	PEO3 - Using SAAS will increase job productivity							
	PE04 – SAAS would improve the overall customer experience							
Effort Expectancy *(Venkatesh et al., 2012)*	EE01 – SAAS enable efficiency in business operation with minimal effort							
	EE02 - Handover and assistance from SAAS is smooth and understandable to carry on with the business operations and customer interaction							

	EE03 - I find SAAS easy to use							
Facilitating Condition *(Venkatesh et al., 2012)*	FC01 - I have the necessary resources to use/implement SAAS							
	FC02 – I/My team have the knowledge necessary to use/adopt SAAS							
	FC03 – My company/business unit facilitates the use of SAAS through various supporting initiatives							
	FC04 – I am aware of technological advancement in SAAS							
	FC05 – I have gone through training/facilitation on SAAS							
Social Influence *(Venkatesh et al., 2012)*	SI01 - Peers who influence my behavior think that I should use SAAS.							
	SI02 – My peers who use SAAS have a more positive attitude							

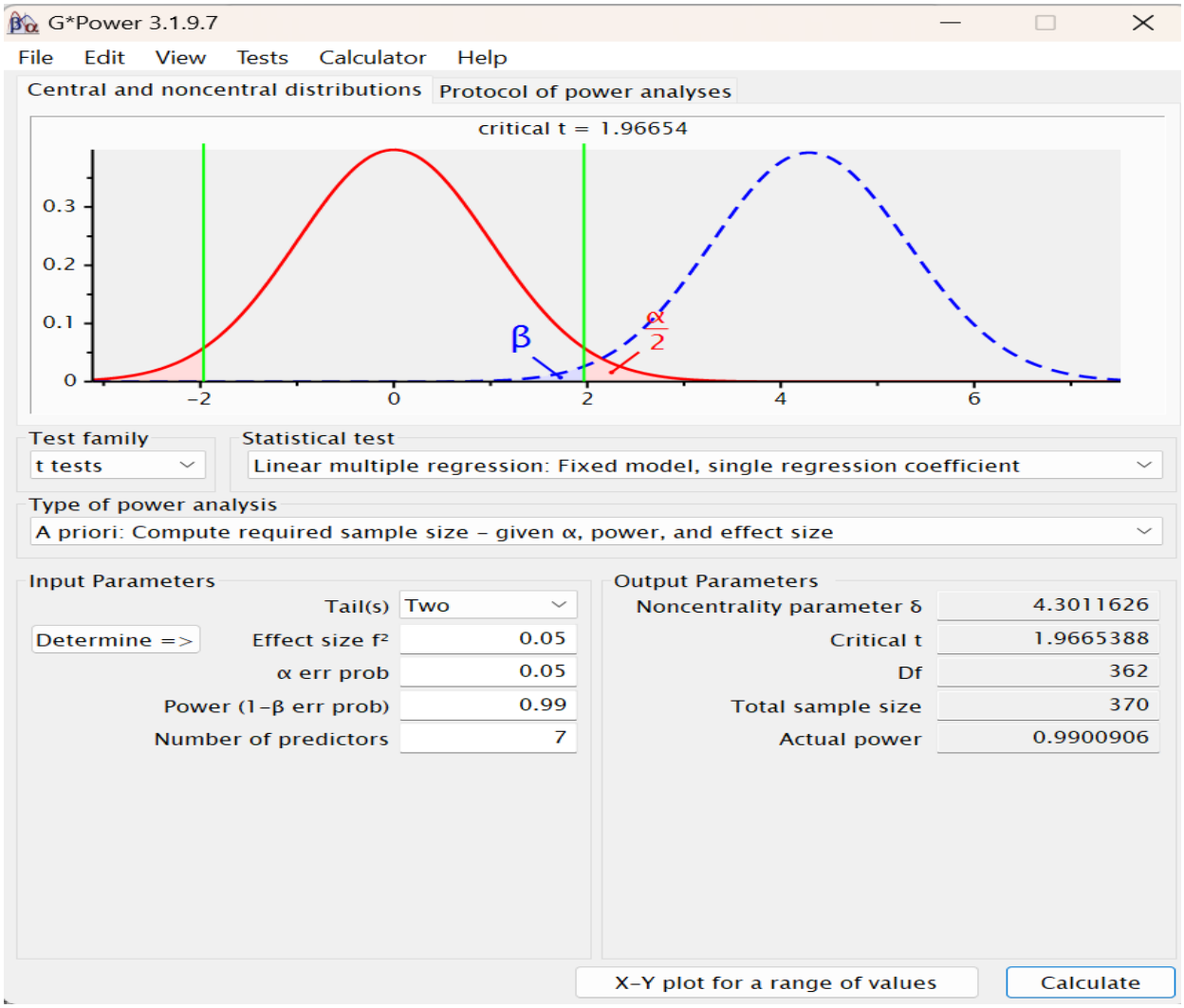
	towards the use of SAAS in their job.							
	SI03 - People who are important to me think that I should use SAAS.							
Perceived Susceptibility *(Liang & Xue, 2009)*	PS01 – There is a high probability that SAAS can cause security breaches.							
	PSO2 – It is likely that the use of SAAS will lead to misinformation.							
	PSO3 – It is plausible that SAAS might fail to effectively service clients.							
	PS04 - Use of SAAS would risk the reputation of the business							
Perceived Severity *(Liang & Xue, 2009)*	PSE01 – If a security breach occurred through SAAS, the consequences would be severe.							
	PSE02 – Misinformation from SAAS could have serious repercussions for my job.							

	PSE03 – Failure of SAAS to effectively service clients can have grave implications for the company.							
Perceived Threat *(Liang & Xue, 2009)*	PT01 – I am worried that SAAS might increase the risk to my job security.							
	PT02 – I am concerned about the potential threats that SAAS can bring to our existing systems.							
	PT03 – I perceive the adoption of SAAS as a threat to the quality of service.							
Adoption Intention *(Venkatesh et al., 2012)*	IU01 – Given the opportunity, I plan to use SAAS in my tasks.							
	IU02 – I am willing to integrate SAAS into my existing workflow							
	IU03 – I could envision adopting SAAS as a long-term tool for my role.							

3.6 Sample Size

Using G*Power software, the necessary sample size for the suggested study model was calculated. According to the program results, which are shown in Figure 3.2, a sample size of 370 is required. The sample size has been chosen at 900, which is almost three times the required quantity, in order to maximise Type I and Type II errors and improve the statistical accuracy of the model. It is anticipated that this larger sample size will guarantee the validity and consistency of the study's findings.

Figure 3.2: Sample Size



3.7 Sampling Technique

A purposive sampling technique will be employed for the study, as it is essential that respondents have a reasonable awareness of SaaS. This approach ensures that the data collected is relevant and informed.

3.8 Data

Primary data are mostly used in this study. A well-structured and pre-tested questionnaire will be used to obtain thoughts from respondents in order to guarantee the correctness and dependability of the data gathered.

3.9 Data Analysis

SMART PLS software will be utilised to conduct PLS-SEM analysis due to the intricate nature of the model. This approach ensures a thorough and precise evaluation of the model's intricate relationships and dependencies.

Chapter IV: Results and Analysis

A well-structured and pre-tested questionnaire was used to gather data from 900 respondents in order to achieve the study's objectives. It's crucial to remember that purposive sampling was used because answering the questions needed a certain degree of familiarity with and comprehension of SaaS models.

4.1 Demographics

The study's respondents' demographic profile offers a varied cross-section of individuals with a range of characteristics and locations (Table 4.1.1). Among the 900 participants, 44% are from Chennai, making up the majority of the group. Mumbai comes in second with 28%, followed by Delhi, Kolkata, and Bangalore with 11%, 13%, and 4%, respectively.

The cohort is strongly skewed in favour of men, who make up 81% of the responses, while women make up only 19% of the sample. A closer examination of the age distribution shows that maturity and possible job experience are concentrated in the 30- to 40-year-old age range, accounting for nearly half of the respondents (48%) and their potential. The 18–30 age group makes for a meagre 7.5% of the population, whereas the 40–50 age group accounts for a considerable 39%. Just 5.5% of the sample's participants are above 50, which suggests that the population as a whole lean younger.

