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Volume II

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27-29 OCTOBER 2023

“Empowering Change, Elevating Impacts”



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A background image of three women wearing hijabs and smiling. The woman on the left is wearing a dark blue hijab and a blue long-sleeved top. The woman in the middle is wearing a light-colored hijab and a blue long-sleeved top. The woman on the right is wearing a patterned hijab and a dark blue long-sleeved top. They are all smiling and looking towards the camera.

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PREFACE

As we reflect on the enriching experience of the INTERNATIONAL ACTION RESEARCH CONFERENCE (IARC) 2023, a key component of the AHIBS International Action Conference 2023 (AHIBS-ACT-2023), our attention now shifts to the publication of its proceedings. This compilation is not merely a record of the event; it stands as a beacon of scholarly excellence, capturing the essence of the innovative discussions and cutting-edge research that characterized the conference. The proceedings encapsulate a wealth of knowledge across a spectrum of disciplines, including Information Systems, Strategic Management, Accounting, Finance, Economics, Marketing, and Human Resources. They weave together the diverse threads of thought and research presented by our esteemed participants, offering a rich tapestry of insights that contribute profoundly to the academic discourse in business and economics.

We extend our deepest appreciation to all contributors, whose exemplary scholarship and insightful contributions have been instrumental in shaping these proceedings into a repository of wisdom. Their unwavering dedication to advancing their fields is not only commendable but also inspirational. As this publication marks the culmination of IARC 2023, it underscores the transformative power of academic collaboration and intellectual exchange. We trust that these proceedings will inspire continued research and dialogue, amplifying the impact of AHIBS-ACT-2023 within the global academic and industry communities.



INTRODUCTION

As we publish the proceedings of the AHIBS International Action Conference 2023 (AHIBS-ACT-2023), we reflect upon the vibrant and intellectually stimulating environment that defined the INTERNATIONAL ACTION RESEARCH CONFERENCE (IARC) 2023. This inaugural conference, a cornerstone of AHIBS' commitment to academic and research excellence, has not only met but exceeded our expectations, drawing an impressive array of local and international academicians, students, and industry experts. Their participation and contributions have been key in forging a successful platform for knowledge exchange and innovative exploration.

The proceedings presented here capture the essence of this collaborative spirit and intellectual rigor. Organized into four distinct themes, they reflect the diverse and multifaceted nature of business and economics research in the contemporary world:

- **Theme 1: Information System** – Here, we delve into the rapidly evolving world of technology and data, exploring its profound impact on business processes and decision-making.
- **Theme 2: Strategic Management** – This theme focuses on the critical aspects of leadership and organizational strategy, offering insights into navigating the complexities of the modern business landscape.
- **Theme 3: Accounting, Finance, Economics** – Addressing a broad spectrum of financial and economic topics, this section explores the latest trends and challenges in these crucial domains.
- **Theme 4: Marketing, Human Resources** – Concentrating on the human element of business, this part discusses innovative approaches in marketing and the vital role of human resources in shaping organizational success.

The richness of these proceedings lies not just in the range of topics covered but also in the depth and quality of the research presented. We are grateful to all contributors for their exceptional scholarship and insightful perspectives. Their dedication to advancing their respective fields is both admirable and inspiring. As we present this compilation, we are reminded of the transformative impact of academic collaboration and the exchange of ideas. We are confident that these proceedings will not only enrich the academic discourse but also inspire ongoing research and dialogue, thereby extending the legacy of AHIBS-ACT-2023 into the broader academic and industry communities globally.

A blurred background image showing an audience of people seated in rows, likely at a conference or seminar. The focus is on the foreground, where several individuals are visible, though they are out of focus. The overall tone is professional and academic.

Volume ii

Welcome to Volume II of our conference proceedings, where the collaboration of international and local researchers yields a rich mosaic of scholarly work. We build on the foundation laid in Volume I, presenting research that spans diverse disciplines and reflects the ongoing dialogue between academia and industry.

This volume features insights on the food and beverage industry's adaptability in the post-pandemic era, the transformative effects of flexible work arrangements on productivity, and the integration of corporate responsibility into strategic operations. It explores the evolution of leadership in education, the symbiosis of industry and vocational training, and the digital revolution in real estate marketing.

In addition, this volume pays special attention to the digital revolution sweeping across industries. The advent of virtual reality in Malaysia's real estate sector, with its immersive 360 photography and virtual tours, has redefined the essence of customer engagement and marketing efficacy. This digital leap forward is mirrored in the transformative impact of Robotic Process Automation on internal auditing processes—heralding a new era of precision, efficiency, and strategic insight. These studies not only shed light on the adaptive strategies in traditional sectors but also offer a glimpse into the profound changes induced by digitalization. They serve as a testament to the innovative spirit that thrives in the intersection of technology and human ingenuity.

As you turn these pages, we hope you find inspiration in the innovations and strategies that these works present, all contributing to a greater understanding of our world's complex business and educational landscapes.

DISRUPTING THE F&B LANDSCAPE: KEJAP FOOD'S DRIVE-THRU LOCAL DELIGHTS AND POST-PANDEMIC 4PS STRATEGIES

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ABSTRACT - The food and beverage (F&B) industry is experiencing a transformative shift driven by the growing demand for convenience, exemplified by the rise of drive-thru dining options. In Malaysia, this trend has been underscored by industry giants like McDonald's, where a significant portion of revenue is derived from drive-thru services. This paper introduces Kejap Food, a local disruptor in the F&B landscape, which specializes in offering drive-thru access to authentic local delights. This study delves into the strategic journey of Kejap Food, examining its adaptations and resilience during and after the COVID-19 pandemic. Kejap Food's success story serves as a compelling case study for businesses seeking to navigate evolving consumer preferences and challenges, emphasizing the importance of revising marketing strategies post-pandemic. Kejap Food's unwavering commitment to delivering local flavors in a fast-paced world has been central to its triumph in the Malaysian market. The paper employs the classical marketing mix, the 4Ps (Product, Price, Place, and Promotion), as a lens to analyze Kejap Food's strategies and their evolution. By exploring the company's innovative approaches, achievements, and growth in the face of adversity, this case study offers valuable insights into the dynamics of the F&B industry and its adaptability to changing consumer behaviors. Additionally, the study underscores the alignment of Kejap Food's journey with Sustainable Development Goals (SDGs), providing a holistic perspective on its impact to sustainable economic growth and responsible consumption within the community. This research not only sheds light on Kejap Food's journey but also offers a roadmap for businesses aiming to thrive in the evolving landscape of the F&B industry, emphasizing adaptability, innovation, and a commitment to preserving cultural heritage in the pursuit of success.

Keywords: *Drive-thru, F&B, Marketing Strategies, Marketing Mix 4Ps, Post-pandemic*

1. INTRODUCTION

The global landscape of the food and beverage industry has been witnessing a paradigm shift in recent years, driven by the ever-increasing demand for convenience. One prominent trend that has emerged is the surge in drive-thru dining options, providing customers with quick and hassle-free access to their

favorite meals [1]. This trend has not only transformed consumer preferences but also redefined the way restaurants operate and strategize their business models [2]. In Malaysia, the success of drive-thru restaurants has been exemplified by industry giants like McDonald's, where a substantial 50% of their revenue is generated through drive-thru services [3]. This impressive feat underscores the significant market potential and consumer enthusiasm for the convenience of drive-thru dining experiences.

Amidst this evolving landscape, Kejap Food emerges as a noteworthy player, offering a unique twist to the drive-thru concept. Kejap Food has successfully carved its niche by specializing in local delights served through the drive-thru model, catering to the palate of discerning consumers seeking a taste of homegrown flavors in a fast-paced world [4]. This paper delves into the story of Kejap Food's journey in establishing itself as a notable presence in the Malaysian food industry. It examines the strategic choices and adaptations that Kejap Food made, particularly in its marketing approach, during and after the COVID-19 pandemic. The paper highlights the importance of revising marketing strategies post-pandemic and how adaptability remains a core factor for businesses aiming to sustain and grow in an ever-changing environment.

Background of Kejap Food

Founded by Ms. Betty, Kejap Food represents more than just a dining establishment; it embodies a commitment to preserving and promoting the rich tapestry of local culinary traditions. Ms. Betty's vision led to the inception of Kejap Food as a dedicated drive-thru platform offering a wide array of local delights, from mouthwatering nasi lemak to delectable roti canai. The emphasis on preserving and celebrating Malaysia's culinary heritage while catering to modern, fast-paced lifestyles has been at the heart of Kejap Food's success story.

Next, this study critically explores Kejap Food's strategies, focusing on its adaptation of the classic marketing mix, the 4Ps (Product, Price, Place, and Promotion), in response to the challenges posed by the pandemic and its subsequent growth and achievements. This case study not only provides insights into Kejap Food's journey but also offers valuable lessons for businesses looking to navigate the changing tides of the food and beverage industry.

2. LITERATURE REVIEW

Drive-thru services have rapidly transitioned from being a convenience to becoming the "new normal" and quickly solidifying their position as the "now normal" [1][5]. This shift has brought about a profound transformation in the business landscape, particularly within the food and beverage industry, reshaping traditional norms and ushering in new paradigms [2].

As businesses adapt to this evolving landscape, the marketing mix, often referred to as the 4Ps (Product, Price, Place, and Promotion), has emerged as a pivotal tool for achieving success [6]. The adaptability of the 4Ps strategy has gained recognition as a means to bring significant impact to businesses, especially in the post-COVID-19 pandemic era [3]. This adaptability extends to the flexibility of marketing strategies,

which must evolve to align with changing consumer behaviors and market conditions. Swiftly responding to these dynamic shifts has become an essential hallmark of business agility and adaptability, transcending mere buzzwords to become prerequisites for survival and growth in today's ever-changing business environment [4].

Furthermore, research focusing on small and medium-sized enterprises (SMEs) in the food and beverage industry in Malaysia underscores the critical role played by the 4Ps (Product, Price, Place, and Promotion) in enhancing customer satisfaction [2][7]. These elements collectively account for a substantial portion, approximately 68.9%, of customer satisfaction, underscoring the significance of the 4Ps in nurturing customer contentment.

In summary, the literature highlights the rapid adoption of drive-thru services as the "new normal" and the pivotal role of adaptability, particularly within the 4Ps marketing mix, in navigating the changing landscape of the post-pandemic era. The ability to swiftly adjust marketing strategies to align with evolving consumer behaviors and market dynamics has become paramount for business success and growth in this dynamic environment.

3. KEJAP FOOD'S POST-PANDEMIC 4PS EVOLUTION

The pandemic significantly increased the popularity of drive-thru dining, presenting both challenges and opportunities for the food and beverage industry. As the world transitions to a post-pandemic era, sustaining this momentum requires strategic evolution. The table below illustrates Kejap Food's evolution in its 4Ps marketing mix post-pandemic, highlighting how the company adapted its Product, Price, Place, and Promotion strategies to continue thriving in the changing landscape.

Marketing Mix (4Ps)	During Pandemic	Post-Pandemic Strategy
Product	<ul style="list-style-type: none">• Diverse food and drink selections, including vegetarian options.	<ul style="list-style-type: none">• Refined and enhanced popular menu items for higher quality and customer appeal.• Launched 'Lekor Fries', transforming traditional 'keropok lekor' into a more convenient, drive-thru-friendly format.• Strategically phased out underperforming items like tomato rice to streamline the menu and focus on high-demand products.

Price	<ul style="list-style-type: none"> Aimed to offer affordable, convenient options for local delights. 	<ul style="list-style-type: none"> Developed and introduced new bundle deals and price promotions, targeting customer affordability and value perception. Adjusted pricing strategies to balance profitability with customer-centric affordability, ensuring competitive market positioning.
Place	<ul style="list-style-type: none"> Operated through drive-thru, in-line store, and clip-in kiosk. 	<ul style="list-style-type: none"> Recognized changing consumer preferences post-pandemic and expanded to include physical restaurant locations, offering a comfortable dining experience, notably in Petaling Jaya. Adapted the distribution strategy to balance between drive-thru efficiency and in-store dining experience.
Promotion	<ul style="list-style-type: none"> Focused on alliance promotions with food delivery platforms. 	<ul style="list-style-type: none"> Implemented a loyalty program to enhance customer retention and reward repeat customers. - Initiated and actively participated in ESG initiatives and CSR activities, strengthening brand image and community relations. Diversified promotional activities to include not just price-based incentives but also community engagement and environmental responsibility.

Source: [4]

4. KEJAP FOOD'S GROWTH OVER TWO YEARS: KEY MILESTONES ACHIEVED

Through the intensifying transformation of Kejab Food in the past significant two years, has realized meaningful milestones as i) partnership and expansion; ii) social media and sales success; iii) product development; iv) physical store performance; and v) crowdfunding achievement.

4.1 Partnership and Expansion

In the span of just two years following the pandemic, Kejap Food has made remarkable strides in expanding its reach and capabilities. A significant achievement in this regard is the establishment of partnerships with three major petrol stations. This strategic move has not only broadened Kejap Food's accessibility to customers but also enhanced its visibility in high-traffic areas. Furthermore, the company has impressively expanded from having no self-owned outlets to operating four, demonstrating a strong and growing presence in the food and beverage sector.

4.2 Social Media and Sales Success

Kejap Food's digital presence has seen a substantial boost, with its social media following skyrocketing to 14,000. This digital growth reflects the brand's increasing popularity and effective online engagement strategies. In terms of sales performance, Kejap Food achieved a top daily sales record of RM5,500 per outlet and a remarkable monthly high of RM112,000 per outlet. These figures are indicative of the strong customer demand and the effectiveness of Kejap Food's operational and marketing strategies.

4.3 Product Development

From its inception, Kejap Food has expanded its product range from zero to 46 amazing products. This diverse and ever-growing menu shows the brand's commitment to innovation and its ability to cater to a wide range of consumer preferences.