The data suggests a preference for more recent companies based on the age of the firms the respondents are affiliated with, with 75% of the enterprises being under 20 years old. In contrast, a quarter of the remaining enterprises have been in operation for more than 20 years, indicating that the responder pool include both established and emerging corporate units.

When looking at technology adoption through a different lens, the findings clearly indicate a tendency towards quick integration, with 95% of respondents classifying their adoption pace

as Quick. Merely 5% of the questioned group perceive their approach as Deliberate, suggesting a notable focus on adaptability and promptness in response to technology advancements.

Regarding R&D spending, there is a clear difference. 39% of the respondents work for companies with significant R&D expenditures, indicating a strong focus on innovation and development. Nonetheless, the majority of 61% report low R&D expenditure, suggesting that there may be a disconnect between the acceptance of R&D's significance and its real application.

This demographic profile provides an insight into the diverse traits of the respondents, who are primarily from Mumbai and Chennai, are younger and primarily male, and clearly prefer quickly adopting new technologies in their relatively new businesses. The disparity in R&D spending levels points to different strategic goals and the possibility of more complex insights into SaaS uptake.

Table 4.1.1 – Demographic Profile of Respondents

Place		Gender		Age		Firm Age		Technology Adoption		R&D Investment	
Chennai	392 (44)	**Male**	728 (81)	**18-30 years**	68 (7.5)	**Greater than 20 years**	224 (25)	**Deliberate**	44 (05)	**High**	350 (39)
Mumbai	252 (28)	**Female**	172 (19)	**30-40 years**	432 (48)	**Less than 20 years**	676 (75)	**Quick**	856 (95)	**Low**	550 (61)
Delhi	100 (11)			**40-50 years**	350 (39)						
Kolkata	120 (13)			**Above 50 years**	50 (5.5)						

Bangalore	36 (4)											
Total	**900** **(100)**	**Total**	**900** **(100)**	**Total**	**900** **(100)**	**Total**	**900** **(100)**	**Total**	**900** **(100)**	**Total**	**900** **(100)**

Source: *Primary Data*

Note: The figures in parentheses are percentage to the total

4.2 PLS-SEM Results

4.2.1 Assessment of Measurement Models

To assess the measurement models, the guidelines by Hair et al. (2019) on reporting PLS-SEM results were followed. This study utilizes reflective indicator variables, and the assessment of reflective measurement models includes evaluating internal reliability, internal consistency, convergent validity, and discriminant validity.

Internal reliability is ensured by examining the indicator loadings, which are detailed in Table 4.2.1.

Indicator loadings explain the amount of variance shared between the individual variables and their associated construct. They ensure the indicator reliability of reflective measurement models. As shown in Table 4.2.1, all the indicator loadings in our measurement models exceed the recommended critical value of 0.708 (Hair et al., 2019). This critical value indicates that the associated construct explains more than 50% of the related indicator's variance, providing adequate item reliability. Thus, our model demonstrates satisfactory indicator reliability.

After ensuring indicator reliability, the next step is to assess internal consistency and convergent validity. Internal consistency of reflective constructs is assessed using composite reliability and ρA, while convergent validity is assessed using the Average Variance Extracted (AVE). The composite reliability, ρA, and AVE of our assessment model are shown in Table 4.2.2.

Table 4.2.2 shows that both the composite reliability and ρA fall within the recommended thresholds of 0.70 and 0.95. Additionally, all the AVE values exceed the recommended

critical value of 0.5. As a result, the internal consistency and convergent validity of our reflective evaluation model are demonstrated to an acceptable degree.

Table 4.2.1: Indicator Loadings

Construct	Item	Loading
Performance Expectancy	PE01	0.953
	PE02	0.945
	PE03	0.873
	PE04	0.946
Effort Expectancy	EE01	0.927
	EE02	0.920
	EE03	0.915
Facilitating Condition	FC01	0.772
	FC02	0.879
	FC03	0.866
	FC04	0.831
	FC05	0.747
Social Influence	SI01	0.878

	SI02	**0.910**
	SI03	0.891
Perceived Severity	PSE01	0.932
	PSE02	0.920
	PSE03	0.917
Perceived Susceptibility	PS01	0.779
	PS02	0.831
	PS03	0.811
	PS04	0.796
Perceived Threat	PT01	0.842
	PT02	0.841
	PT03	0.821
Intention to Use	IU01	0.938
	IU02	0.892
	IU03	0.919

Source: *Primary Data*

Note: PLS-SEM analysis is done using SMART PLS software

Table 4.2.2: Reliability and Validity

Constructs	ρA	Composite Reliability	Average Variance Extracted
Effort Expectancy	0.912	0.943	0.848
Facilitating Conditions	0.885	0.911	0.673
Intention to Use	0.908	0.940	0.840
Perceived Severity	0.916	0.945	0.852
Perceived Susceptibility	0.899	0.880	0.647
Perceived Threat	0.785	0.873	0.697
Performance Expectancy	0.950	0.962	0.864
Social Influence	0.890	0.922	0.797

Source: *Primary Data*

Note: PLS-SEM analysis is done using SMART PLS software

The final step in assessing the reflective measurement model is to ensure discriminant validity, which indicates the extent to which each construct is empirically distinct from other constructs. The HTMT (Heterotrait-Monotrait) ratio is used to assess the discriminant validity of the model. The HTMT values are shown in Table 4.2.3.

HTMT is the mean correlation value of items across constructs relative to the geometric mean of average correlations for items measuring the same construct. When HTMT values are

high, discriminant validity is low. As seen in Table 4.2.3, all the HTMT values of our reflective measurement model are significantly lower than the conservative threshold limit of 0.85. Therefore, it can be concluded that the discriminant validity of our model is satisfactorily established.

Table 4.2.3: Hetrotrait-monotrait (HTMT) Ratio of Correlations

	Effort Expectancy	Facilitating Conditions	Intention to Use	Perceived Severity	Perceived Susceptibility	Perceived Threat	Performance Expectancy
Facilitating Conditions	0.761						
Intention to Use	0.504	0.604					
Perceived Severity	0.362	0.412	0.121				
Perceived Susceptibility	0.307	0.352	0.302	0.721			
Perceived Threat	0.140	0.099	0.239	0.731	0.597		
Performance Expectancy	0.618	0.681	0.508	0.503	0.333	0.208	
Social Influence	0.609	0.662	0.486	0.203	0.193	0.090	0.500

Source: *Primary Data*

Note: PLS-SEM analysis is done using SMART PLS software

4.2.2 Assessment of the Structural Model

The criteria established by Hair et al. (2019) have been adhered to in evaluating the structural model. Examining the structural model's explanatory and predictive power, determining the relevance and significance of path coefficients, and detecting any collinearity problems are the three main steps in the assessment process, according to Hair et al. (2019). Tables 4.2.4, 4.2.5, and 4.2.6 contain the outcomes of our structural model, and Figure 4.2.1 shows the significance of the route coefficients with the pertinent hypotheses separately.

The VIF (Variance Inflation Factor) is used to determine whether the model has collinearity problems. All VIF values are less than 3, as shown in Table 4.2.4, with 2.471 serving as the biggest inner VIF value (Hair et al., 2019). As a result, we can say that the inner model's collinearity is not at a critical level and has no bearing on the regression's outcomes.

Table 4.2.4: Variance Inflation Factor

	Intention to Use	**Perceived Threat**
Effort Expectancy	2.163	
Facilitating Conditions	2.471	
Perceived Severity		1.777
Perceived Susceptibility		1.777
Perceived Threat	1.057	
Performance Expectancy	1.819	

Social Influence	1.660

An examination of the R^2 values in Table 4.2.5 reveals that perceived susceptibility and perceived severity are key predictors of perceived threat (R^2=0.416). Additionally, perceived threat, performance expectancy, effort expectancy, social influence, and facilitating conditions are significant predictors of the intention to use (R^2=0.414). With R2R^2R2 values for the endogenous constructs ranging between 0.25 and 0.50, the model demonstrates a moderate level of effectiveness (Hair et al., 2019) in explaining the intention to adopt SaaS.

Table 4.2.5: R^2 Value

Construct	R-square
Intention to Use	0.414
Perceived Threat	0.416

The size and significance of the route coefficients between the endogenous and exogenous constructs are shown in Table 4.2.6 and Figure 4.2.1. The research integrates the Technology Threat Avoidance Model (TTAT) and the Unified Theory of Acceptance and Use of Technology (UTAUT) to create a comprehensive theoretical framework that is used to examine the factors influencing the adoption of Software as a Service (SaaS) in the small and medium-sized enterprises (SMEs) sector. The model's empirical results offer valuable insights into the relationship between several factors and the intention to utilise SaaS.

From the UTAUT perspective, Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC) are shown to be crucial in determining the intention to use SaaS. The results indicate that Performance Expectancy has a significant

positive impact on the intention to use (coefficient = 0.234, t-statistic = 6.573, p-value = 0.000), suggesting that SMEs are more likely to adopt SaaS when they believe it will enhance their job performance. Similarly, Effort Expectancy positively influences the intention to use (coefficient = 0.103, t-statistic = 2.866, p-value = 0.004), indicating that the perceived ease of use is a critical factor. Facilitating Conditions also show a significant positive effect (coefficient = 0.290, t-statistic = 7.320, p-value = 0.000), highlighting the importance of organizational and technical support in promoting SaaS adoption. Social Influence, although slightly weaker, still significantly impacts the intention to use (coefficient = 0.097, t-statistic = 2.426, p-value = 0.015), implying that peer and social pressures play a role in decision-making.

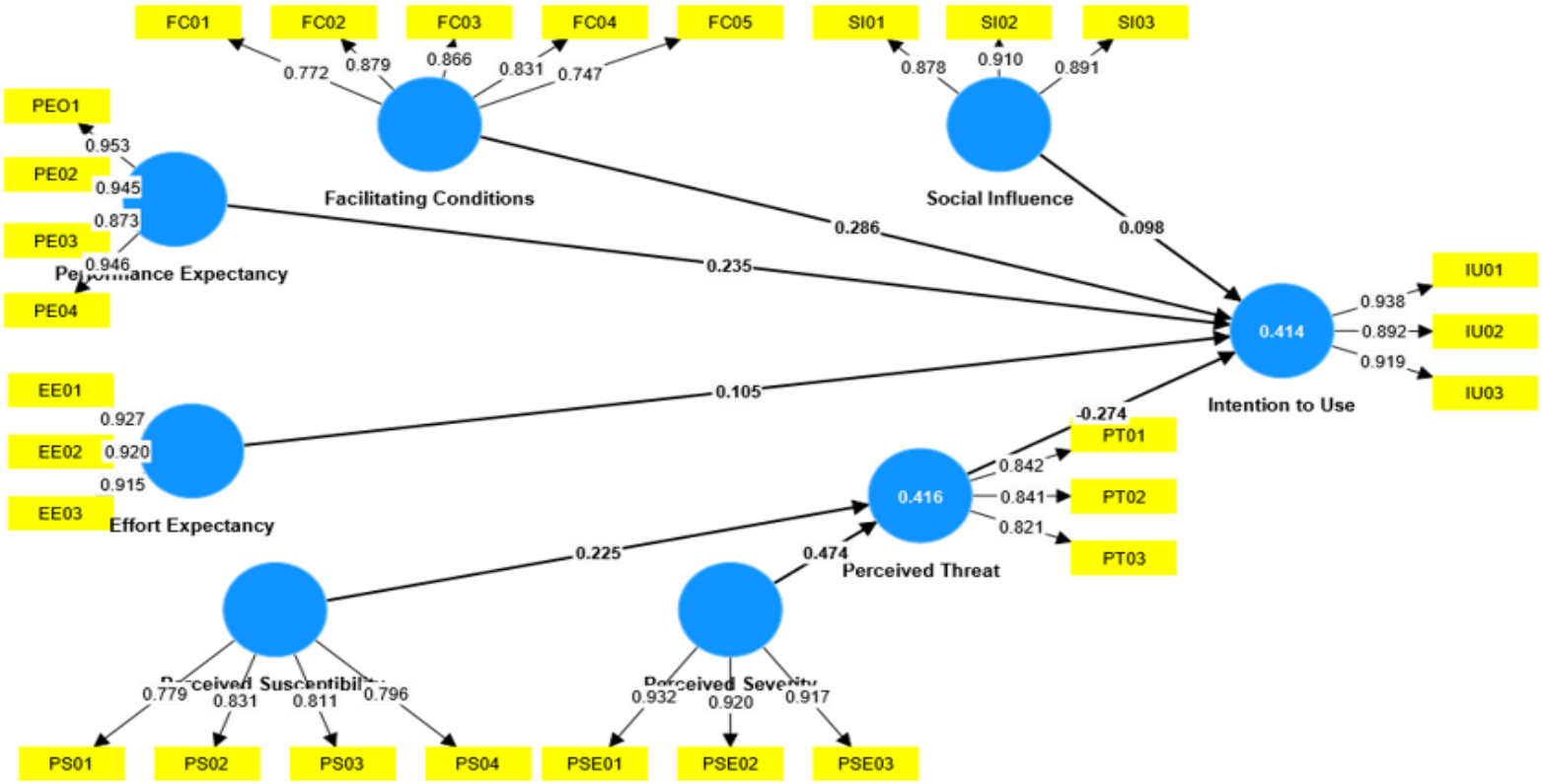
The TTAT components, which focus on avoidance behaviors related to technology adoption, reveal that Perceived Threat (PT) significantly negatively impacts the intention to use SaaS (coefficient = -0.275, t-statistic = 9.469, p-value = 0.000). This underscores the critical role of perceived risks, such as data breaches and security concerns, in hindering adoption. The model further dissects PT into its constituents: Perceived Susceptibility (PSS) and Perceived Severity (PSE). Both PSS and PSE significantly contribute to the overall perception of threat (PSS: coefficient = 0.224, t-statistic = 4.602, p-value = 0.000; PSE: coefficient = 0.475, t-statistic = 8.465, p-value = 0.000), indicating that SMEs' awareness of their vulnerability and the potential severity of negative outcomes are pivotal in shaping their threat perceptions.

Interestingly, variables such as Firm Age and R&D Investment largely do not show significant direct effects on the key constructs within the model, except for specific paths. Firm Age impacts Perceived Susceptibility (coefficient = 0.179, t-statistic = 2.508, p-value = 0.012), suggesting that older firms may feel more vulnerable to risks associated with new technologies. R&D Investment shows a significant negative impact on Effort Expectancy

(coefficient = -0.140, t-statistic = 2.006, p-value = 0.045) and Social Influence (coefficient = -0.206, t-statistic = 2.931, p-value = 0.003), indicating that higher R&D spending might complicate the perceived ease of use and reduce the social pressure to adopt SaaS.

Through the combination of acceptance and avoidance behaviours, the study offers a complex picture of SaaS uptake in SMEs. The importance of perceived benefits, simplicity of use, support infrastructure, and social variables is highlighted by the considerable positive connections found between the intention to use and PE, EE, FC, and SI. On the other hand, the substantial drawbacks of PT emphasise how important it is to address security and risk issues in order to promote wider usage. This all-encompassing strategy provides insightful information for practitioners and policymakers looking to increase SaaS usage in the SME sector.