4.4 Physical Store Performance

The first physical store in Petaling Jaya has experienced double-digit growth, highlighting the success of Kejap Food's expansion into physical retail spaces. This growth is a testament to the brand's ability to adapt to different service models and the appeal of its product offerings in a traditional restaurant setting.

4.5 Crowdfunding Achievement

Another highlight of Kejap Food's journey is its crowdfunding success, where the company raised approximately RM5 million. This achievement not only reflects the high level of investor confidence in the brand but also provides significant capital that can fuel further expansion and innovation [8].

5. DISCUSSION AND RECOMMENDATIONS

Kejap Food's entrepreneurial journey over the past two years has shown the potential of the drive-thru model in Malaysia's food and beverage sector. The company's success in integrating local culinary delights into the F&B market has not only catered to the local palate but also showcased the feasibility of such offerings on a larger scale. The strategic revisions Kejap Food made to its marketing mix post-pandemic were instrumental in its ability to sustain operations and scale new heights. Its impressive growth – from expanding partnerships to establishing self-owned outlets, growing its social media following, achieving remarkable sales figures, and launching a diverse product range- emphasizes the efficacy of its adaptive strategies. Furthermore, the company's double-digit growth in its first physical store and its crowdfunded success signify strong market confidence and a robust business model.

This study sheds lights to market practitioners as well as academic researcher. In terms of the practical implication, Kejap Food's achievements provide a blueprint for the potential expansion of the drive-thru model beyond the F&B industry. There is an opportunity to explore this model in sectors such as pharmacy, grocery, and laundry services. By doing so, businesses can tap into the growing consumer demand for convenience and efficiency. In addition, the drive-thru model's expansion could significantly enhance consumer convenience, reducing the time and effort required for everyday tasks. This would be particularly beneficial in urban areas where time-saving solutions are increasingly valuable. Furthermore, there is a wealth of entrepreneurial opportunities for businesses willing to innovate within the drive-thru space. By observing Kejap Food's approach to market adaptation, new ventures can tailor their offerings to meet the evolving needs of the post-pandemic consumer.

Future researchers are encouraged to leverage from this study by examining consumer behavior in the post-pandemic to better understand the long-term viability and potential adaptations of the drive-thru model. Insights from such research could guide businesses in refining their service offerings and operational models.

6. CONCLUSION

Kejap Food should continue to monitor and revise its marketing mix to ensure sustainability and scalability. As consumer trends evolve, so should the company's strategies in product development, pricing, placement, and promotion. In conclusion, Kejap Food's experience underscores the importance of agility and customer-centricity in business. The drive-thru model, proven successful in the F&B industry, holds promise for replication across various sectors, suggesting a broader trend towards service models that prioritize convenience and innovation. Kejap Food's trajectory serves as an inspiring case study for future entrepreneurial ventures in Malaysia and beyond.

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https://www.linkedin.com/pulse/58-cagr-global-fast-food-quick-service-restaurant-market-wankhade/](https://www.linkedin.com/pulse/58-cagr-global-fast-food-quick-service-restaurant-market-wankhade/)
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https://www.mystartr.com/projects/KejapFood2](https://www.mystartr.com/projects/KejapFood2)

ENHANCING PRODUCTIVITY THROUGH FLEXIBILITY ACTION RESEARCH ON IMPLEMENTING FLEXIBLE WORKING ARRANGEMENTS AMONG PROPERTY VALUERS AT VPC ALLIANCE (JB) SDN BHD

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ABSTRACT - Exploring the intersection of work-life balance and modern workplace dynamics, this study investigates the impact of flexible working arrangements on employee productivity at VPC Alliance (JB) Sdn Bhd in Johor Bahru, Johor. Challenging traditional notions that equate longer hours with greater job satisfaction, this research focuses on property valuers, a group historically bound by conventional work schedules. Utilizing a mixed-method approach, the study demonstrates the benefits of flexible working models in enhancing job productivity, performance, and employee motivation. Key findings from two intervention cycles indicate that flexible working not only improves individual performance but also contributes to overall organizational efficiency. This research offers valuable insights into the transformative potential of flexible work arrangements in today's evolving work environments.

Keywords: *Flexible Working Arrangements, Employee Productivity, Property Valuation, Work-Life Balance, Organizational Efficiency*

1.0 INTRODUCTION

In the current corporate landscape, Flexible Working Arrangements (FWA) have emerged as a vital tool for enhancing work-life balance and employee satisfaction. Recognized for their positive impact on productivity and employee retention across diverse demographics, FWAs offer flexibility in work hours, days, locations, and styles. This research focuses on VPC Alliance (JB) Sdn Bhd (VPC JB), a leading Malaysian property consultancy firm. Property valuers at VPC JB, whose roles entail site inspections and report generation, present a unique opportunity for implementing FWA due to the flexible nature of their work.

VPC JB, part of the larger VPC Malaysia network, is an established entity in property valuation and consultation. Licensed for various property-related services, it strives to provide top-tier services in alignment with its corporate mission. However, an internal survey revealed potential for improvement in

valuer productivity and performance. Employing the Fishbone diagram for root cause analysis, this study identifies key factors influencing productivity, such as skills, motivation, and working conditions.

This research aims to explore the effects of FWA on valuer productivity and performance at VPC JB. Through qualitative and quantitative methods, including focus groups, interviews, and surveys, the study addresses three critical research questions: the differences in productivity between office-based and flexible working, potential interventions to enhance productivity, and the impact of these interventions. The objectives include identifying productivity challenges, designing effective solutions, and evaluating intervention outcomes. The researcher's role is pivotal, ensuring integrity and ethical conduct throughout the study.

The significance of this research lies in its potential to enhance valuer productivity through FWA, thereby contributing to VPC JB's competitiveness in the market. By offering insights into the benefits of FWA and its role in sustainable corporate strategy, this study aims to provide a roadmap for improving employee engagement and performance in the property valuation sector.

2.0 LITERATURE REVIEW

This section delves into the theoretical underpinnings and previous studies pertinent to flexible working arrangements (FWA), employee performance, and work-life balance, highlighting their impact on productivity within the property valuation industry.

2.1 Underpinning Theory and Models

Two foundational theories anchor this research: Maslow's Hierarchy of Needs and the Job Demands-Resources (JD-R) Model. Maslow's theory, with its emphasis on physical, social, security, and self-actualization needs, underlines the importance of flexible working arrangements in meeting these diverse employee needs, ultimately leading to enhanced job satisfaction and organizational performance. The JD-R Model, distinguishing between job demands and resources, provides a framework for understanding how flexible working arrangements can reduce job strain and promote positive work engagement and performance.

2.2 Flexible Working Arrangements

The nature of property valuation, which includes tasks like site inspections and report writing, lends itself to flexible working styles. Studies have shown that FWA, encompassing flexible hours, locations, and compressed work weeks, can lead to greater efficiency and productivity by allowing property valuers to optimize their work schedules [3][4].

2.3 Employee Performance and Happiness at Work

Employee performance is closely linked to work satisfaction, with flexibility in the workplace playing a significant role in enhancing both. Happy employees tend to be more motivated and productive, contributing positively to organizational goals [1][2]. The implementation of FWA can foster a balance between work and personal life, leading to increased job satisfaction and performance.

2.4 Contemporary Research

Recent studies have reinforced the positive correlation between FWA and employee productivity, with an emphasis on the impact of such arrangements across different genders and age groups in various industries. However, there is a noted gap in research specific to the property valuation industry in Malaysia, which this study aims to address [5][6].

2.5 Proposed Interventions

Following the identification of key issues and root cause analysis, this study proposes two intervention cycles to address productivity challenges in property valuation.

2.5.1 Cycle One Intervention

Cycle One introduces FWAs, allowing valuers to choose their work location and use internal communication tools. The intervention aims to enhance productivity and employee satisfaction.

2.5.2 Cycle Two Intervention

Building on Cycle One's findings, Cycle Two advances the FWA concept, offering valuers increased flexibility in work arrangements and introducing a new internal communication platform for enhanced coordination and productivity.

Each cycle involves distinct stages – Input, Transformation, and Output. Input stages involve qualitative interviews and surveys to identify current challenges and set productivity benchmarks. The transformation phase implements FWAs, monitored over several months to observe changes in productivity. The output stage evaluates the impact of FWAs on productivity through post-intervention surveys and analysis of company performance data.

3.0 RESEARCH METHODOLOGY

This section outlines the research methodology adopted for studying the impact of flexible working arrangements (FWA) on employee productivity at VPC Alliance (JB) Sdn Bhd. A mixed-method approach, integrating both qualitative and quantitative methods, was employed to provide a comprehensive understanding of the effects of FWA.

Aspect	Details
Research Approach	Mixed method (Qualitative and Quantitative)
Research Philosophy	Pragmatism
Research Design	Longitudinal study over one year, integrating interviews and surveys
Time Horizon	Data collected before and after the intervention
Units of Analysis	Valuation Manager (Interviews), Valuation Team (Surveys)
Sampling Method	Purposive sampling

Research Instruments	Interviews with Valuation Manager; Surveys with Valuation Team
Data Analysis Techniques	Thematic Analysis for qualitative data; SPSS for quantitative data, including Wilcoxon Signed Rank Test
Validity and Reliability	Content Validity, Triangulation, Expert Opinion Analysis, Cronbach's Alpha for reliability
Degree of Involvement	Moderate; involves problem identification, data collection, and intervention evaluation

The methodology employed in this research was meticulously designed to address the study's objectives. The mixed-method approach, encompassing both qualitative and quantitative elements, enabled a holistic examination of the effects of FWA on productivity. This approach not only provided depth and breadth in understanding the phenomenon but also ensured the robustness and reliability of the findings. The subsequent chapters will delve into the data analysis, discussing how these methods contributed to insightful results.

4.0 RESULTS AND DISCUSSION

This chapter presents the findings and analysis of the research, employing mixed methods that integrate qualitative and quantitative approaches. The analysis utilized SPSS for quantitative data and thematic analysis for qualitative data. Surveys and interviews were conducted pre- and post-intervention, and the results were supplemented with valuer monthly performance data from VPC JB. The chapter culminates in testing the effectiveness of the intervention using the Wilcoxon test and descriptive analysis for demographic details.

Aspect	Pre-Intervention	Post-Intervention	Observations
Qualitative Analysis	Interviews with Valuation Manager; identification of key issues	Follow-up interviews; evaluation of intervention effectiveness	Improved understanding of flexible working concepts; positive feedback on intervention
Quantitative Analysis	Surveys on flexible working, productivity, motivation	Repeat surveys post-intervention	Significant improvement in productivity and motivation post-intervention
Supporting Data	Monthly performance records pre-intervention	Monthly performance records post-intervention	Notable increase in valuer productivity post-intervention
Statistical Tests	Analysis of pre-intervention data	Wilcoxon Signed Rank Test for comparing pre- and post-intervention	Intervention significantly improved key metrics

The findings indicate a positive impact of the flexible working arrangements on the productivity and motivation of valuers at VPC JB. Both qualitative and quantitative analyses reveal significant

improvements post-intervention. The thematic analysis of interviews highlights a better understanding and acceptance of flexible working concepts among employees, which correlates with the quantitative data showing enhanced productivity and motivation. The supportive data from VPC JB further corroborates these findings, demonstrating a tangible increase in valuer productivity. Overall, the intervention effectively addresses the initial issues identified, suggesting that flexible working arrangements can significantly benefit employee productivity and motivation.

5.0 CONCLUSION

This research at VPC JB provides valuable insights into the effectiveness of flexible working arrangements in enhancing employee productivity, performance, and motivation. Throughout this study, we have delved into various aspects of how flexible working models impact employee dynamics within a valuation company, offering a comprehensive look at both the practical and theoretical implications of our findings.

5.1 Impact to Practice

Our study revealed significant improvements in employee productivity and motivation due to the introduction of flexible working arrangements. This approach has proven to be an effective response to the challenges faced by employees, particularly in terms of managing work-life balance and increasing efficiency.

5.2 Key Research Outcomes

We began by identifying key challenges that affected productivity, such as extensive travel and inconsistent reward systems. Implementing flexible working arrangements addressed these issues effectively, leading to a notable increase in employee motivation and work output. The interventions included enhanced schedule flexibility, use of digital communication tools, and an introduction of more adaptable work environments. These measures showed positive growth in employee performance, highlighting the benefits of flexible working arrangements.

5.3 Theoretical and Practical Contributions

Our findings contribute to both the theoretical understanding and practical application of flexible working arrangements. They demonstrate how such strategies can be aligned with organizational objectives to enhance employee satisfaction and efficiency.

5.4 Limitations and Future Directions

The study's scope was limited to a specific sector and a small participant group, which may not fully represent broader workforce trends. Future research should explore these arrangements in various industries and with larger sample sizes. Additionally, examining the impact of reward systems on employee productivity will provide a more comprehensive understanding of workforce dynamics.

In conclusion, the implementation of flexible working arrangements at VPC JB has been a resounding success, leading to improvements in employee satisfaction, productivity, and overall work performance. This study highlights the potential of flexible work strategies in transforming traditional workplace models, offering significant benefits for both employees and organizations. Moving forward, embracing such adaptable work arrangements could be a key factor in fostering a more dynamic, satisfied, and productive workforce.

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REVOLUTIONIZING WORKFORCE DEVELOPMENT: STRATEGIC TRAINING INTERVENTIONS FOR EMPLOYEE EXCELLENCE AND SATISFACTION IN COMPANY X

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ABSTRACT - The present study centers around an action research project carried out at Company X, with the main aim of enhancing employee engagement and retention, both of which are crucial determinants of organizational success. The study sought to ascertain the underlying factors contributing to the decline in employee engagement and retention rates, and subsequently create a targeted solution to address these challenges. To diagnose the problem, a qualitative method was used, involving in-depth interviews and thematic analysis. This step was crucial in comprehending employee viewpoints and pinpointing significant factors impacting their level of involvement and contentment in their work. After completing the diagnostic phase, the study implemented precise interventions that concentrated on specialized training and development programs. The efficacy of the intervention was subsequently evaluated quantitatively by pre- and post-intervention surveys. This methodology facilitated a precise assessment of the intervention influence on levels of employee engagement. The findings yielded valuable information about the factors influencing employee loyalty and morale, indicating that the customized interventions resulted in a significant enhancement in engagement. Moreover, the quantitative data substantiated the efficacy of the adopted tactics. This study adds to the ongoing discussion on corporate strategies aimed at enhancing employee engagement and retention, emphasizing the significance of utilizing a mixed-approaches approach. Qualitative methods are employed to identify problems, while quantitative methods are used to measure the effectiveness of interventions. The findings have practical consequences for Company X and other comparable companies.