Figure 4.2.1: Structural Model Results



Source: *Primary Data*
Note: PLS-SEM analysis is done using SMART PLS software

Table 4.2.6: Path Coefficients

Path	Original sample (O)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Significance
Effort Expectancy -> Intention to Use	0.103	0.036	2.866	0.004	Yes
Facilitating Conditions -> Intention to Use	0.290	0.040	7.320	0.000	Yes
Perceived Severity -> Perceived Threat	0.475	0.056	8.465	0.000	Yes
Perceived Susceptibility -> Perceived Threat	0.224	0.049	4.602	0.000	Yes

Perceived Threat -> Intention to Use	-0.275	0.029	9.469	0.000	Yes
Performance Expectancy -> Intention to Use	0.234	0.036	6.573	0.000	Yes
Social Influence -> Intention to Use	0.097	0.040	2.426	0.015	Yes
Firm Age -> Effort Expectancy	-0.074	0.078	0.952	0.341	No
Firm Age -> Facilitating Conditions	-0.075	0.078	0.955	0.339	No
Firm Age -> Intention to Use	-0.040	0.057	0.697	0.486	No

Firm Age -> Perceived Severity	-0.004	0.076	0.057	0.955	No
Firm Age -> Perceived Susceptibility	0.179	0.071	2.508	0.012	Yes
Firm Age -> Perceived Threat	0.040	0.060	0.667	0.505	No
Firm Age -> Performance Expectancy	0.049	0.080	0.608	0.543	No
Firm Age -> Social Influence	-0.072	0.077	0.943	0.346	No
R&D Investment -> Effort Expectancy	-0.140	0.070	2.006	0.045	Yes

R&D Investment -> Facilitating Conditions	0.030	0.068	0.446	0.655	No
R&D Investment -> Intention to Use	-0.023	0.054	0.421	0.674	No
R&D Investment -> Perceived Severity	0.075	0.071	1.065	0.287	No
R&D Investment -> Perceived Susceptibility	0.051	0.070	0.724	0.469	No
R&D Investment -> Perceived Threat	-0.047	0.050	0.939	0.348	No
R&D Investment -> Performance Expectancy	0.015	0.070	0.210	0.834	No

R&D Investment -> Social Influence	-0.206	0.070	2.931	0.003	Yes
Technology Adoption -> Effort Expectancy	0.050	0.141	0.354	0.724	No
Technology Adoption -> Facilitating Conditions	0.245	0.136	1.811	0.070	Yes
Technology Adoption -> Intention to Use	-0.097	0.130	0.747	0.455	No
Technology Adoption -> Perceived Severity	-0.208	0.205	1.016	0.310	No
Technology Adoption -> Perceived Susceptibility	0.044	0.152	0.288	0.773	No

Technology Adoption -> Perceived Threat	-0.112	0.119	0.939	0.348	No
Technology Adoption -> Performance Expectancy	-0.122	0.146	0.834	0.404	No
Technology Adoption -> Social Influence	0.268	0.124	2.150	0.032	Yes

Source: *Primary Data*

Note: PLS-SEM analysis is done using SMART PLS software

4.2.3 Accepted and Rejected Hypotheses

4.2.3.1 Accepted Hypotheses:

- **H1**: Performance Expectancy significantly influences the adoption intention of SAAS (coefficient = 0.234, t-statistic = 6.573, p-value = 0.000). This shows that individuals are more likely to adopt SAAS when they believe it enhances their job performance.

- **H2**: Effort Expectancy significantly influences the adoption intention of SAAS (coefficient = 0.103, t-statistic = 2.866, p-value = 0.004). This indicates that the ease of use of SAAS is a critical factor in adoption.

- **H3**: Social Influence significantly influences the adoption intention of SAAS (coefficient = 0.097, t-statistic = 2.426, p-value = 0.015). Peer and social pressures play a role in the decision to adopt SAAS.

- **H4**: Facilitating Conditions significantly influence the adoption intention of SAAS (coefficient = 0.290, t-statistic = 7.320, p-value = 0.000). Organizational and technical support are important factors in promoting adoption.

- **H5**: Perceived Susceptibility significantly influences the perceived threat of adopting SAAS (coefficient = 0.224, t-statistic = 4.602, p-value = 0.000). This shows that the perception of vulnerability to risks affects perceived threat.

- **H6**: Perceived Severity significantly influences the perceived threat of adopting SAAS (coefficient = 0.475, t-statistic = 8.465, p-value = 0.000). The perceived seriousness of potential negative outcomes also contributes to the overall threat perception.

- **H7**: Perceived Threat significantly influences the adoption intention of SAAS, but in a negative manner (coefficient = -0.275, t-statistic = 9.469, p-value = 0.000). Higher perceived threat reduces the intention to adopt SAAS, highlighting the critical role of risk and security concerns.

4.2.3.2 Rejected Hypotheses: None of the hypotheses related to the key constructs of UTAUT and TTAT models were rejected, as they all demonstrated statistically significant relationships with adoption intention or perceived threat.

In conclusion, all the proposed hypotheses (H1 to H7) are accepted, with significant positive or negative effects on SAAS adoption intention and perceived threat.

4.2.4 Structural Mediation

The significance and strength of the mediating constructs were evaluated using the bootstrapping procedure at a 95% confidence interval, with the results presented in Table 4.2.7.

Table 4.2.7: Structural Mediation

	Original sample (O)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Sig.
Perceived Severity -> Perceived Threat -> Intention to Use	-0.130	0.019	6.721	0.000	Yes
Perceived Susceptibility -> Perceived Threat -> Intention to Use	-0.061	0.016	3.827	0.000	Yes

Source: *Primary Data*

Note: *PLS-SEM analysis is done using SMART PLS software.*

The additional paths in the study's theoretical model involve examining how Perceived Severity and Perceived Susceptibility, mediated by Perceived Threat, influence the Intention to Use SaaS in SMEs. The results provide further insights into the complex dynamics of threat perception and its impact on technology adoption.

Firstly, the path from Perceived Severity to Perceived Threat to Intention to Use shows a negative and significant relationship (coefficient = -0.130, standard deviation = 0.019, t-

statistic = 6.721, p-value = 0.000). This indicates that as the perceived severity of potential negative outcomes (such as data breaches or security issues) increases, the perceived threat also increases, which in turn significantly decreases the intention to use SaaS. This result underscores the importance of addressing the potential severity of risks associated with SaaS adoption to reduce the perceived threat and consequently enhance the intention to use SaaS.

Secondly, the path from Perceived Susceptibility to Perceived Threat to Intention to Use also reveals a negative and significant relationship (coefficient = -0.061, standard deviation = 0.016, t-statistic = 3.827, p-value = 0.000). This suggests that as users feel more susceptible or vulnerable to potential risks, the perceived threat increases, leading to a decreased intention to use SaaS. This highlights the role of perceived vulnerability in shaping threat perceptions and its subsequent impact on adoption intentions.

In summary, both Perceived Severity and Perceived Susceptibility significantly influence the intention to use SaaS through their impact on Perceived Threat. The findings suggest that reducing perceptions of severity and susceptibility of risks associated with SaaS can lower the overall perceived threat, thereby increasing the likelihood of adoption. These insights are crucial for developing strategies to mitigate perceived risks and promote the adoption of SaaS in SMEs, such as enhancing security measures, providing thorough risk assessments, and effectively communicating these to potential users.

4.2.5 Predict Relevance of the Model

Table 4.2.8 shows that the model has achieved a moderate level of success (Hair et al., 2019) in explaining the intention to adopt SaaS models, as evidenced by the R^2 value of 0.414 for the endogenous construct, which is close to 0.5. However, the R^2 statistic only measures the in-sample explanatory power of the model (Saari et al., 2021). To evaluate the out-of-sample

predictive relevance of our model for SaaS adoption, Q2 values were obtained for major constructs using the blindfolding technique, and the results are displayed in Table 4.2.6.

Table 4.2.8: Predict Relevance of the Model

Construct	Q^2 Predict
Perceived Threat	0.125
Intention to Use	0.498

Source: *Primary Data*

Note: *PLS-SEM analysis is done using SMART PLS software*

It can be seen from Table 4.2.8, that the $Q^2_{predict}$ values are above zero. It could be noted that $Q^2_{predict}$ is used to verify that the predictions have outpaced the most naïve benchamark, which has been defined as the indicator means from the analysis sample (Hair et. al, 2019). This proves the out-of-sample predict relevance of the model.

4.2.6 Importance-Performance Map Analysis (IMPA)

In order to identify the impact and perforamnce of the constructs with respect to the endogeneous construct, importance-performance map analysis (IMPA) has been conducted with intention to use as the target construct and the results are shown in Table 4.2.9 and Figure 4.2.2. The results of IMPA demonstrate for which exogenous construct the total

effects are important by explaining the variance of the endogenous construct (Saari et. al, 2021).

The Importance-Performance Map Analysis (IPMA) results provide valuable insights into the factors influencing the adoption of Software as a Service (SaaS) in small and medium-sized enterprises (SMEs). Effort Expectancy demonstrates a positive and significant impact on the intention to use SaaS, with a high-performance score, indicating that the perceived ease of use is a crucial factor in encouraging adoption. Facilitating Conditions, while having a relatively low impact on the intention to use, still perform reasonably well, suggesting that the organizational and technical infrastructure is somewhat important but not a major determinant. Perceived Severity and Perceived Susceptibility both exhibit significant negative impacts on the intention to use SaaS, with performance scores indicating room for improvement in mitigating these perceptions. This reflects that higher perceptions of severity and vulnerability reduce the likelihood of adoption. Perceived Threat stands out as having the most substantial negative impact on the intention to use, highlighting it as a critical barrier to adoption. The high performance score in this area indicates that perceived threat is a significant issue that needs to be addressed to improve adoption rates. Performance Expectancy has a positive but moderate impact, suggesting that while users recognize the potential performance benefits of SaaS, it is not the most influential factor. Social Influence also positively affects the intention to use, indicating that social pressures and recommendations play a role in adoption decisions. The overall intention to use SaaS is reasonably high, reflecting a generally positive attitude towards adoption among SMEs. However, the significant barriers posed by perceived severity, susceptibility, and threat suggest that these areas need to be addressed through improved security measures, risk communication, and support structures to further enhance adoption rates. The average performance score indicates a moderate level of overall performance in the adoption of SaaS,

highlighting the need for targeted efforts to reduce perceived risks and bolster the factors that positively influence adoption.

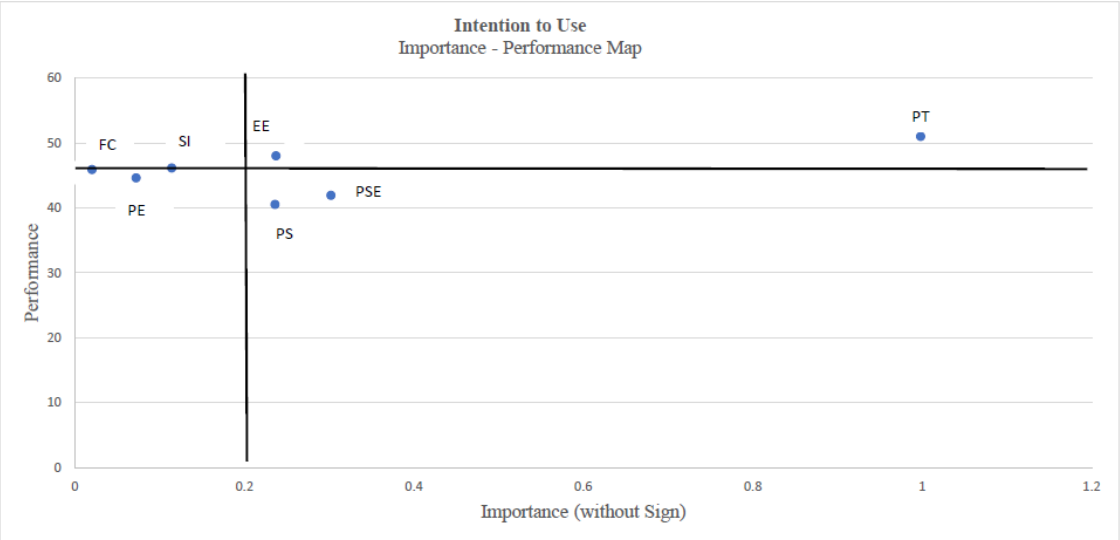
Table 4.2.9: Importance-Performance Map Analysis

	Unstandardized Total Effect (With Sign)	Unstandardized Total Effect (Without Sign)	Performance	LV Performance
Effort Expectancy	0.237	0.237	48.029	-
Facilitating Condition	0.02	0.02	45.908	-
Perceived Severity	-0.302	0.302	41.938	-
Perceived Susceptibility	-0.236	0.236	40.546	-
Perceived Threat	-0.998	0.998	51.005	-
Performance Expectancy	0.072	0.072	44.62	-
Social Influence	0.114	0.114	46.138	-
Intention to Use	-	-	-	49.859
Average	-	0.3	45.5	

Source: *Primary Data*

Note: PLS-SEM analysis is done using SMART PLS software

Figure: 4.2.2: Importance-Performance Map Analysis



Note: *PE = Performance Expectancy, EE = Effort Expectancy, FC = Facilitating Conditions, SI = Social Influence, PS = Perceived Susceptibility, PSE = Perceived Severity, PT = Perceived Threat.*

Chapter V – Discussion

5.1 Key Findings

1. Positive Factors Influencing SaaS Adoption

- **Effort Expectancy (EE)**
    - Positive and significant impact on the intention to use SaaS.
    - High performance score indicating the perceived ease of use as crucial for adoption.
- **Facilitating Conditions (FC)**
    - Positive impact on the intention to use, but less significant than other factors.
    - Indicates the importance of organizational and technical support.
- **Performance Expectancy (PE)**
    - Positive but moderate impact on the intention to use SaaS.
    - Users recognize performance benefits but it is not the most influential factor.
- **Social Influence (SI)**
    - Positive effect on the intention to use SaaS.
    - Highlights the role of peer and social pressures in adoption decisions.

2. Negative Factors Influencing SaaS Adoption

- **Perceived Threat (PT)**
    - Most substantial negative impact on the intention to use SaaS.

    - High-performance score underscores the need to address perceived threats to improve adoption rates.

- **Perceived Severity (PSE)**
    - Significant negative impact on the intention to use SaaS.
    - Higher perceptions of severity reduce the likelihood of adoption.
- **Perceived Susceptibility (PSS)**
    - Significant negative impact on the intention to use SaaS.
    - Higher perceptions of vulnerability reduce the likelihood of adoption.

3. Mediating Effects

- **Perceived Severity to Perceived Threat to Intention to Use**
    - Negative and significant relationship.
    - Indicates that as perceived severity increases, perceived threat also increases, significantly decreasing the intention to use SaaS.
- **Perceived Susceptibility to Perceived Threat to Intention to Use**
    - Negative and significant relationship.
    - Suggests that increased perceived susceptibility leads to higher perceived threat, reducing the intention to use SaaS.

4. Mixed Effects of Other Variables

- **Firm Age**
    - Impacts Perceived Susceptibility, with older firms feeling more vulnerable to risks associated with new technologies.

- **R&D Investment**
    - Negative impact on Effort Expectancy and Social Influence.
    - Higher R&D spending might complicate perceived ease of use and reduce social pressures to adopt SaaS.

5. Importance-Performance Map Analysis (IPMA)

- **Effort Expectancy**
    - High-performance score reinforcing its crucial role in SaaS adoption.
- **Perceived Threat**
    - Most substantial negative impact, highlighting the necessity of addressing security and risk concerns.
- **Overall Performance**
    - Average performance score indicates moderate overall performance in SaaS adoption.
    - Significant barriers posed by perceived severity, susceptibility, and threat require targeted efforts to enhance adoption rates.

These findings offer valuable insights for developing strategies to promote SaaS adoption in SMEs by addressing both positive and negative influencing factors.

5.2 Perceived Threat and SAAS Adoption

The impact of perceived threat on the adoption of Software as a Service (SaaS) among small and medium-sized enterprises (SMEs) is significant and multifaceted. Perceived threat, which encompasses concerns about data security, privacy, and potential breaches, acts as a critical

barrier to the adoption of SaaS solutions. This perception is influenced by the perceived severity and susceptibility to these threats. Studies have shown that when SMEs perceive a high risk of data breaches or loss of sensitive information, their intention to adopt cloud-based services like SaaS decreases substantially (Benlian & Hess, 2011).

The findings from the current study align with this perspective, indicating that perceived threat has the most substantial negative impact on the intention to use SaaS, with a high unstandardized total effect. This suggests that SMEs' concerns about potential security risks and data breaches significantly deter them from adopting these services. The mediation analysis further reveals that perceived severity and perceived susceptibility contribute to the overall perceived threat, which in turn negatively impacts the intention to use SaaS. This implies that as SMEs become more aware of the potential severity and their vulnerability to such threats, their perceived threat increases, leading to a decreased likelihood of adoption (Deniswara et al., 2021).

Furthermore, the literature supports that SMEs, due to their limited resources and expertise in cybersecurity, are particularly sensitive to perceived threats. They often lack the robust security infrastructure that larger enterprises possess, making them more vulnerable to attacks and breaches (Gupta et al., 2013). Consequently, their heightened perception of threat leads to a more cautious approach towards adopting SaaS, despite its potential benefits in terms of scalability, cost savings, and operational efficiency.