Keywords: *Attrition Rates, Talent Retention, Human Recourse Management, Employee Engagement, Organizational Performance*

1. INTRODUCTION

Amidst the dynamic and intricate manufacturing industry, which has been further complicated by the COVID-19 pandemic, firms encounter unparalleled difficulties in managing their personnel. Company X, a renowned participant in this industry, is no different. The company is currently facing substantial talent management and retention issues due to its staff increasing from 100 to 200 employees because of expansion and remote work arrangements. This study examines Company X's endeavours to attain a target attrition rate of 8%, which represents a 10% decrease compared to the previous year. Talent retention is a

critical factor in organisational success, particularly in dynamic and transformative times [1]. Thus, this study focuses on investigating effective techniques to enhance employee engagement and happiness, which are recognised as crucial factors in retaining workers and improving organisational success. The swift growth and changing work dynamics of Company X may have compromised employee engagement and happiness, hence leading to a higher turnover rate. Company X, a leader in the manufacturing industry, specialises in packaging solutions and has witnessed significant expansion. However, it has challenges in upholding optimal levels of employee engagement, happiness, and retention. The objective of this study is to evaluate and improve the current Human Resources (HR) practises at Company X, focusing on the weaknesses that lead to disengagement and high rates of employee turnover. The company's ambitious expansion ambitions are heavily dependent on effectively managing an increased staff. However, this task is made more difficult by ineffective management practices, restricted professional development opportunities, and inadequate compensation. Therefore, it is crucial to address these difficulties promptly and effectively with appropriate solutions.

Table 1. Research Question and Objective

Research Questions	Research Objectives
RQ1. What are the key elements influencing Company X current levels of employee satisfaction and engagement?	RO1. To identify the key factors influencing Company X existing employee engagement and satisfaction levels.
RQ2. How can employee satisfaction and engagement in Company X be enhanced through suitable interventions?	RO2. To determine and assess the effectiveness of potential interventions that can enhance employee satisfaction and engagement in Company X.
RQ3. What strategies can be implemented to increase engagement activities and satisfaction to reduce talent retention?	RO3. To propose and evaluate strategies aimed at increasing engagement activities and satisfaction

2. LITERATURE REVIEW

Recent studies in human resource management (HRM) emphasise the significant role of training and development in boosting employee engagement, which is closely linked to enhanced organisational performance and retention. Practices in training and development are thought to help employees feel more engaged in their workplace [2]. Key findings include:

- i. Effective Training Programs:** Research by Bhakuni et al [3] shows that well-designed training programmes are key to elevating employee engagement levels, with a majority of employees demonstrating heightened engagement post-training.
- ii. Role in Employee Retention:** Studies by Rumman et al. [4] and Franzoni et al. [5] highlight the relationship between perceived training opportunities and employee retention, suggesting that training and development are crucial mediators in employees' decisions to remain with an organization.
- iii. Impact on Performance:** The positive correlation between training, development, and employee

performance is reinforced by findings in the banking sector by Siddiqui et al. [6] and Endah Nuryadin [7], indicating that strategic training directly influences employee productivity.

iv. Holistic Development Approach: the research highlights the need for a comprehensive approach to training that includes aspects like employee empowerment and career advancement opportunities, which are important to boosting both engagement and performance.

Research in the field of literature confirms that training and development play a crucial role in enhancing employee engagement, contentment, and overall organizational success. These observations serve as the foundation for developing focused strategies to improve employee engagement in Company X.

2.1 Intervention Plan

This intervention plan for Company X is inspired by Kurt Lewin's change model and focuses on developing bespoke Training and Development programs. These programs aim to address knowledge gaps and enhance employee engagement and satisfaction [3].

Key Components:

- i. **Tailored Training Programs:** Customized to Company X needs, these programs will enhance both technical and soft skills, fostering employee commitment and adaptability.
- ii. **Lewin's Change Model Integration:**
 - **Unfreezing:** Initiating awareness about the necessity for new skills and preparing employees for upcoming changes.
 - **Change:** Implementing the training with a focus on active learning and practical application, supported by feedback mechanisms.
 - **Refreezing:** Solidifying new skills through continuous learning opportunities and integrating them into daily work practices.

The plan is designed to effectively blend skill development with organizational objectives, ensuring a lasting positive impact on employee engagement and company culture.



3.0 RESEARCH METHODOLOGY

This study adopted a mixed-methods approach, combining qualitative and quantitative analyses to address employee engagement and retention issues at Company X.

Table 2. Research Design

Qualitative Analysis	Quantitative Method
The qualitative phase involved semi-structured interviews with executives and HR managers to diagnose the root causes of the challenges. Open-ended questions were crafted to elicit detailed insights into staff experiences, attitudes, and viewpoints. Face-to-face interviews were prioritized for richer data, including non-verbal cues. A pilot test was conducted to refine the interview questions, ensuring their relevance and precision.	The quantitative component utilized a detailed questionnaire distributed to 20 respondents. It comprised three parts: Personal Training Development Plans, Employee Involvement, and Job Satisfaction and Commitment, each based on contemporary HRM research. Questions used a 5-point Likert scale for nuanced understanding of respondent perspectives, and demographic questions allowed for subgroup analysis. The questionnaire was administered pre- and during intervention sessions to gauge the impact of the initiatives.

4.0 RESULTS AND DISCUSSION

4.1 Quantitative Analysis

Pre- and post-intervention survey questionnaires were distributed at Company X to conduct quantitative analysis for this study. The data analysis was conducted using the SPSS software to ensure a comprehensive examination of the collected data. Table 3 presents a concise overview of the quantitative data collected in this study, outlining the key findings and insights obtained using SPSS.

Table 3. Summary of the Quantitative Analysis

Analysis	Findings
Pilot Test	Pilot test with Company X respondents to refine survey questions
Reliability Test	Cronbach's Alpha established questionnaire reliability (Alpha = 0.729)
Descriptive Statistics Analysis	Provided foundational insights into data using descriptive statistics
Demographic Analysis	Analyzed gender, age, and education distribution of respondents
Missing Data Analysis	Confirmed no missing values in survey responses

Outlier Analysis	Verified no significant outliers in data (Z value within ± 4)
Normality Test	Skewness and Kurtosis indicated normal distributions of key variables
Non-parametric Analysis (Wilcoxon Test)	Statistically significant differences found in key variables post-intervention

4.2 Results

A key focus of our analysis was to ensure the questionnaire's reliability. This was accomplished by verifying its consistency using Cronbach's alpha coefficient. The computed value of 0.729, achieved using SPSS on 21 questions, suggests a high level of internal consistency, as illustrated in Table 4. Implementing such a measure is essential to ensuring the validity of our findings, as it guarantees the dependability of the replies collected via the questionnaire.

Table 4. Reliability Statistics

Cronbach's Alpha	N of Items
0.729	21

Table 5 presents the respondents from Company X. Out of the 20 employees who participated in the study, 30% were male and 70% were female. This indicates a higher representation of female employees in the sample. The valid percent column confirms these percentages, and the cumulative percent column shows the running total of the percentages. It reaches 100% at the end of the table, indicating that all replies were included. The visual representation in the table further elucidates this age distribution, accentuating the preponderance of the 36–45 age cohort. The educational qualifications of the respondents, as tabulated in the table, shed light on the academic landscape of Company X employees.

Table 5. Demographic Analysis

	Frequency	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Male	6	30	30	30
Female	14	70	70	100
25 years and below	1	5.0	5.0	5.0
26 - 35 years old	8	40.0	40.0	45.0
36 - 45 years old	10	50.0	50.0	95.0
46 - 55 years old	1	5.0	5.0	100.0
High school	5	25.0	25.0	25.0
Diploma	3	15.0	15.0	40.0
Bachelors	12	60.0	60.0	100.0
Total	20	100.0	100.0	

This study utilised the Wilcoxon test, suitable for small sample sizes like our 20 participants, to analyse pre- and post-intervention data without assuming normal distribution. The test revealed significant improvements across key variables. Descriptive statistics showed an increase in mean scores for Personal Development Plan, PDP (from 3.8750 to 4.3083), Employee Engagement, EE (from 3.4318 to 3.8864), and Job Satisfaction and Retention, JSR (from 3.3643 to 4.2000) post-intervention, as illustrated in Table 6. These increases, along with consistent standard deviations, indicate a uniform positive impact of the intervention on participants. The varied standard deviations post-intervention suggests diverse individual experiences. These findings demonstrate the intervention's effectiveness in enhancing employee satisfaction, engagement, and retention at Company X, aligning with the study's objectives, and laying the groundwork for future strategies to address talent retention challenges.

Table 6. Descriptive Statistics

Variables	N	Mean	Std. Deviation	Minimum	Maximum
PDP (V1) _Pre	20	3.8750	.43217	3.00	4.83
EE (V2) _Pre	20	3.4318	.37642	2.73	4.36
JSR (V3) _Pre	20	3.3643	.33893	2.71	4.00
PDP (V1) _Post	20	4.3083	.43352	3.67	5.00
EE (V2) _Post	20	3.8864	.39448	3.18	4.73
JSR (V3) _Post	20	4.2000	.70989	2.00	5.00

The initial intervention in this study at Company X was around the creation of targeted training and development initiatives, acknowledging the significance of ongoing education in bolstering employee enthusiasm and involvement. The statistical analysis demonstrated a substantial and beneficial effect of this intervention on PDP, with a p-value below 0.05, confirming its efficacy. This is consistent with the findings of Ngozi et al. [8], which highlight the importance of creative training in enhancing employee retention and organizational performance. The intervention exhibited a favorable impact, as indicated by the notable disparities between the scores before and after the intervention, together with an elevation in the average scores. This corroborates the theoretical frameworks that emphasize the significance of acknowledgment in meeting employees' inherent needs, therefore enhancing engagement and satisfaction. In addition, the intervention resulted in a significant rise in JSR after the intervention. The variety of responses highlights the intricate nature of job satisfaction and the need for a comprehensive approach to tackle different elements that contribute to it. The study's results demonstrate a robust association between employee retention and engagement, which has a substantial impact on organizational success. Training and development programs improve employee performance in both general organizational activities and specific job-related duties, equipping people for present and future responsibilities. The effectiveness of the interventions in tackling issues related to employee engagement and talent retention is clearly demonstrated, making a significant contribution to the overall discussion on employee satisfaction and providing helpful methods for firms seeking to enhance talent retention. Nevertheless, the study admits its shortcomings, such as the small sample size of only 20 individuals, which may not accurately reflect the entire workforce of Company X. To further validate and expand upon these findings, it is recommended to conduct future study using a bigger sample size and a longitudinal strategy.

Table 7. Summary of Wilcoxon Test Results

Variables	Condition	Findings	Results
PDP (V1)	P-value (0.005) < Alpha-value (0.05)	Calculation value (18) < (N = 20, Critical value = 52)	Significant
EE (V2)	P-value (0.001) < Alpha-value (0.05)	Calculation value (9) < (N = 20, Critical value = 52)	Significant
JSR (V3)	P-value (0.001) < Alpha-value (0.05)	Calculation value (13.5) < (N = 20, Critical value = 52)	Significant

5.0 CONCLUSION

The study conducted at Company X has utilized a mixed-methods approach to provide valuable insights into the barriers and effective strategies for enhancing employee engagement and retention in the manufacturing sector. The quantitative analysis confirmed the efficacy of targeted training and development programs, while the qualitative research yielded remarkable insights into the underlying reasons for employee disengagement and dissatisfaction. The key findings emphasize the critical role of tailored training programs, based on Lewin's change model, in enhancing employee satisfaction and involvement. These interventions have a substantial positive impact on employee engagement, job satisfaction, retention, and personal training development. Their validity was verified by rigorous quantitative approaches, including reliability tests and descriptive statistics. This research contributes to the broader discourse in human resource management, namely in the domains of employee engagement and talent retention. The results emphasize the need of aligning training programs with the specific needs of both the firm and its employees. This study offers valuable recommendations for Company X and other organizations facing similar challenges.

5.1 Future Recommendations

Although this study only examined training and development programs, future research could investigate the effects of improving the reward system on employee engagement and retention. Examining the impact of several sorts of rewards - including financial, non-financial, inherent, and external - on employee motivation and loyalty may offer a more comprehensive understanding of employee contentment. Future research could investigate the effectiveness of different incentive mechanisms, including performance-based bonuses, recognition initiatives, and career progression prospects, in cultivating a staff that is more motivated and dedicated. Overall, the action research project conducted at Company X has established a basis for further investigation into efficient human resources techniques. To enhance their comprehension of the factors that influence employee engagement and retention, firms should include an examination of reward systems in their future studies. This is essential for achieving success in a rapidly changing corporate environment.

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ENHANCING ENGAGEMENT AND FOSTERING GROWTH: THE IMPACT OF CSR-ESG INTEGRATION AT KITZ VALVE & ACTUATION (MALAYSIA) SDN BHD

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ABSTRACT - This paper study the integration of Corporate Social Responsibility (CSR) with Environmental, Social, and Governance (ESG) concerns at Kitz Valve & Actuation (Malaysia) Sdn Bhd (KVM). It examines how KVM's strategic CSR initiatives contribute to operational success, emphasizing the Triple Bottom Line Theory and alignment with the United Nations' Sustainable Development Goals. Utilizing a mixed-method research approach, the study highlights KVM's transformation through CSR, evidencing improvements in environmental performance, community relations, and corporate reputation. The findings underscore CSR as a strategic necessity in the valve industry, particularly in response to global challenges like climate change and the COVID-19 pandemic. This study contributes to understanding CSR's role in sustainable competitive advantage and offers insights for businesses seeking to balance profitability with social responsibility.