Mitigating these perceived threats involves addressing security concerns directly through enhanced security measures, transparent communication about data protection practices, and providing evidence of compliance with international security standards. For instance, certifications and adherence to regulations such as GDPR can help alleviate some of the fears SMEs have regarding data security (Troshani et al., 2013). Additionally, offering tailored

solutions that address specific security needs of SMEs can further reduce perceived threats and encourage adoption (Dande & Lee, 2019).

In summary, perceived threat significantly impacts SaaS adoption among SMEs by exacerbating fears related to data security and breaches. Addressing these concerns through improved security measures and transparent communication is crucial for enhancing adoption rates. The findings underscore the importance of understanding and mitigating perceived threats to promote the broader acceptance and use of SaaS solutions in the SME sector.

5.3 Performance Expectancy

The adoption of Software as a Service (SaaS) by small and medium-sized organisations (SMEs) is significantly influenced by performance expectations. The degree to which a person expects that utilising a specific technology will enable them to improve their job performance is known as performance expectancy. One of the main factors influencing the acceptance and use of technology is this construct, which comes from the Unified Theory of Acceptance and Use of Technology (UTAUT).

The study's findings, which show a substantial positive correlation between performance expectancy and intention to use SaaS (t-statistic of 6.573, p-value of 0.000, and coefficient of 0.234), show this relationship. This shows that when SMEs feel that using SaaS solutions will improve their ability to conduct their jobs, they are more likely to accept these services. This result is in line with other studies that show that adoption of cloud services is largely driven by perceived performance gains (Benlian et al., 2011).

For SMEs, the perceived advantages of SaaS include improved efficiency, scalability, and access to advanced features that might otherwise be cost-prohibitive. By leveraging SaaS, SMEs can gain access to state-of-the-art technology and tools that enhance productivity and

competitive advantage without the need for significant upfront investment in IT infrastructure (Attaran et al., 2019).

Moreover, performance expectancy is closely linked to the perceived utility and effectiveness of SaaS applications in meeting business needs. When SMEs perceive that SaaS solutions can streamline their operations, reduce costs, and improve service delivery, their intention to adopt these technologies increases (Gupta et al., 2013). This highlights the importance of demonstrating tangible performance benefits to potential users to drive adoption.

However, while performance expectancy is a significant factor, it is not the sole determinant of SaaS adoption. Other factors, such as perceived threats, effort expectancy, facilitating conditions, and social influence, also play critical roles. For instance, even if SMEs recognize the performance benefits of SaaS, concerns about data security and privacy can hinder adoption (Deniswara et al., 2021).

In conclusion, performance expectancy significantly impacts the adoption of SaaS among SMEs by influencing their perception of the performance benefits associated with these services. To enhance adoption rates, it is essential for SaaS providers to clearly communicate and demonstrate the performance advantages of their solutions, addressing any potential concerns to build confidence among potential users. This approach not only promotes the perceived value of SaaS but also aligns with the broader goal of encouraging technological innovation and efficiency within the SME sector.

5.4 Effort Expectancy

Effort expectancy is a critical determinant in the adoption of Software as a Service (SaaS) among small and medium-sized enterprises (SMEs). It refers to the degree of ease associated with the use of a particular system. This construct, derived from the Unified Theory of

Acceptance and Use of Technology (UTAUT), significantly influences users' intentions to adopt new technologies.

Results of the study indicate that the intention to use SaaS is significantly positively impacted by effort expectancy, with a p-value of 0.004, a t-statistic of 2.866, and a coefficient of 0.103. This suggests that SMEs are more likely to adopt SaaS solutions when they believe them to be user-friendly. This result is in line with previous research that highlights the significance of intuitive user interfaces and simplicity of use in encouraging the adoption of new technologies (Venkatesh et al., 2003).

For SMEs, the ease of use of SaaS solutions is particularly important because they often lack the extensive IT support and resources available to larger organizations. A system that is perceived as easy to understand and operate can reduce the learning curve and the time required for employees to become proficient in its use. This, in turn, can lower the overall costs associated with training and support (Gupta et al., 2013).

Moreover, when SaaS solutions are designed with user-friendly interfaces and intuitive features, they can enhance user satisfaction and productivity. SMEs are more likely to adopt SaaS when they believe that it will not only improve their operational efficiency but also be straightforward to implement and use on a day-to-day basis (Al-Ghofaili & Al-Mashari, 2014). This ease of use can be a significant competitive advantage for SaaS providers targeting the SME market.

However, the impact of effort expectancy should be considered alongside other factors such as performance expectancy, facilitating conditions, and perceived threats. While ease of use is crucial, it must be complemented by perceived performance benefits and adequate support structures to ensure successful adoption (Benlian et al., 2011).

In conclusion, effort expectancy plays a vital role in the adoption of SaaS among SMEs by emphasizing the importance of ease of use. SaaS providers need to focus on designing solutions that are user-friendly and easy to implement to encourage adoption. By reducing the perceived effort required to use these technologies, providers can enhance the attractiveness of SaaS solutions, thereby supporting the broader goal of technological advancement and operational efficiency within the SME sector.

5.5 Facilitating Conditions

The adoption of Software as a Service (SaaS) by small and medium-sized organisations (SMEs) is influenced by favourable conditions. The degree to which a person thinks that an organisational and technological infrastructure exists to facilitate the use of a system is referred to as the facilitating conditions. This concept, which is a component of the Unified Theory of Acceptance and Use of Technology (UTAUT), is essential in figuring out how people accept and use technology.

With a coefficient of 0.290, a t-statistic of 7.320, and a p-value of 0.000, the study's findings show that favourable and significant conditions have an impact on the desire to adopt SaaS. This suggests that when SMEs believe there is sufficient organisational and technical support to enable the adoption of these technologies, they are more inclined to choose SaaS solutions. This result is consistent with other studies that stress the value of an infrastructure that facilitates technology adoption (Venkatesh et al., 2003).

For SMEs, facilitating conditions encompass various aspects, including the availability of technical support, adequate training for employees, reliable internet connectivity, and robust IT infrastructure. When SMEs feel confident that these elements are in place, they are more likely to embrace SaaS solutions. This support reduces the perceived risks and barriers

associated with adopting new technologies, making the transition smoother and more manageable (Almazroi et al., 2017).

Furthermore, the presence of strong facilitating conditions can enhance the overall user experience, leading to higher satisfaction and sustained use of SaaS solutions. SMEs are particularly sensitive to these factors because they often operate with limited resources and cannot afford extensive downtime or technical issues. Therefore, the assurance of continuous support and reliable infrastructure is crucial for their willingness to adopt SaaS (Gupta et al., 2013).

However, while facilitating conditions are important, they must be considered in conjunction with other factors such as effort expectancy, performance expectancy, and perceived threats. Even with robust facilitating conditions, if the system is not easy to use or perceived as beneficial, adoption may still be hindered. Additionally, perceived threats like data security concerns can significantly impact the decision to adopt SaaS, regardless of the supporting infrastructure (Benlian et al., 2011).

In conclusion, facilitating conditions play a crucial role in the adoption of SaaS among SMEs by providing the necessary support and infrastructure to use these technologies effectively. Ensuring that SMEs have access to technical support, training, and reliable IT infrastructure can significantly enhance their intention to adopt SaaS solutions. SaaS providers should focus on strengthening these facilitating conditions to encourage adoption and support the broader objective of technological advancement and efficiency within the SME sector.

5.6 Social Influence

The adoption of Software as a Service (SaaS) by small and medium-sized organisations (SMEs) is significantly influenced by social impact. The degree to which a person believes

that significant individuals think they ought to adopt a new system is known as social influence. Grasp how social norms and outside forces impact technology adoption decisions requires a grasp of this Unified Theory of Acceptance and Use of Technology (UTAUT) framework.

The study's findings, which include a p-value of 0.015, a t-statistic of 2.426, and a coefficient of 0.097, demonstrate that social influence has a favourable and substantial effect on the desire to use SaaS. This shows that SMEs are more inclined to use SaaS solutions if they believe that well-known people or institutions support them. This result aligns with other studies that emphasise the significance of social factors in the adoption of technology (Venkatesh et al., 2003).

For SMEs, social influence can come from various sources, including industry peers, professional networks, trade associations, and key stakeholders. When these influencers advocate for the adoption of SaaS, it can create a sense of urgency and legitimacy, prompting SMEs to consider and eventually adopt these solutions. This is particularly important in environments where SMEs rely heavily on external advice and benchmarking against industry standards (Benlian & Hess, 2011).

Moreover, positive testimonials and endorsements from trusted sources can alleviate concerns about the risks and uncertainties associated with adopting new technologies. SMEs may look to the success stories of similar organizations that have successfully implemented SaaS to build confidence in their own adoption decisions (Gupta et al., 2013). This peer validation can be a powerful motivator, reducing perceived barriers and highlighting the potential benefits of SaaS.

However, social influence must be considered alongside other factors such as performance expectancy, effort expectancy, facilitating conditions, and perceived threats. While social

influence can drive initial interest and consideration, the actual decision to adopt SaaS will depend on a comprehensive evaluation of its perceived benefits, ease of use, and the supporting infrastructure (Al-Ghofaili & Al-Mashari, 2014). Additionally, addressing perceived threats related to data security and privacy is crucial, as these concerns can override positive social influence (Benlian et al., 2011).

In conclusion, social influence plays a significant role in the adoption of SaaS among SMEs by leveraging the opinions and endorsements of influential others. SaaS providers can enhance adoption rates by engaging industry leaders and influencers to advocate for their solutions, sharing success stories, and fostering a community of users who can vouch for the benefits of SaaS. By combining social influence with efforts to demonstrate performance benefits, ease of use, and robust facilitating conditions, SaaS providers can create a compelling case for adoption within the SME sector.

5.7 Inferences from the IPMA Result

Practical insights into the ways in which different factors impact small and medium-sized organisations' (SMEs') adoption of Software as a Service (SaaS) can be obtained through the Importance-Performance Map Analysis (IPMA). The IPMA findings point out important areas that need to be addressed to improve SaaS solution uptake and utilisation.

One of the critical findings is the significant positive impact of effort expectancy on the intention to use SaaS, with a high-performance score indicating the importance of ease of use. This suggests that SaaS providers should prioritize user-friendly designs and interfaces to ensure that their solutions are easy to learn and operate. Simplifying the user experience can reduce the training and support costs for SMEs, making SaaS solutions more attractive and accessible to smaller businesses with limited IT resources (Gupta et al., 2013).

Facilitating conditions also have a positive impact, though to a lesser extent. This highlights the importance of providing robust organizational and technical support to ensure successful SaaS adoption. SMEs need reliable internet connectivity, comprehensive training programs, and accessible technical support to effectively use SaaS solutions. Providers should invest in creating a supportive infrastructure and offering comprehensive onboarding services to address these needs (Al-Ghofaili & Al-Mashari, 2014).

The IPMA results show that perceived threat has the most substantial negative impact on the intention to use SaaS. This underscores the critical need for SaaS providers to address security concerns. Implementing stringent security measures, obtaining relevant certifications, and transparently communicating these efforts to potential users can mitigate perceived risks and build trust. Given that SMEs often lack extensive cybersecurity expertise, clear and frequent communication about security practices is essential to alleviate fears and encourage adoption (Benlian & Hess, 2011).

Social influence positively affects SaaS adoption, indicating the role of endorsements and recommendations from industry peers and influencers. SaaS providers can leverage this by engaging with industry leaders and creating case studies and testimonials that highlight successful implementations. These efforts can enhance the credibility of SaaS solutions and influence the adoption decisions of SMEs, which often look to trusted sources for guidance (Benlian et al., 2011).

Performance expectancy also plays a positive role, though moderately, indicating that SMEs recognize the performance benefits of SaaS but may not see it as the most crucial factor. Providers should emphasize the performance advantages of their solutions, such as improved efficiency and scalability, to enhance their appeal. Demonstrating how SaaS can directly

contribute to business performance and competitive advantage can further motivate SMEs to adopt these technologies (Attaran et al., 2019).

Overall, the IPMA results suggest a balanced approach to enhancing SaaS adoption among SMEs. By focusing on improving user experience (effort expectancy), providing robust support (facilitating conditions), addressing security concerns (perceived threat), leveraging social proof (social influence), and highlighting performance benefits (performance expectancy), SaaS providers can effectively meet the needs of SMEs and encourage broader adoption of their solutions. These strategies align with existing research that emphasizes the importance of addressing both technical and perceptual barriers to technology adoption in the SME sector (Gupta et al., 2013; Benlian & Hess, 2011).

Chapter VI – Conclusion

6.1 Study Implications

1. Enhancing SaaS Adoption Strategies

- **User Experience and Interface Design**

The study highlights the critical role of effort expectancy in SaaS adoption among SMEs. This implies that SaaS providers should prioritize the development of intuitive and user-friendly interfaces. Simplifying the user experience can significantly reduce the training and support costs associated with new technology adoption. Emphasizing ease of use in the design and functionality of SaaS solutions can attract SMEs with limited IT resources, as supported by Gupta et al. (2013).

- **Organizational and Technical Support**

Facilitating conditions are shown to positively impact SaaS adoption, indicating the necessity for robust organizational and technical support. Providers should ensure that SMEs have access to reliable internet connectivity, comprehensive training programs, and responsive technical support. Investing in these areas can enhance the overall adoption experience and reduce barriers to entry (Al-Ghofaili & Al-Mashari, 2014).

2. Addressing Security Concerns

- **Mitigating Perceived Threats**

The study identifies perceived threat as a major deterrent to SaaS adoption. This underscores the importance of implementing robust security measures and obtaining relevant certifications. SaaS providers must transparently communicate their security practices to potential users, addressing concerns about data breaches and privacy. Building trust through

demonstrated security competence is crucial for overcoming barriers related to perceived threats (Benlian & Hess, 2011).

- **Communicating Security Measures**

Given the significant impact of perceived threats, it is vital for SaaS providers to engage in clear and continuous communication regarding their security protocols. Regular updates, transparent policies, and third-party security audits can help reassure SMEs about the safety of their data, thereby facilitating a higher rate of adoption.

3. Leveraging Social Influence

- **Industry Endorsements and Testimonials**

Social influence plays a positive role in SaaS adoption, suggesting that endorsements and recommendations from industry peers and influencers can significantly impact decision-making. SaaS providers should actively engage with industry leaders, create compelling case studies, and collect testimonials from satisfied customers. This strategy can enhance credibility and encourage SMEs to adopt SaaS solutions by leveraging social proof (Benlian et al., 2011).

- **Building a Community of Practice**

Creating a community of practice where current users can share their experiences and best practices can also amplify the positive effects of social influence. Online forums, webinars, and user groups can serve as platforms for SMEs to learn from each other and gain confidence in adopting SaaS solutions.

4. Highlighting Performance Benefits

- **Emphasizing Efficiency and Scalability**

Performance expectancy, while moderately influential, still plays a significant role in adoption decisions. SaaS providers should' emphasize the performance benefits of their solutions, such as improved efficiency, scalability, and the ability to streamline operations. Demonstrating these advantages can help SMEs see the tangible benefits of adopting SaaS technologies (Attaran et al., 2019).

- **Quantifying Business Impact**

Providing potential users with concrete data and case studies that quantify the business impact of SaaS solutions can further enhance their attractiveness. Metrics such as return on investment (ROI), productivity gains, and cost savings can be powerful motivators for adoption.

5. Comprehensive Adoption Framework

- **Balancing Multiple Factors**

In order to encourage SaaS adoption among SMEs, the report recommends a balanced strategy that takes into account expectations for effort, enabling circumstances, perceived threat, social influence, and performance. SaaS providers need to create all-encompassing strategies that take into account these different aspects in a holistic manner in order to effectively serve SMEs' demands and promote wider adoption.

Tailoring Solutions to SME Needs

Understanding the unique challenges and constraints faced by SMEs is essential. SaaS providers should tailor their solutions to meet these specific needs, offering flexible pricing

models, scalable services, and personalized support to ensure that their offerings are accessible and attractive to smaller enterprises.