Keywords: *Corporate Social Responsibility (CSR), Environmental, Social, and Governance (ESG), Sustainable Competitive Advantage, Triple Bottom Line Theory, Strategic Business Implementation*

1.0 INTRODUCTION

In an era where corporate social responsibility (CSR) transcends mere philanthropy to embed itself deeply in the core operational strategies of organizations, Kitz Valve & Actuation (Malaysia) Sdn Bhd (KVM) stands as a testament to this evolution. The integration of CSR into the broader spectrum of Environmental, Social, and Governance (ESG) concerns is not just a strategic move for KVM but a reflection of a burgeoning global consciousness that aligns business success with societal and environmental stewardship. This research paper delves into the transformative journey of KVM, illustrating how CSR, when effectively aligned with ESG objectives, can enhance organizational productivity, profitability, and ethical footprint.

The imperative for businesses to embrace a "Triple-Bottom-Line-Approach" - balancing economic, environmental, and social imperatives - has never been more pressing. KVM, a Japanese-owned entity established in Johor Bahru, Johor, Malaysia, navigates this complex terrain, demonstrating a commitment to sustainable business practices while meeting the demands of stakeholders. This study reveals how

KVM's strategic CSR initiatives, transcending traditional corporate philanthropy, contribute to alleviating poverty, strengthening brand reputation, and fostering a culture of ethical responsibility and social impact.

In an analytical exploration of KVM's journey, this research illuminates the multifaceted benefits of CSR in business. From cost savings and environmental benefits achieved through efficient resource utilization to competitive advantages gained through ethical business practices, KVM's experience serves as a case study in successful CSR implementation. The study is anchored in the context of KVM's operation in Malaysia - a nation where CSR is increasingly recognized as a crucial component of business strategy.

This paper critically examines KVM's approach to CSR, employing PESTEL analysis to contextualize the company's strategies within Malaysia's dynamic socio-economic landscape. Furthermore, it leverages internal and SWOT analyses to unpack the complexities and challenges faced by KVM in embedding CSR into its core business model. The research pivots on understanding how CSR, when intertwined with a company's fabric, can enhance internal stakeholder engagement, address environmental concerns, and fortify the company's positioning in the competitive market.

In presenting this study, the paper aims to offer insights into the transformative impact of CSR on a company's environmental, social, and corporate domains. It aspires to contribute to both theoretical and practical understanding of CSR implementation, serving as a valuable resource for businesses seeking to navigate the intricate balance of profitability and social responsibility.

2.0 LITERATURE REVIEW

Exploring the role of Corporate Social Responsibility (CSR) in fostering sustainable competitive advantage, this chapter delves into CSR's strategic importance in addressing global challenges, including climate change and the COVID-19 pandemic's impact on the valve industry. It investigates various CSR theoretical models, laying the groundwork for an action research plan that aims to bolster environmental and social engagement within organizations.

2.1 Industry Issue Discussion

The valve industry confronts unique challenges in the context of global climate change and the COVID-19 pandemic. CSR, in this scenario, extends beyond traditional business practices, becoming a strategic necessity that addresses environmental concerns and broader socio-economic issues. The industry's response through energy-efficient practices exemplifies CSR's crucial role in sustainable business models [1][2].

2.2 Underpinning Theory and Models

Key CSR theories such as Carroll's CSR Theory, the Triple Bottom Line Theory, and the Stakeholder Theory are explored for their multi-dimensional approach to CSR. These theories emphasize the balance between economic viability and social and environmental responsibility. The evolution of CSR from philanthropic origins to its current role as a strategic business element is discussed, highlighting its importance in sustainable competitive advantage [3][4].

2.3 CSR Evolution and Contemporary Practices

CSR today aligns with the United Nations' Sustainable Development Goals, incorporating Diversity, Equity, and Inclusion initiatives. This evolution represents a holistic approach to CSR, where environmental sustainability, social equity, and economic growth are seen as interconnected elements of business strategy [5][6][7].

2.4 The Triple Bottom Line Theory

The Triple Bottom Line Theory, advocating for a balance of people, planet, and profit in corporate decision-making, guides the action research plan for Kitz Valve & Actuation (Malaysia) Sdn Bhd. This theory encourages sustainable business practices that respect human, environmental, and economic capital.

2.5 Proposed Interventions

The intervention plan for CSR implementation consists of two cycles. The first cycle identifies challenges and opportunities in CSR for sustainable competitive advantage. The second cycle extends these efforts, focusing on greater environmental and social activity involvement, particularly in mitigating local climate-related challenges.

3.0 RESEARCH METHODOLOGY

This section outlines the research methodology for the study on CSR implementation at Kitz Valve & Actuation (Malaysia) Sdn Bhd (KVM). The methodology combines qualitative and quantitative approaches, allowing for a comprehensive understanding of CSR's impact. The approach is pragmatic, considering both social interactions and individual experiences. The data collection methods include focus group interviews and surveys, designed to evaluate the effectiveness of CSR interventions at KVM.

The research design follows a mixed-method approach, initially identifying problems and then developing solutions through diagnosis. The intervention's effectiveness is assessed pre- and post-implementation. The longitudinal aspect of the study ensures a dynamic understanding of CSR impacts over time.

Aspect	Details
Research Approach	Mixed Methods (Qualitative and Quantitative)
Philosophy	Pragmatism - Balancing qualitative and quantitative strengths
Design	Focus group interviews and pre/post-intervention surveys
Time Horizon	Longitudinal - Data collection at different intervals
Unit of Analysis	KVM Director, Charitable Organizations, Managers, Executives, Non-Executives
Degree of Involvement	High-level qualitative interviews, medium-level quantitative surveys
Sampling Method	Purposive Sampling - Focus on CSR-involved individuals
Research Instruments	Interviews, Surveys, Supporting Documents
Validity and Reliability	Expert opinions, Cronbach's Alpha for questionnaire reliability
Data Collection	Interviews for qualitative data, Surveys for quantitative data
Data Analysis	Thematic Analysis (Qualitative), Descriptive Analysis using SPSS (Quantitative)

This methodology enables a detailed analysis of CSR activities and their impact on KVM. It emphasizes the importance of a balanced methodological approach, capturing both the breadth and depth of CSR's influence within the organization. The study's design ensures that both immediate and long-term effects of CSR initiatives are evaluated, providing valuable insights into the strategic implementation of CSR activities.

4.0 DATA ANALYSIS AND DISCUSSION

This chapter presents the findings and analysis of the research, employing mixed methods that integrate qualitative and quantitative approaches. The analysis utilized SPSS for quantitative data and thematic analysis for qualitative data. Surveys and interviews were conducted pre- and post-intervention, and the results were supplemented with valuer monthly performance data from VPC JB. The chapter culminates in testing the effectiveness of the intervention using the Wilcoxon test and descriptive analysis for demographic details.

Aspect	Cycle One Intervention	Cycle Two Intervention
Methodology	<ul style="list-style-type: none"> Mixed-method approach: Qualitative (interviews, thematic analysis) and Quantitative (surveys). 	<ul style="list-style-type: none"> Similar to Cycle One, with additional focus on secondary data analysis.
Qualitative Analysis	<ul style="list-style-type: none"> Fieldwork included interviews with the operational team. Thematic analysis of interviews for problem identification and intervention proposal. 	<ul style="list-style-type: none"> Planned continuation of Cycle One approach. Additional focus on societal contributions and environmental engagement.

Quantitative Analysis	<ul style="list-style-type: none"> • Survey to assess CSR intervention's impact on the environment, society, and business growth. • Descriptive statistics analysis using SPSS. 	<ul style="list-style-type: none"> • Use of secondary data to evaluate CSR implementation. • Comparison of pre- and post-intervention data.
Key Findings	<ul style="list-style-type: none"> • Identification of CSR challenges. • Impact analysis of CSR activities like donation programs and environmental initiatives. 	<ul style="list-style-type: none"> • Analysis of CSR engagement activities, participant numbers, and investments. • Evaluation of the effectiveness of CSR interventions.
Intervention Focus	<ul style="list-style-type: none"> • CSR planning and budgetary aspects. • Environmental and societal CSR activities. 	<ul style="list-style-type: none"> • Increased scope in CSR activities and participant engagement. • Emphasis on environmental and societal contributions.
Reflections	<ul style="list-style-type: none"> • Learning from experiences in CSR implementation. • Planning for improvements based on Cycle One outcomes. 	<ul style="list-style-type: none"> • Reflection on the progression and increased effectiveness from Cycle One. • Planning for further enhancement in CSR strategies.

5.0 CONCLUSION

This study demonstrates that the integration of CSR with ESG objectives at Kitz Valve & Actuation (Malaysia) Sdn Bhd (KVM) is not just a strategic imperative but a vital component of their operational success. Our findings highlight that KVM's commitment to CSR has significantly enhanced their environmental performance, strengthened community relations, and improved their corporate image. Through a pragmatic mixed-method approach, the research reveals that CSR, when strategically aligned with business goals, can yield substantial benefits, including sustainable growth and competitive advantage, especially in challenging contexts like climate change and global pandemics.

In summary, KVM's experience serves as a reference for businesses aiming to incorporate CSR into their core strategies. The study underscores the importance of continuous adaptation and reassessment in CSR initiatives, advocating for a balanced approach that considers ethical, environmental, and economic dimensions. Future research should explore the long-term effects of such strategies and the potential for broader application across different industries.

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MITIGATING STRESS AMONG EARLY CHILDHOOD EDUCATORS: INTERVENTIONS AND IMPLICATIONS FOR ENHANCING WELL- BEING AND PRODUCTIVITY

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ABSTRACT: Stress is a prevalent issue in modern society, affecting individuals across various professions, including educators, and can have significant impacts on their well-being and productivity. Educators, as a professional group, commonly experience stress due to the demanding nature of their work and the responsibility they carry in shaping the future of the younger generation. Early childhood educators in Tadika Sinar Suria Bestari (TSSB) in Malaysia are facing stress-related challenges that adversely affect their productivity and effectiveness in providing quality education to young learners. The study aims to identify the stress level of four (4) female educators in TSSB, and formulate intervention plans to reduce their stress level. A mono-method approach was employed, using qualitative research techniques to conduct one-on-one semi-structured interviews with these educators, gaining valuable insights into their stress-related issues. The data was meticulously analysed through thematic, content, and comparative analysis to uncover key patterns and perspectives. The research findings revealed that the high stress reported by early childhood educators in TSSB can be attributed to two key factors. Firstly, educators face an overwhelming lack of resources and support, with excessive workloads that surpass their capacity to cope effectively. Secondly, there is a lack of transparent communication within the organization, resulting in reduced support and guidance for educators, exacerbating their stress levels. As a result, the study recommends implementing mentoring programs and support group systems as potential interventions to address these stressors and promote educators' well-being. By providing a nurturing and supportive environment, these interventions can potentially help educators better cope with the demands of their profession and improve their overall job satisfaction. This research unveils the critical issue of stress among early childhood educators, which extends beyond TSSB and permeates the broader educational landscape. Understanding the root causes and proposing effective interventions hold great potential in promoting educators' mental health and enhancing their productivity and job satisfaction. Ultimately, implementing these interventions can foster a more positive and nurturing learning environment for young children, thereby benefiting the entire education system. In practice, prioritizing the health and well-being of educators not only enhances the quality of education but also boosts the reputation of the organization. By acknowledging and addressing stress-related challenges, TSSB, and other institutions can demonstrate their commitment to supporting their educators, ensuring a brighter future for both students and educators alike.

Keywords: *Stress Management, Early Childhood Educators, Intervention Strategies, Workplace Well-being , Educator Productivity*

1.0 INTRODUCTION

Fink (2010) defined stress as threat perception that leads to worry, emotional tension, and trouble in adjusting. Barnum (2021) reported that 75 percent of educators disclosed that they experienced frequent job-related stress as opposed to 40 percent of employees with other professions. According to a nationally

representative poll done by the EdWeek Research Center in July 2021, 60 percent of teachers claimed they suffer job-related stress regularly or always. Only 9 percent claimed they never or rarely do it. Another concerning statistic is that 27 percent of educators revealed that they have depression symptoms. This is worrying because Cho, Kim, Park, Lee, Jeong, Kang, and Park (2013) found strong correlations between depression symptoms and job-related stress. When asked about the impact of job-related stress on individuals and their work, teachers frequently stated that they have experienced memory problems, confusion, poor judgement, lack of concentration, physical health problems, and emotional stress symptoms such as anger, irritation, moodiness, and depression. Furthermore, 41 percent of educators believe they are less effective at their jobs when they are stressed. Educators' quality of instruction, classroom management, and relationships with students all worsen when they are stressed out [73]. When teachers are stressed, pupils have a higher tendency to be stressed, which Wong, Ruble, Yu, and McGrew (2017) suggested can hurt their academic performance and engagement.

There are several causes of stress among educators which can be external such as parents' cooperation or internal such as school management and students' behaviour. The institution's management function is to reduce stress levels among its educators to maximize productivity scores, improve the quality of education, and maintain the institution's reputation. Good human resources management is crucial to strike a balance between improving educators' efficiency and providing high-quality education. The big challenge here is to maintain professionalism and pleasant emotions among educators, otherwise, it is tricky for the institution to maintain a good reputation and to have high-functioning and well-equipped educators. Hence, all organizations, especially in the education sector, should manage stress and productivity by implementing various coping strategies.

As part of the theoretical study, the study critically reviews the literature to look for in-depth understanding and find relevant judgment from the previous study. The study also reviewed the leading theory to support stress level management's impact on business functions, especially among educators. Findings presented that stress management aims mainly to reduce stress level which in turn improve productivity.

There are three variables investigated in the studies which are causes of stress, stress level, and productivity score. Most of the journals either investigate the causes of stress and stress levels or the association between stress levels and productivity scores among educators. Next, most studies were done in primary, secondary, or tertiary institutions, leaving a literature gap for research on early childhood educators. Therefore, we think it is crucial to study the relationship between causes of stress, stress levels, and productivity scores among early childhood educators in this research. In this research, the process involves conducting qualitative analysis, the interview, the methodology used in the research, and stress management interventions. Therefore, the research has the opportunity to present and discuss the actions that future researchers may refer to in a similar topic.

1.1 Problem statement

Inefficient stress management can obstruct an educator's teaching performance and productivity. One of the primary causes of high stress levels among educators is a lack of resources. When job demand exceeds an educator's capacity, educators will feel pressured and stressed. Then when the stress level among educators increases, educators may face difficulty to be productive and ultimately obstruct their teaching performance. Institutions that fail to deliver high-quality of education will face adverse impacts such as tarnished reputation and reduced number of students enrolled, affecting the business negatively. In TSSB, the researcher executed preliminary one-on-one interviews with two representatives for problem

identification among educators in TSSB. Based on the interviews, the researcher identified that lack of resources contributed to high-stress levels among educators in TSSB. For instance, educators in TSSB were given an additional workload which is to produce and share educational sharing sessions to improve interactive activity on TSSB's official social media platform. However, the educators were not given the proper training, mentoring program, or appropriate devices as tools for guidance alongside the additional workload. Other than that, educators in TSSB did encounter few students with behavioral issues that interfere with their teaching session. However, they are not well-equipped on how to tackle the issues properly. They are expected to react based on how they deemed necessary. This lack of resources increased stress levels among TSSB's educators which in turn reduced their productivity level.

On top of that, the educators did not have a safe space to share their frustration or challenges faced while working. Most of the time, they keep their feelings bottled up or share it with their family members which may not be as helpful as their family members are not familiar with the education industry. They may have little to no information on how to help the educators. Besides, the emotional support between educators and management is quite poor because they are not communicating with each other. As a result, they reported high stress levels.

If these issues are not being addressed as soon as possible, it may cause multiple issues in the organisation such as low quality of education, burnout educators, bad public image, and low income. The lack of resources, high stress level and low productivity score among educators in TSSB would be the problem statement of this study. Hence, a detailed problem diagnosis will be discussed in this section to explain cause and effect analysis by considering all possible root causes to the high stress level rather than focusing on the most obvious one.

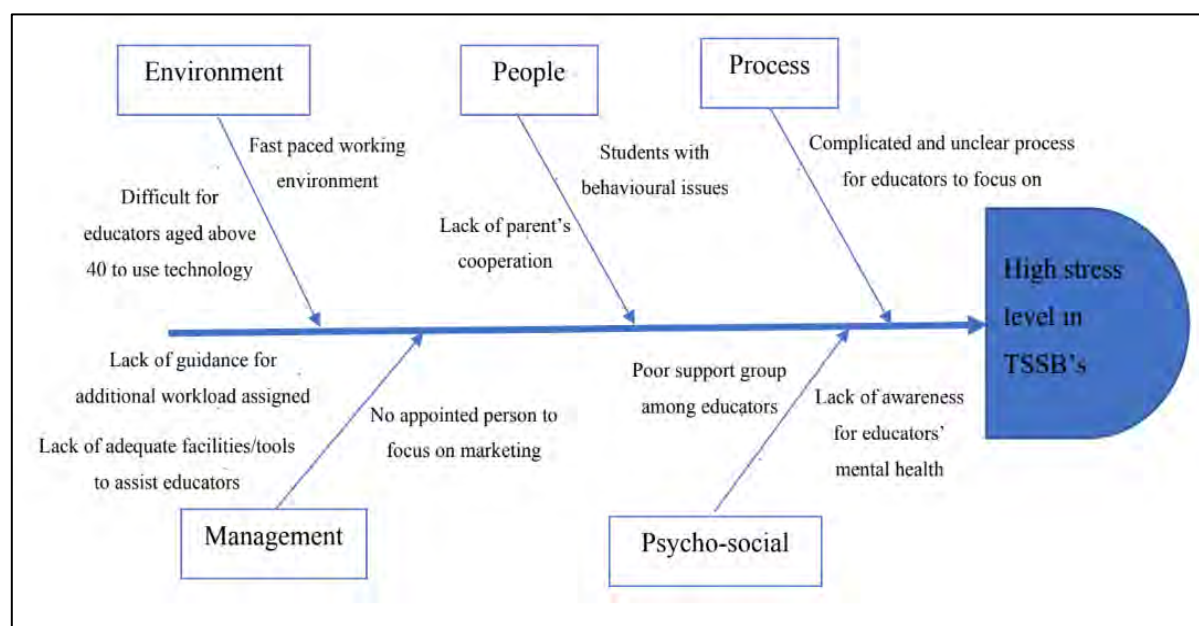


Figure 1-1: Ishikawa Diagram

Source: Author

Ishikawa diagram (Fishbone) was created as Figure 1-1 to identify all the possible root causes for high stress levels in TSSB's educators.

2.0 LITERATURE REVIEW

A comprehensive literature review examines relevant theories, including the Person Environment (PE) Fit Theory and Karasek's Job Demand Control-Social Support (JDCSS) model were done. The PE Fit Theory underscores the importance of aligning employment demands with available resources to reduce stress. Karasek's JDCSS model suggests that stress can be mitigated by empowering individuals with job autonomy and social support. Both theories emphasize resource research planning.

2.1 Underpinning Theory and Models

This research is based on two applicable theories, Person Environment (PE) Fit Theory and Karasek's Job Demand Control-Social Support (JDCSS) model, are proposed to support the action research framework. The objective from the two models is resource optimization, where the resources provided by management are available to support educators with the workload assigned by the management.

Person Environment (PE) Fit Theory

The topic background will reduce stress level and improve productivity among educators by aligning the employment demands with its resources. This will highlight the organisation's capability in managing its human resources. Therefore, one of the related theories applicable to support this study is PE Fit Theory which was developed by Midgley, Feldlaufer and Eccles in 1989. The PE Fit theory suggested that when an individual is unable to cope with the employment demands, the fit between the individual and their environment is incompatible, resulting in stress.

The PE Fit Theory was used in the previous study by Torres, Lawver, and Lambert (2009) to explore the causes of stress and the stress level among agriculture educators. The study also suggested a few factors that may reduce stress levels among educators which are opportunity for professional development, support from management to gain resources, availability of coping strategies and networking abilities. These factors are considered as resources for educators to assist them with the workload assigned. In line with the PE Fit Theory, when educators are given necessary resources, their ability to cope with employment demands increases. Consecutively, the fit between the individual and their environment become compatible and in turn reduce their stress level. This is supported by findings from Ansley, Houchins, Varjas, Roach, Patterson and Hendrick (2021) where they suggested that educators reported lower stress levels when they were given beneficial resources to help them cope with the job demands.

Karasek's Job Demand Control-Social Support (JDCSS) Model

The topic background will reduce stress level and improve productivity among educators by introducing and providing necessary resources to accommodate educators' needs. Therefore, one of the related models applicable to support this study is The Karasek's Job Demand Control-Social Support model which was developed by Karasek during the 1980s.

The Karasek's Job Demand Control-Social Support model works by demonstrating that when people with limited resources are being assigned with far greater job responsibilities, they become stressed. But employees can reduce the stress by having better job autonomy and control over their work

which can be done when individuals utilise job skills, create strong relationships with their co-workers and superiors, and improve emotional competence. Good rapport with colleagues and superiors can be seen as one of good support systems gained by the employees which can be a buffer to stress [67]. On top of that, employees with better emotional competence tend to cope with stress well [60].

The Karasek's Job Demand Control-Social Support model was used in the previous studies by Wagner, Forer, Cepeda, Goelman, Maggi, D'Angiulli, Wessel, Hertzman and Grunau (2012) and Hadi, Naing, Daud, Nordin, and Sulong (2009). Wagner et al (2012) used the model to explore occupational stress for early childcare educators where they found that workers who utilised coping strategies reported less stress and higher job control. Meanwhile, Hadi et al (2009) deployed the model to explore emotional health levels among secondary school teachers in Malaysia. They suggested addressing the emotional health issues to ensure educators are able to be productive.

2.2 Past and Contemporary Studies

2.2.1 Causes of Stress, Stress Level and Productivity Score

There are a lot of studies done on stress and productivity linkage in the workplace in general. However, since the focus of this research is the education industry, we reviewed a total of 18 journals and articles to provide an initial insight into how the previous research examines the issues, challenges, and factors that contribute to educators' stress level and productivity. Based on the 18 journals reviewed, there are mainly three variables investigated in the studies which are causes of stress, stress level and productivity score.

According to the literature and research that been reviewed, there is very limited study done to investigate all three variables in one research simultaneously. From the 18 journals reviewed, only research done by Yusuf et al (2015) addressed all three variables in primary school setting. The rest of the journals either investigate the causes of stress and stress level or the association between stress level and productivity score among educators. The literature review also revealed that most studies were done in primary, secondary or tertiary institutions setting which leave a literature gap for research for early childhood educators. From the 18 journals reviewed, there are only two studies done on the early childhood education sector. Wagner et al (2012) and Hozo, Sucic, and Zaja (2015) conducted their studies in the early childhood education sector to measure perceived stress and burnout syndrome respectively. However, their study did not measure the association between stress level and productivity score. Therefore, we think it will be highly beneficial to study the relationship between all three variables which are causes of stress, stress level and productivity score among early childhood educators in future research.

Based on the literature review, a few factors can contribute to the stress level which then affect educators' productivity. The factors are job satisfaction, workload, gender differences and lack of resources. The following subsections will detailed about these factors.

Job Satisfaction

The previous studies have shown that job satisfaction rises when pleasant emotions are amplified. Conversely, job satisfaction is reduced when unpleasant emotions are being suppressed [19]. Job satisfaction is closely linked with both remunerative and non-remunerative incentives which are managed by the organizations. Remunerative incentives include salary and benefits while non-remunerative incentives comprise of institution management, administration and institution facilities. Yusuf et al (2015)

demonstrated that lack of job satisfaction is a major source of stress among educators. When educators feel dissatisfied with their work, they tend to be unproductive, absent from work and finally resign [73]. This statement is also supported by another researcher, Wong et al (2017), who suggested that stress and productivity among educators are negatively associated. Therefore, the institutions need to increase job satisfaction among educators by minimizing the probability of unpleasant emotions to arise in the workplace. When individuals are feeling content and satisfied with their jobs, they can be more productive which will have a positive impact on the institution's success.

Workload

Torres et al (2009) suggested that heavy workload for American educators such as extensive paperwork, overtime, meeting deadlines, and little personal time exacerbated their stress levels. When people are presented with job demands exceeding available job resources, they will feel pressured. Previous studies done by Hadi et al (2009) and Ambotang and Bayong (2018) illustrated that heavy workload plays a significant role in causing stress among Malaysian educators. Another researcher, Billehoj (2007) also found that workload or working intensity was ranked first by educators as one of their significant stressors. Educators often have concern over excessive administration work as it dominates valuable time that could otherwise be spent on the teaching and learning processes. This is in line with findings by Holeyannavar and Itagi (2012) where educators viewed the additional paperwork assigned to them as troublesome and contributed to them being stressed. When some of the educators' workloads are being lifted off, their stress levels can be reduced [29]. Then, they will have more time to focus on their core and significant tasks which in turn increase their productivity score.

Gender Differences

Of course, men and women are wired differently in terms of biology. There might be differences on how these two genders experienced stress levels in the education field. For instance, male educators experienced less stress as compared to female educators [5]. Women's hormonal systems are fundamentally different, causing them to react more emotionally and become emotionally drained. Furthermore, they are exposed to greater stress elements because they take on multiple responsibilities on a daily basis. The findings from Harris, Jennings, Katz, Abenavoli, and Greenberg (2016) also concluded that gender is a strong predictor of stress among educators. This shows that gender differences have different influence on educators' stress level. But according to Yusuf et al (2015), the research did not show a significant difference on the stress level and its impacts on productivity on the basis of gender. In summary, the literature review found inconsistent results that show that gender is directly affected or a strong predictor of stress level among educators.

Lack of Resources

Tahseen (2015) highlighted the limited training opportunity and professional growth opportunity as one of the primary causes of stress among educators. The research evidence by Billehoj (2007) also points to the lack of resources such as facilities, training development and instructional resources as a critical stressor for educators. This is supported by results found by Wagner et al (2013) where educators who had resources such as problem-solving coping strategies reported lower stress levels. Ansley et al (2021) also supported this statement as they suggested that educators reported lower stress levels when they were given beneficial resources such as an online professional development program and stress management program. During Covid-19 pandemic, educators were required to shift to online teaching

platforms which highlighted the importance of resources in ensuring the work rearrangement to perform well. According to the nationally representative poll done by the EdWeek Research Center in September 2021, only 13 percent of educators claimed that their schools provided necessary devices, technology and guidance as resources or tools for teaching. If the necessary resources are unavailable, educators will face difficulty to proceed with their teaching plan and job-related tasks. This will slow down the progress on their other workload which later contributes to them being stressed and less committed to work. All of these play a part in educators being unproductive [73]. It is important for educators to have access to beneficial resources. This is because if they are being presented with less resources, they will face inability to progress further with their workload. As a result, they will feel frustrated and unproductive.

However, the previous studies and surveys mostly highlighted that lack of resources is the primary cause of stress among educators. But there is very limited study done to investigate the association between lack of resources, stress level and productivity score in the education industry. Since educators' stress level is concerning and in need of a solution, we think it will be beneficial to fill in the literature gap by studying the impact of lack of resources on stress level and productivity score among educators.

Moreover, 60 studies, four interventions were also investigated. Table 1.1 displays some of these studies.