The implications of this study provide a roadmap for SaaS providers aiming to increase adoption among SMEs. By enhancing user experience, providing robust support, addressing security concerns, leveraging social influence, and highlighting performance benefits, providers can create a compelling value proposition for their solutions. These strategies, supported by comprehensive and balanced adoption frameworks, can drive greater acceptance and use of SaaS technologies in the SME sector.

6.2 Study Recommendations

1. Improve User Experience

- **Focus on Intuitive Interface Design**

User-friendly and intuitive interface development should be a top priority for SaaS suppliers. Reducing training and support expenses is a major benefit of streamlining the user experience when implementing new technologies. Businesses with limited IT resources will be drawn to SaaS solutions that prioritise ease of use in both design and functionality.

- **Conduct Usability Testing**

Regular usability testing with actual users can help identify areas of improvement. Providers should gather feedback from SMEs to understand their pain points and make necessary adjustments to the interface and features.

2. Enhance Organizational and Technical Support

- **Provide Comprehensive Training Programs**

Offer comprehensive training programs that cover all aspects of the SaaS solution. This training should be easily accessible and cater to various learning styles, including online tutorials, webinars, and in-person sessions.

- **Ensure Reliable Technical Support**

Establish robust technical support channels, such as 24/7 helpdesks, live chat, and dedicated account managers. Quick and effective support can help SMEs resolve issues promptly and maintain their operations smoothly.

3. Address Security Concerns

- **Implement Robust Security Measures**

Invest in strong security protocols, such as multi-factor authentication, encryption, and recurring security audits. Getting pertinent certifications, like ISO 27001, can further reassure prospective customers about the security of the SaaS solution.

- **Communicate Security Practices Transparently**

Regularly communicate security practices and updates to users. Transparency in how data is protected and how potential security threats are managed can build trust and alleviate concerns about data breaches and privacy.

4. Leverage Social Influence

- **Engage Industry Leaders and Influencers**

Actively engage with industry leaders and influencers to advocate for SaaS solutions. Creating compelling case studies and collecting testimonials from satisfied customers can enhance credibility and encourage adoption.

- **Foster a Community of Practice**

Create online forums, webinars, and user groups where current users can share their experiences and best practices. This community can serve as a platform for SMEs to learn from each other and gain confidence in adopting SaaS solutions.

5. Emphasize Performance Benefits

- **Highlight Efficiency and Scalability**

Clearly communicate the performance benefits of SaaS solutions, such as improved efficiency, scalability, and the ability to streamline operations. Use real-world examples and data to demonstrate these advantages.

- **Provide Quantitative Evidence**

Offer potential users' concrete data and case studies that quantify the business impact of SaaS solutions. Metrics such as return on investment (ROI), productivity gains, and cost savings can be powerful motivators for adoption.

6. Develop a Comprehensive Adoption Framework

- **Balance Multiple Factors**

Provide comprehensive plans that consider performance, perceived threat, enabling conditions, effort expectations, and social impact. A detailed plan will encourage broader adoption and better meet the needs of SMEs.

- **Tailor Solutions to SME Needs**

Understand the unique challenges and constraints faced by SMEs. Tailor solutions to meet these specific needs, offering flexible pricing models, scalable services, and personalized support to ensure that offerings are accessible and attractive to smaller enterprises.

7. Continuous Improvement and Feedback

- **Regularly Update the SaaS Solution**

Stay ahead of the curve by regularly updating the SaaS solution to incorporate the latest technological advancements and user feedback. Continuous improvement can help maintain user satisfaction and loyalty.

- **Encourage User Feedback**

Create channels for users to provide feedback on their experience with the SaaS solution. Actively listening to and addressing user concerns and suggestions can lead to continuous improvement and innovation.

By implementing these recommendations and suggestions, SaaS providers can create a compelling value proposition that addresses the specific needs and concerns of SMEs. Enhancing user experience, providing robust support, addressing security concerns, leveraging social influence, and highlighting performance benefits will drive greater acceptance and use of SaaS technologies in the SME sector.

6.3 Conclusion

This study offers a thorough understanding of the variables affecting small and medium-sized businesses' (SMEs) adoption of Software as a Service (SaaS). The intents of SMEs to adopt SaaS solutions are significantly shaped by key drivers as effort expectancy, performance expectancy, perceived threat, facilitating conditions, and social influence. The results

highlight how crucial it is to have user-friendly design, strong organisational and technical support, efficient security measures, significant social influence, and transparent performance benefit communication.

To enhance SaaS adoption, providers should focus on creating intuitive interfaces and providing comprehensive training and technical support. Addressing security concerns through transparent communication and robust measures is crucial to building trust. Engaging industry leaders and influencers can amplify social influence, while highlighting the efficiency and scalability of SaaS solutions can demonstrate tangible benefits to potential users.

By adopting a balanced and holistic approach that addresses these various factors, SaaS providers can better meet the needs of SMEs and encourage broader adoption of their solutions. Tailoring offerings to the unique challenges and constraints of smaller enterprises, combined with continuous improvement based on user feedback, will further support the growth and success of SaaS technologies in the SME sector. Through these strategies, providers can drive technological advancement and operational efficiency, ultimately contributing to the competitiveness and resilience of SMEs in the modern business landscape.

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Annexure – I: Questionnaire

Demographics

1. Place
    a) Delhi
    b) Mumbai
    c) Kolkata
    d) Chennai
    e) Bangalore
    f) Hyderabad
2. Gender
    a) Male
    b) Female
3. Age
    a) 18-30 years
    b) 30-40 years
    c) 40-50 years
    d) Above 50 years
4. Firm Age
    a) Less than or equal to 25 years
    b) More than 25 years
5. Technology Adoption
    a) High
    b) Low
6. R&D Investment
    a) High

b) Low

Please rate the Below Statements

(From 1 – strongly disagree to 7 – strongly agree)

Construct	Indicator	1	2	3	4	5	6	7
Performance Expectancy *(Venkatesh et al., 2012)*	PE01 - I find SAAS useful in our line of work							
	PE02 - Using SAAS will increase efficiency on the job							
	PEO3 - Using SAAS will increase job productivity							
	PE04 – SAAS would improve the overall customer experience							
Effort Expectancy	EE01 – SAAS enable efficiency in business operation with minimal effort							

(Venkatesh et al., 2012)	EE02 - Handover and assistance from SAAS is smooth and understandable to carry on with the business operations and customer interaction							
	EE03 - I find SAAS easy to use							
Facilitating Condition *(Venkatesh et al., 2012)*	FC01 - I have the necessary resources to use/implement SAAS							
	FC02 – I/My team have the knowledge necessary to use/adopt SAAS							
	FC03 – My company/business unit facilitates the use of SAAS through various supporting initiatives							
	FC04 – I am aware of technological advancement in SAAS							
	FC05 – I have gone through training/facilitation on SAAS							

Social Influence *(Venkatesh et al., 2012)*	SI01 - Peers who influence my behavior think that I should use SAAS.							
	SI02 – My peers who use SAAS have a more positive attitude towards the use of SAAS in their job.							
	SI03 - People who are important to me think that I should use SAAS.							
Perceived Susceptibility *(Liang & Xue, 2009)*	PS01 – There is a high probability that SAAS can cause security breaches.							
	PSO2 – It is likely that the use of SAAS will lead to misinformation.							
	PSO3 – It is plausible that SAAS might fail to effectively service clients.							
	PS04 - Use of SAAS would risk the reputation of the business							

Perceived Severity *(Liang & Xue, 2009)*	PSE01 – If a security breach occurred through SAAS, the consequences would be severe.							
	PSE02 – Misinformation from SAAS could have serious repercussions for my job.							
	PSE03 – Failure of SAAS to effectively service clients can have grave implications for the company.							
Perceived Threat *(Liang & Xue, 2009)*	PT01 – I am worried that SAAS might increase the risk to my job security.							
	PT02 – I am concerned about the potential threats that SAAS can bring to our existing systems.							
	PT03 – I perceive the adoption of SAAS as a threat to the quality of service.							
Adoption Intention	IU01 – Given the opportunity, I plan to use SAAS in my tasks.							

(Venkatesh et al., 2012)	IU02 – I am willing to integrate SAAS into my existing workflow							
	IU03 – I could envision adopting SAAS as a long-term tool for my role.							