Table 1.1: Summary of Past Interventions

Authors	Interventions
Yazdani, Rezaei, & Pahlavanzadeh (2010)	Training program
Roy, Kamath, Kamath, Hegde, Alex, & Lena (2016)	Training program
Bodin, García-Trabanino, Weiss, Jarquín, Glaser, Jakobsson & Wegman (2016)	Training program
Song, Zheng, Zhao, Yang, Ge, Li, & Lou (2020)	Training program
Valosek, Wendt, Link, Abrams, Hipps, Grant, & Nidich (2021)	Training program
Azad, Hassanvand, & Eskandari (2022).	Training program
Arredondo, Sabaté Valveny, Langa, Dosantos, Moreno, & Botella (2017).	Training program
Chin, Slutsky, Raye, & Creswell (2019)	Training program
Montero-Marin, Kuyken, Gasi6n, Barcel6-Soler, Rojas, Manrique, & Garc6a Campayo (2020).	Training program
Wolever, Finn, & Shields (2022)	Training program
Kozak, Freitag, & Nienhaus (2017)	Training program
Hahn, Binnewies, Sonnentag, & Mojza (2011)	Training program
Taylor, Harrison, Haimovitz, Oberle, Thomson, Schonert-Reichl, & Roeser (2016)	Training program
Hoert, Herd, & Hambrick (2018)	Wellness program
Lowensteyn, Berberian, Belisle, DaCosta, Joseph, & Grover (2018)	Wellness program
Ott-Holland, Shepherd, & Ryan (2019)	Wellness program
Ledikwe, Kleinman, Mpho, Mothibedi, Mawandia, Semo, & O'Malley (2018)	Wellness program
Verne (2014)	Wellness program
Chaturvedi & Rathore (2021)	Wellness program

Authors	Interventions
Seward, Goldman, Linakis, Werth, Roberto, & Block (2019)	Wellness program
Ho (1997)	Wellness program
Saadat, Snow, Ottenheimer, Dai, & Kain (2012)	Wellness program
Della Valle, Palmeri, Aloe, Marcantonio, Spera, Montagnani, & Sirico (2020)	Wellness program
Lozinak (2016)	Mentoring program
Zuzuárregui & Hohler (2015)	Mentoring program
Bruce (2009)	Mentoring program
Benson (2008)	Mentoring program
Nolan, & Molla (2018)	Mentoring program
Kahle-Piasecki (2011)	Mentoring program
Odell (1990)	Mentoring program
Blackburn (1977)	Mentoring program
Odell (1988)	Mentoring program
Alleman, Cochran, Doverspike, & Newman (1984)	Mentoring program
Hiiffman, & Leak (1986)	Mentoring program
Little (1985)	Mentoring program
Maddex (1993)	Mentoring program
Li, Wang, Lin, & Lee (2011)	Mentoring program
D'Abate, & Eddy (2008)	Mentoring program
Kim, Im, & Hwang (2015)	Mentoring program
Kram & Hall (1989)	Mentoring program
Kajs (2002)	Mentoring program
Huling-Austin (1992)	Mentoring program
Lindgren (2005)	Mentoring program
Naghieh, Montgomery, Bonell, Thompson, & Aber (2015)	Mentoring program
Brammer, & Abrego (1981)	Support group system
Schaiper, & DelForge (1982)	Support group system
Russell, Altmaier & Van Velzen (1987)	Support group system
Kirk, & Walter (1981)	Support group system
Belcastro, Gold, & Grant (1982)	Support group system
Zabel, & Zabel (1982)	Support group system
Schwab, Jackson, & Schuler (1986)	Support group system
Larkin, Brasel, & Pines (2013)	Support group system
Ferguson, Mang, & Frost (2017)	Support group system
Kahn, Schneider, Jenkins-Henkelman, & Moyle (2006)	Support group system
House, Umberson, & Landis (1988)	Support group system
Greenglass (1993)	Support group system
Pierce, & Molloy (1990)	Support group system
Greenglass, Burke, & Fiksenbaum, (2001)	Support group system
Greenglass, Fiksenbaum, & Burke (1996)	Support group system
Greenglass, Burke, & Konarski (1997)	Support group system

Educator stress and productivity are influenced by various factors, including job satisfaction, workload, gender differences, and lack of resources. While interventions like training, wellness, mentoring, and support groups have shown promise, there is a gap in research addressing all variables, especially among early childhood educators. The proposed interventions aim to fill this gap, with a focus on mentoring programs and support group systems, taking into account the financial constraints faced by educational institutions like TSSB during the pandemic. Future research should explore the impact of these interventions on all three variables among early childhood educators.

3.0 METHODOLOGY

The research employed a mono-method design, utilizing qualitative approaches to gather data. The identification of the problem began with semi-structured in-depth one-on-one interviews with two educators, followed by similar interviews with four educators to understand current stress levels before and after intervention. The research philosophy adopted authoritative knowledge as the source, drawing on a comprehensive review of literature consisting of 79 articles. The interpretivism approach guided the qualitative methods, allowing for an in-depth exploration of stress and productivity among educators in TSSB. An inductive strategy was employed, starting with observation and interviews, leading to theory development.

The research design involved induction, commencing with problem diagnosis through qualitative interviews and proceeding with thematic analysis to identify specific issues. The study's objectives were aligned with the interpretivism paradigm, emphasizing qualitative methods for data collection and analysis. The time horizon adopted a longitudinal approach, covering pre-intervention, intervention implementation, and post-intervention phases. The overall timeline spanned from May 2022 to May 2023.

The unit of analysis focused on educators directly involved in teaching sessions at TSSB, reflecting the qualitative nature of the study. The degree of involvement was considered medium, as the researcher actively participated in data collection through semi-structured interviews. The population and sampling employed purposive sampling, selecting educators based on their experience and responsibilities.

Validity and reliability were addressed through content validity, involving the review of interview questions by experts and quality journals. Reliability was ensured through data triangulation and the use of tables for recording and comparing data. The data collection procedure utilized semi-structured one-on-one interviews, while data analysis involved thematic analysis, comparative analysis, and tabulation forms.

The research adhered to a qualitative data analysis procedure, employing thematic analysis to identify codes, categorize them into themes, and link them to research problems and objectives. Comparative analysis allowed for a detailed evaluation of changes in stress and productivity levels pre- and post-intervention. The overall methodology provided a comprehensive and systematic approach to understanding and addressing stress issues among educators at TSSB.

4.0 RESEARCH AND DISCUSSION

The study conducted pre- and post-intervention thematic analyses to explore and address the high stress levels reported among educators at TSSB. Pre-intervention findings for Cycle 1 revealed three main themes: stressful working environment, lack of resources, and high expectations. Educators reported stress due to additional non-teaching workload, inadequate training, and high expectations from the management. The lack of resources, both in terms of training and support, contributed to the educators' stress.

The intervention involved a mentoring program aimed at providing support and guidance to educators facing challenges. Post-intervention findings indicated improvements in the working environment, availability of resources, and reduced stress levels. Educators reported positive emotional regulation, better job performance, and support from mentors. However, concerns still existed, such as student behavior issues and tasks unrelated to teaching. Comparative analysis showed a shift from stress-inducing factors to positive changes after the intervention. The mentoring program effectively addressed some issues but highlighted the need for further improvements. The study emphasized the importance of continuous support and training, suggesting that external training sessions might enhance the effectiveness of interventions.

The discussion for Cycle 1 delved into the three study objectives: problem identification, intervention formulation, and intervention evaluation. Lack of resources, especially training and support, was identified as a primary stressor. The intervention, a mentoring program, successfully reduced stress and improved productivity. The study concluded by reflecting on the action research process, reporting effectiveness, and proposing future implications and actions for Cycle 2.

Reflections on content and premise highlighted the effectiveness of the mentoring program in providing resources and support to educators. The overall action research process reflected the importance of problem identification, intervention formulation, and evaluation. The research process allowed for exploration and improvement of human resources management interventions. The report acknowledged the small sample size as a limitation, suggesting future research for more significant results.

The study's future implications emphasized the continuous execution of the mentoring program for improved human resources management. However, the report also acknowledged limitations, suggesting external training sessions for broader perspectives. Plans for the second research cycle included addressing disagreements among educators, improving relationships, and creating safe spaces for communication with management.

The Cycle 2 of this study focused on the impact of a support group intervention on the stress levels and productivity of educators at TSSB, with data collected through qualitative interviews before and after the intervention. The participants, all female, were interviewed about the causes and effects of stress, the proposed intervention, and their demographics. The pre-intervention analysis identified three main themes: improvements experienced, a stressful working environment, and concerning issues faced by educators. The mentoring program in Cycle 1 led to positive outcomes, including better workload management and increased efficiency. However, issues like additional workload, last-minute changes, and communication barriers still contributed to a stressful working environment.

Post-intervention, the study revealed that the support group sessions successfully created a safe space for educators to share struggles, fostering emotional, physical, and financial support. The intervention addressed concerns raised in the pre-intervention phase, leading to better working conditions and positive improvements in educators. Themes such as improved teamwork, reduced negativity, and

enhanced commitment were observed. Despite the progress, educators expressed the need for further improvements, including professional training and increased parental involvement. A comparative analysis highlighted the positive impact of the intervention, with the post-intervention phase showing significant improvements in the working conditions and overall well-being of educators. The findings suggest that ongoing support and collaboration are crucial for sustaining positive changes in the educational environment.

In the discussions section, the researcher provides a detailed analysis of the data findings, supporting the three research objectives of an action research aimed at addressing high stress levels among educators at TSSB. The first objective involves identifying the issue of teachers experiencing elevated stress levels, and the second objective focuses on creating an intervention strategy to mitigate this stress. Thematic analysis based on interviews with educators and the principal is utilized to achieve these objectives, shedding light on human resource management practices at TSSB.

The researcher uncovers that, in addition to workload-related stress, the absence of transparent communication resources contributes significantly to educators' high stress levels. The post-intervention interviews revealed that educators lacked support and were hesitant to share their struggles due to fear of penalties. This realization prompted the researcher to delve into pre-intervention human resource management practices at TSSB, leading to the formulation of an intervention strategy to alleviate stress among educators.

Objective 1 highlights the identification of stressors, revealing a lack of a safe space for educators to share difficulties without fear of penalties, negatively impacting their productivity. Objective 2 focuses on the formulation of an intervention plan, leading to the implementation of a support group system to address stress-related issues. The study draws on literature emphasizing the importance of social support in reducing burnout and stress.

Objective 3 involves evaluating the interventions, and the findings indicate a significant reduction in stress levels and improved productivity among educators after the implementation of the support group system. The study aligns with previous research suggesting that support groups offer a comprehensive approach to social support, particularly in the context of the unique challenges faced by educators. The findings also correlate with literature emphasizing the role of social networks within teaching communities in alleviating stress. The support group system proves effective in providing a safe space for educators to share their challenges without judgment, fostering a sense of connection and support.

5.0 CONCLUSION

In conclusion, this thesis has successfully demonstrated the efficacy of implementing a mentoring program and support group system to alleviate stress and enhance productivity among TSSB educators. The positive feedback from participants validates the interventions' effectiveness in achieving the research objectives. Identified areas for improvement, particularly increased parental participation and professional training, highlight the need for ongoing enhancements.

The research significantly contributes to educational practice by providing valuable insights into practical strategies for mitigating stress and improving productivity among TSSB educators. The implementation of the mentoring program and support group system offered teachers essential emotional support, guidance, and collaborative opportunities, resulting in reduced stress levels and improved job performance. The study underscores the importance of establishing proper support systems in educational

environments, thereby augmenting the body of knowledge on educator well-being.

A key conclusion emphasizes the necessity of professional development for educators, as reported by participants expressing a need for additional training to enhance stress management and teaching skills. Continuous professional development is highlighted as a means to boost educators' confidence, job satisfaction, and overall well-being.

Furthermore, the study underscores the crucial role of increased family involvement in the educational process. The creation of a supportive learning environment is emphasized when parents actively engage in their children's education, reinforcing the importance of fostering deeper connections between teachers and parents through various communication channels and collaborative initiatives.

In summary, the thesis provides actionable insights for educational institutions to create a more supportive and productive environment for TSSB educators. Despite certain limitations, such as a small sample size and a focus on a specific context, the research recommendations offer avenues for future exploration. These include investigating the impact of specific professional development programs, exploring the influence of family engagement, employing mixed-methodologies, analyzing contextual factors, comparing intervention strategies, replicating studies in diverse environments, and assessing the ripple effects of educators' well-being on student outcomes. Future studies can build upon these recommendations to further enhance the development of effective methods for stress reduction and productivity improvement, ultimately contributing to the betterment of educational quality and the well-being of educators.

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ANALYZING LEADERSHIP CULTURES: PERSPECTIVES FROM HARBIN INSTITUTE OF INFORMATION TECHNOLOGY

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ABSTRACT - This paper presents a comprehensive analysis of leadership cultures at Harbin Institute of Information Technology (HIIT), exploring the intricate dynamics and multifaceted aspects of leadership within the context of higher education in China. Utilizing Hofstede's cultural dimensions as a foundational framework, the study delves into the specific manifestations of power distance, individualism versus collectivism, masculinity versus femininity, uncertainty avoidance, long-term versus short-term orientation, and indulgence versus restraint in the administrative and educational spheres of HIIT. The research further contrasts entity and relational leadership approaches, providing a nuanced understanding of how these methodologies shape and are shaped by the prevailing cultural ethos. The analysis is enriched through the lens of social capital theory, examining the roles of structural, cognitive, and relational social capital in fostering effective leadership and organizational development. Key findings highlight the evolution of leadership culture in response to societal changes, the balancing act between traditional hierarchical structures and emerging trends towards inclusivity and individuality, and the critical role of leadership in steering the institution through challenges of modernization and internationalization. The study not only offers valuable insights into the leadership culture at HIIT but also contributes to the broader discourse on leadership in higher education, particularly in the context of rapidly transforming societal and educational landscapes.

Keywords: *Leadership Culture, Higher Education, Hofstede's Cultural Dimensions, Entity Leadership, Relational Leadership, Social Capital, Organizational Development,*

1.0 INTRODUCTION

In the ever-evolving landscape of higher education, the role of leadership culture in shaping an institution's trajectory cannot be overstated. Harbin Institute of Information Technology (HIIT), a private university in the throes of this transformative era, stands at a crucial juncture whether the quality of education and sustainable development are intricately tied to the effectiveness of its leadership. This study ventures into an in-depth exploration of the leadership culture at HIIT, how it mirrors the broader challenges and opportunities inherent in the popularization of higher education in China.

Rooted in the rich theoretical framework of Hofstede's cultural dimensions, this analysis not only dissects the unique cultural underpinnings of leadership at HIIT but also dive into the practical implications of these cultural orientations on the university's operational and strategic paradigms. By weaving together, the fabric of entity and relational leadership theories, the study seeks to unravel the complex tapestry of leadership dynamics that govern HIIT. It aims to shed light on how these diverse leadership styles coalesce

to drive the institutions' mission and vision in a landscape marked by rapid socio-economic shifts and escalating global competition in higher education.

This paper is more than just an academic inquiry; it is a journey into the heart of HIIT's leadership ethos. It endeavors to offer insights that resonate beyond the confines of this institution, providing valuable perspectives for educators, administrators, and policymakers committed to fostering leadership cultures that not only thrive in their uniqueness but also adapt and evolve in the face of global educational challenges.

2.0 HOFSTEDE'S CULTURAL DIMENSIONS AT HIIT

At the heart of Harbin Institute of Information Technology's (HIIT) leadership ethos lies a complex interplay of cultural dimensions, as conceptualized by Professor Geert Hofstede. This section delves into how these dimensions not only manifest but also actively shape the leadership and organizational culture at HIIT, painting a vivid picture of an institution navigating the nuances of cultural influences in the realm of higher education [5].

Hofstede's Dimension	Manifestation at HIIT
Power Distance	Transition from a traditional hierarchical structure towards a more inclusive decision-making process, reflecting broader societal changes in China.
Individualism vs Collectivism	Shift from collectivism to individualism, especially among younger faculty focusing on personal career goals and individual achievements.
Masculinity vs Femininity	Gradual increase in female representation in traditionally male-dominated fields and leadership roles, aligning with societal shifts towards gender equity.
Uncertainty Avoidance	Balancing established norms with innovative approaches, such as overseas training programs and new teaching methodologies.
Long-term vs Short-term Orientation	Strong emphasis on long-term planning and development, with significant investment in research and infrastructure to prepare future-ready students.
Indulgence vs Restraint	Predominantly restrained ethos, with elements of indulgence in academic pursuits and personal interests, reflecting a balance between traditional values and individual aspirations.

In synthesizing these cultural dimensions, this analysis offers a window into the soul of HIIT. It reveals how an institution, steeped in tradition yet responsive to change, navigates the complex cultural landscapes to carve out a unique identity in the tapestry of global higher education.



3.0 ENTITY VS. RELATIONAL LEADERSHIP APPROACHES AT HIIT

The leadership fabric of Harbin Institute of Information Technology (HIIT) is woven from two distinct yet complementary strands: the Entity Leadership Approach and the Relational Leadership Approach. These approaches, each with its unique features and applications, together form the cornerstone of HIIT's leadership ethos.

Leadership Approach	Key Aspect	Description at HIIT
Entity Leadership	Strategic Vision and Decision-Making	Leaders focus on defining and communicating long-term goals, ensuring that the institution has a clear and strategic direction.
	Management and Efficiency	Emphasis on efficient management practices, including establishing organizational structures and clearly defined roles, streamlining operations for optimal functioning.
	Performance and Accountability	Setting clear performance criteria, holding individuals accountable, and providing constructive feedback to foster a culture of excellence and achievement.
Relational Leadership	Communication and Collaboration	Prioritizing open communication and collaboration, leaders build strong, trust-based relationships with faculty, staff, and students.
	Team Cohesion and Employee Engagement	Focusing on team-building, leaders motivate and engage team members, enhancing team performance and satisfaction.
	Conflict Resolution and Consensus Building	Skilled in negotiating and mediating, these leaders excel in resolving conflicts and building consensus, harmonizing diverse viewpoints for the institution's benefit.

Source: [4][6]

3.1 Synergy between Entity and Relational Approaches:

At HIIT, the interplay between the Entity and Relational Leadership approaches represents a dynamic equilibrium rather than a rigid dichotomy. Leaders at the institution adeptly navigate between or blend these styles, tailoring their approach to the situational demands and institutional objectives. Such versatility ensures that while strategic goals are systematically pursued (Entity Leadership), the human aspect of the institution, encompassing communication, team cohesion, and conflict resolution (Relational Leadership), is also nurtured and valued. This duality in leadership styles not only enriches the administrative and academic environment at HIIT but also sets a paradigm for educational leadership that balances the rigors of management with the subtleties of human interactions.

4.0 THE ROLE OF SOCIAL CAPITAL IN LEADERSHIP AT HIIT

In the dynamic and interconnected world of higher education, social capital plays an indispensable role in shaping effective leadership. At Harbin Institute of Information Technology (HIIT), understanding and leveraging social capital is key to enhancing the institution's leadership approaches and overall success. Social capital, with its emphasis on networks, shared understanding, and relational dynamics, complements the entity and relational leadership models employed at HIIT. It serves as a vital underpinning for fostering collaboration, driving innovation, and ensuring a cohesive institutional culture. In this section, we dissect how HIIT harnesses the power of social capital across its various dimensions to reinforce and enrich its leadership strategies.

Form of Social Capital	Key Features at HIIT	Impact on Leadership and Organization
Structural Social Capital	Networks and collaboration between faculty, students, and external stakeholders; Platforms for stakeholder interaction like academic symposiums and industry partnerships.	Facilitates resource sharing and collaborative efforts, instrumental in institutional growth and innovation.
Cognitive Social Capital	Development of a shared vision and collective goals; Emphasis on creating a culture of trust and mutual respect.	Aligns efforts towards common objectives, particularly in research and academic excellence, fostering an environment conducive to innovation.

Source: [1][2]

5.0 CONCLUSION

The exploration of leadership cultures at Harbin Institute of Information Technology (HIIT), grounded in Hofstede's cultural dimensions and the interplay of entity and relational leadership approaches, reveals a nuanced blueprint for effective educational leadership. This study highlights the importance of integrating diverse leadership styles and harnessing the power of social capital to navigate the challenges of higher education. Key takeaways include the necessity of a balanced leadership approach that synergizes the structured, goal-oriented entity leadership with the empathetic, relationship-centric relational leadership [3]. Such integration is crucial for HIIT to maintain its agility and responsiveness to educational advancements. Additionally, the strategic utilization of social capital – structural, cognitive, and relational – is pivotal in fostering a collaborative and innovative academic environment.

For HIIT, the path forward involves continuing to refine its leadership approaches, aligning them with both global best practices and its unique cultural context. This strategy is not only vital for HIIT's evolution but also serves as a valuable model for other institutions in the global educational arena, emphasizing adaptability, collaboration, and cultural sensitivity as key drivers of success in modern education. In summary, HIIT's experience offers insightful strategies for educational leadership, underscoring the significance of adaptability and a comprehensive understanding of cultural and relational dynamics in achieving institutional excellence.

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REVOLUTIONIZING VOCATIONAL EDUCATION IN CHINA: TIANJIN BINHAI XUN TENG TECHNOLOGY'S PARTNERSHIP WITH INDUSTRIAL COLLEGES FOR PRACTICAL SKILL INTEGRATION

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Abstract – This case study explores the collaboration between Tianjin Binhai Xun Teng Technology and various industrial colleges in China, illustrating the critical role of integrating industry and education in vocational education. In the context of China's educational reforms, which emphasize a student-centered approach, this partnership serves as a prime example of the country's shift towards high-quality, skills-focused education, aligned with its rapid economic development objectives. The study delves into Tianjin Binhai Xun Teng Technology's innovative strategy, known as 'one core, three drivers', which prioritizes the development of intelligent products, the establishment of IT service outsourcing standards, and the fusion of industry with education. This model effectively addresses key challenges in vocational education, such as bridging the gap between academic training and industry requirements, and enhancing students' career planning and professional skills. The research contributes valuable insights into the evolving landscape of industry-education integration in China and its role in cultivating application-oriented, innovative talents for the digital age.

Keywords: *Industry Education Integration, Vocational Education Reform, Skill Development, Collaborative Innovation, Talent Cultivation, China Education*

1. INTRODUCTION

The 20th National Congress of the People's Republic of China has set a definitive direction for the future of education, highlighting the necessity of integrating vocational, higher, and continuing education in a harmonious manner to foster innovation. This case study underscores this direction, advocating for the unified progression of both vocational and general education, the melding of industry with education, and the blending of science with education. Such integration is essential in redefining vocational education's role and is key in nurturing talents in this field. It facilitates the seamless integration of production and education, and promotes the development of high-quality technical and skilled personnel [1].

Founded in 2008, Tianjin Binhai Xun Teng Technology Group has emerged as a leader in this domain. As one of the pioneering high-tech enterprises in Tianjin to embrace industry-education integration, the

company has consistently led with its "one core, three drivers" strategic approach. This strategy focuses on the creation of intelligent products, standardization in IT service outsourcing, and the implementation of an industry-education fusion model. This approach is pivotal in driving high-quality development and in fostering extensive collaborations with educational institutions across the nation. Through these partnerships, Tianjin Binhai Xun Teng Technology Group has significantly contributed to regional economic development and the cultivation of application-oriented talents, thus playing a key role in the dynamic evolution of vocational education in China.

2. Revolutionizing Vocational Education: The Emergence and Impact of Modern Industry Colleges in China's Industry-Education Integration Landscape

2.1 Policy Support

The advent of the "Guidelines for the Construction of Modern Industrial Colleges (Pilot)" (2022) No. 16, commonly known as the "Guidelines", marked a significant milestone in the evolution of higher and vocational education sectors in China. These Guidelines catalyzed the establishment of the first batch of 50 pilot modern industrial colleges at a national level and prompted local initiatives to develop similar colleges across various provinces, municipalities, and autonomous regions. Emphasizing a departure from traditional educational models, the Guidelines advocate leveraging industrial strengths, acknowledging enterprises as central to education, and deepening the synergy between industry and academia. They encourage universities to explore innovative models for constructing modern industrial colleges, underscoring the need for a theoretical framework to guide their high-quality construction and sustainable growth [3].

2.2 The Connotation of Industrial College

Industrial colleges epitomize a novel paradigm of industry-education integration, characterized by robust collaboration between leading enterprises, higher vocational colleges, government, and industry. In this model, enterprises actively shape the educational process by identifying industry-specific talent needs and partnering with academic professionals to refine talent training models. Activities such as student internships, graduate employment, faculty development, and corporate training are integral to this model, aiming to meet the objectives of both educational institutions and businesses. The evolution of industrial colleges has welcomed broader participation, establishing a multi-party community within the framework of these institutions and substantially bolstering their construction and impact [2].

2.3 General Construction Goals of Modern Industrial College

General Construction Goals of Modern Industrial Colleges Modern Industrial Colleges primarily aim to strengthen higher education's role in supporting industrial growth. This entails creating a robust connection between talent training and industrial demand, encompassing aspects like education, research, and social services to meet diverse stakeholder needs. These colleges are designed to serve and drive regional or local

industrial development, optimizing related academic disciplines to produce engineers adept in modern industries, thereby becoming centers for high-quality, applied, interdisciplinary, and innovative talent training. They also focus on research into industrial technological advancements and novel technologies, promoting the transformation of research into practical applications and aiding in the modernization and evolution of existing industries [4].

2.4 The Main Construction Goals of Modern Industrial College

The development of industrial colleges in universities is geared towards four main objectives, aiming to integrate industry with education, enhance educational quality, raise teaching standards, and improve the practical relevance of students' professional skills [7]:

2.4.1 Innovate Talent Training Model

The primary goal of establishing a modern industrial college is to develop well-rounded professional talents that resonate with the needs of all stakeholders. This involves advancing beyond the conventional model of "school-enterprise cooperation" to establish a new educational paradigm. This model harnesses the varied functions and resources of multiple participants to more effectively nurture professional talents.

2.4.2 Create a Professional Practice Base

Students stand to gain significantly from the establishment of Industrial Colleges. By applying their theoretical knowledge in real-world settings, students can achieve their educational objectives. Establishing practice bases is key in this context, as it not only bolsters students' work capabilities but also enhances their employment prospects. The emphasis is on bridging the gap from "theory to practice," thereby creating a professional training platform for students.

2.4.3 Optimize the Structure of the Teaching Staff

Teachers are expected to keep abreast of the latest professional knowledge and teaching methodologies. All entities involved in the industrial college are encouraged to contribute to curriculum design, constantly updating and refining teaching content and methods. This includes integrating practical work processes, current national policies, and industry standards into the curriculum, thereby optimizing the structure of the teaching staff, enriching course material, and improving student engagement and learning.

2.4.4 Implement a Multi-Party Coordination Mechanism

For industrial colleges to be effective, it is essential to recognize and meet the diverse needs and goals of various stakeholders. This requires innovative integration of systems and mechanisms, aimed at maximizing the interests of as many parties as possible. Regular discussions among various participants about the future management and development of the college are crucial for enhancing the sustainable development capabilities of the Industrial College.

3. "Xunteng Characteristics "-Industry-Education Integration Construction Model

3.1 Construction Model of Xunteng Industrial College

Tianjin Binhai Xunteng Technology Group leverages its industrial strengths to deepen the integration of industry and education through school-enterprise cooperation, achieving innovative talent training under the "industry + profession" dual-drive model. The Group's focus on high-quality development is marked by three major forces: intelligent series products, IT service outsourcing standard system, and the industry-education integration model. These components form the "one core, three drivers" strategic layout, boosting regional economic and technological growth. The characteristic construction model of Xunteng's Industrial Colleges is summarized as follows:

Industrial College Construction Model	Description at XunTeng
"Seven Fusions" Innovation Model	Integrate into the collaborative education community
	Ideological and political training
	Cross-integrated education system
	Heterogeneous and horizontally integrated project-based courses
	Interactive and integrated practical teaching
	Integrated enterprise training model
	Comprehensive and integrated social services

Addressing the challenges in the integration of colleges and enterprises, industry and education, and the ideological and political education system in courses remains a priority for vocational colleges. Xunteng's "seven integrations" blend professional knowledge teaching with skilled personnel training and ideals and beliefs education. It represents a systematic, scientific, and multi-faceted model, elevating the integration of ideological and political personnel training [5][6].

Industrial College Construction Model	Description at XunTeng
	School-enterprise resource sharing

"Ten Joints" Cooperation Models	Joint recruitment
	Co-building management team
	Jointly build a training base
	Jointly build an industrial base
	Co-produced talent training program
	Implement teaching together
	Jointly develop courses
	Integration of school and enterprise culture
	Employment resource sharing

In alignment with national vocational education policies and the directives of the Communist Party of China and the State Council, the Xunteng Group and vocational colleges collaborate to build Industrial Colleges. This joint effort is aimed at cultivating technical and skilled talents through the "industry + profession" industrial college construction model.

Industrial College Construction Model	Description at XunTeng
Eight First-Class Top-Level Designs	First-class guidance expert team
	First-class operation management team
	First-class team of practical teachers
	Construction of first-class professional clusters
	First-class teaching resource development
	First-class enterprise projects
	Internship and employment in first-class companies
	The cradle of first-class skilled talents

The Xunteng Group adheres to the "eight first-class" top-level design, coordinating resources and integrating various strategic resources from schools and enterprises for effective utilization and maximized benefits.

Industrial College Construction Model	Description at XunTeng
"Eleven-based" Implementation Model	Construction of "professional clusters" based on industrial needs
	Systematic course development based on work process
	Practical teaching materials based on real enterprise projects

	Based on "enterprise simulation warehouse style" practical teaching
	Based on "employee-oriented" professional quality training
	Based on the school-enterprise collaboration "evaluation" system
	Based on the "industry certification" system
	Based on the "co-education and co-management" system
	Based on the "Enterprise Technology" teacher training system
	Based on the school-enterprise "double teacher" competition mechanism
	Based on the employment ecology of "introducing industry into schools"

3.2 Construction content of Xunteng Industrial College

3.2.1 Professional Cluster Collaborative Innovation Base

This construction involves a 1:1 spatial layout for practical teaching bases and industrial incubation. Binhai Xunteng Technology Group establishes various professional training rooms and technical directions based on majors like big data, digital media, architecture, e-commerce, and computer application technology. This fosters professional clusters in new generation information technology, e-commerce, new media, and design, integrating the Group's enterprise-level talent training solutions into school-enterprise cooperative professional talent training programs.

3.2.2 Three-Education Reform Collaborative Innovation Base

This includes mutual integration of teachers and staff, integration of classes and posts, curriculum ideological and political education, and task-based teaching. Both schools and enterprises contribute to forming a teaching management team, developing courses and teaching materials, and applying for national or provincial teaching resources, focusing on cultural inheritance and technological innovation.

3.2.3 Industrial Incubation Collaborative Innovation Base

This relies on half the space of the Industrial College for constructing an industrial incubation base/productive internship practice base. It includes various industrial workshops, such as e-commerce operations and new media design, to meet the needs of professional construction, talent training, and employment.

3.2.4 "Job, Course, Competition, Certificate Integration" Promotes the Upgrading of Talent Training Model

The College participates in various competitions and incorporates the Ministry of Education's "1+X" certificate training system, enhancing professional construction standards.

3.2.5 Internship Practice Base Inside and Outside the School

This involves building industrial incubation bases and internship practice bases with key employment enterprises outside the school, forming a deep integration model of schools and enterprises in education.

4. CONCLUSION

In the current socio-economic context, the implementation of a talent training model that synergizes industry and education through collaborative efforts between universities and enterprises is essential. This model is pivotal in enhancing both the quality and efficiency of student training in educational institutions and in providing enterprises with access to outstanding talent resources. Such advancements in the talent training model, rooted in school-enterprise cooperation and industry-education integration, are instrumental in elevating educational standards in schools, boosting economic benefits for enterprises, and playing a significant role in societal development and industrial modernization.

The talent training approach based on school-enterprise cooperation and industry-education integration is a vital component of the higher vocational education paradigm. It is key to elevating the quality of higher vocational education and holds substantial significance. Looking ahead, the Xunteng Group is committed to grounding its efforts in real-world contexts, aligning professional characteristics with market demands. The Group will actively engage in exploration and practice, continuing to develop around the three main pillars: "professional cluster collaborative innovation base, three-education reform collaborative innovation base, and industry incubation collaborative innovation base." The aim is to perpetuate the evolution of the vocational education talent training model driven by the dual forces of "industry + profession." By doing so, Xunteng Group aspires to innovate continually and create more high-quality industrial college projects that are distinguished by their integration of industry and education, school-enterprise cooperation, and industry-university collaboration, all characterized by their unique features.

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FEASIBILITY ANALYSIS OF INDUSTRIAL METAVERSE BIG DATA CENTER CONSTRUCTION IN NORTHWEST CHINA

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ABSTRACT

This paper analyzes the feasibility of establishing an Industrial Metaverse Big Data Center in Northwest China, in line with the country's "14th Five-Year Plan" focusing on digital economy growth. It explores the industrial metaverse's potential to revolutionize industrial processes, leveraging technologies such as XR, AI, IoT, and digital twins. The project aligns with national and regional policies aimed at digital infrastructure development, particularly in the context of Xinjiang's commitment to the digital economy. The study examines the evolving market dynamics of the data center industry, both globally and domestically, highlighting the significant role of data centers in supporting the digital transformation across various sectors. It also reviews different business models within the data center industry, underscoring the diverse operational strategies. In conclusion, the paper emphasizes the strategic importance of this project in fostering industrial innovation, technological integration, and the collaborative development of industries such as cloud computing, big data, and the metaverse. It advocates for a balanced approach to data center construction, tailored to local economic and industrial needs, and anticipates a future trend towards both large-scale and edge-computing data centers, thereby contributing to China's digital advancement and the broader digital economy.

Keywords: *Industrial Metaverse, Digital Economy Development, Data Center Infrastructure, Digital Transformation Strategy, Green Data Centers*

1. BACKGROUND

The concept of the "Metaverse," also referred to as the "Meta-universe," represents a virtual world that is both mapped to and interacts with the real world. It constitutes a novel type of digital living space, complete

with its own social system. This space is forged through the integration of advanced technologies such as digital twins and virtual reality [1]. In the industrial context, the metaverse encompasses the entire spectrum of product lifecycle management, including design, production, application, and service [11]. This new industrial ecology deeply intertwines cutting-edge information and communication technologies, exemplified by XR (Extended Reality) and digital twins, with the tangible industrial economy. The industrial metaverse's applications span the entire product lifecycle, from research and development to after-sales service. This spectrum facilitates a seamless transition from virtual to real-world applications, thereby guiding and enhancing the optimization of industrial processes and efficiency [12].

The industrial metaverse emerges as a transformative force in the digitalization of enterprises, marking a new era beyond the industrial Internet. It epitomizes the next stage of digital transformation and the future of intelligent manufacturing. By enabling collaborative work and simulated operations within a virtual environment, the industrial metaverse guides the efficient functioning of real-world industries, thus empowering them. Technologies such as XR, AI (Artificial Intelligence), IoT (Internet of Things), cloud computing, and digital twins are employed to establish seamless integrations between people, machines, objects, systems, and other domains. This integration fosters a symbiotic relationship between digital technology and traditional industry, propelling the efficient progression of tangible industrial sectors [6].

The Industrial Metaverse Data Center is poised to become a crucial hub for these digital industrial technologies and their applications. Coinciding with the implementation of China's "14th Five-Year Plan" and the rapid development of new infrastructure supporting the digital economy, the data center industry is witnessing expansive growth opportunities. Data centers serve a dual role: as critical infrastructure and as foundational service systems supporting the emergence of new industries. Currently, China's burgeoning sectors, including artificial intelligence, telemedicine, and the industrial Internet, heavily rely on data centers for industry support [4]. In 2021, the market value of China's data center industry reached 120.19 billion yuan, showing a year-on-year increase of 20.9% and maintaining a robust growth trajectory. The market is projected to continue expanding at an 18.8% annual rate over the next three years, potentially reaching a market size of 2013.4 billion yuan by 2024 [4].

2. FEASIBILITY ANALYSIS OF PROJECT CONSTRUCTION

2.1 Complies with National Policies

China's "14th Five-Year Plan" delineates a strategic vision for the digital economy, positioning it as the successor to the agricultural and industrial economies. This plan underscores the use of data resources as the primary element, with modern information networks serving as the mainstay and the integrated application of information and communication technology driving an all-encompassing digital transformation. This transformation aims to foster a new economic paradigm characterized by increased fairness and efficiency. The rapid evolution of the digital economy, with its extensive reach and influential power, is catalyzing significant shifts in production methods, lifestyles, and governance structures. This evolution is playing a crucial role in reorganizing global resource allocation, reshaping the world's economic framework, and altering the competitive global landscape [4].

During the tenure of the "14th Five-Year Plan," China's digital economy is transitioning into a phase marked by deeper application, standardized development, and inclusive sharing. This shift is a response to emerging challenges and opportunities within the digital domain, aimed at expanding economic horizons and fostering the robust growth of China's digital economy. The "Fourteenth Five-Year Plan for National Economic and Social Development of the People's Republic of China and the Outline of Long-term Goals for 2035" proposes the creation of a modern infrastructure system. This includes accelerating the establishment of new infrastructure, formulating a national integrated big data center system, and prioritizing the efficient coordination and dispatch of computing resources. The plan envisions the construction of several national hub nodes, big data center clusters, and supercomputing centers of E-level and 10E-level. Furthermore, it emphasizes the comprehensive improvement of resource utilization efficiency, advocating for energy conservation and efficiency enhancements in emerging sectors such as 5G and big data centers [4].

These strategic directions have been reinforced by a series of policies regulating the data center industry. Key policy themes include "new infrastructure," "double carbon" goals, and the "Eastern Data and Western Computing" initiative. These policies significantly influence industrial development and underscore the growing importance of the digital economy in national economic progression. Emerging technologies like artificial intelligence, the Internet of Things, the industrial internet, and blockchain are at the forefront of the ensuing industrial revolution. Data centers, as pivotal facilitators for the integration and application of digital technology, have entered a new phase of development. Given the trajectory of the information economy, data centers are poised for substantial market growth.

The "new infrastructure" policy not only bolsters the digital economy but also propels the data center industry forward as a key component of digital infrastructure. This policy advocates for the accelerated construction of data centers to support broader industry development [4]. Additionally, the "Eastern Data and Western Computing" project is set to redefine the data center industry. This initiative, focusing on future computing power and the strategic planning of industrial regional layouts, will significantly impact the functional positioning and regional distribution of data centers.

2.2 Complies with Regional Policies

The evolution of the digital economy within China's provincial administrative regions displays distinctive cascading distribution characteristics. These variations arise from differences in strategic direction, economic foundations, industrial structures, and resource availability. Notably, there is a pronounced regional agglomeration effect in the development of the digital economy. This effect manifests in considerable regional disparities regarding the scale, growth rate, and proportion of the digital economy, yet all regions exhibit a consistent trend of improvement.

Xinjiang, in particular, has embarked on an ambitious plan to bolster the digital economy. The region has initiated the "Digital Strong Foundation" project, which aims to enhance digital infrastructure. This includes advancing the construction of data centers in key areas like Urumqi and Karamay Cloud Computing Industrial Parks. Efforts are also being made to support the Xinjiang Software Park in establishing a recognized "China Software Park." Integral to these initiatives is the integration of cutting-edge information technology with the manufacturing sector. This integration is expected to pilot demonstrations that will catalyze the digital transformation of significant industrial enterprises, fostering a

deeper union of the digital and real economies and injecting fresh impetus into high-quality development pursuits.

The "14th Five-Year Plan for the Development of the Information and Communications Industry of the Xinjiang Uygur Autonomous Region" outlines a comprehensive strategy to bolster the region's digital and economic transformation. Key objectives include fostering balanced development between northern and southern Xinjiang and establishing the region as an economic and cultural hub for Central and West Asia. To achieve these goals, the plan emphasizes the deployment of advanced facilities, expansion of digital application services, construction of new industrial management systems, and reinforcement of network security and emergency support mechanisms.

Recent statistics from the Xinjiang Department of Industry and Information Technology highlight the region's significant strides in this direction. In 2022, the integration of Xinjiang's digital and real economies has accelerated notably. Both digital industrialization and industrial digitization have shown continued progress. This advancement is reflected in the main business income of the digital economy industry, which reached 159 billion yuan, marking an impressive year-on-year increase of 43%.

2.3 In Line with Industrial Development Trends

In January 2022, the State Council of China unveiled the "14th Five-Year Plan for Digital Economy Development," asserting the digital economy as the primary economic form following the agricultural and industrial economies. This Plan outlines eight critical tasks, including the optimization and upgrading of digital infrastructure, the vigorous promotion of industrial digital transformation, the acceleration of digital industrialization, and the enhancement of the digital quality of public services. It sets an ambitious target to increase the contribution of the core industries of the domestic digital economy to the GDP from 7.8% in 2020 to 10% by 2025. Data centers are recognized as vital infrastructure within this framework, playing a significant role in the digital transformation of China's industries and the elevation of public service digitalization [1].

China's commitment to the Internet data center industry is evident through a series of policies and national standards aimed at fostering technological advancement within the sector. In November 2021, key governmental bodies, including the National Development and Reform Commission, the Central Cyberspace Administration, the Ministry of Industry and Information Technology, and the National Energy Administration, collaboratively issued the "Implementation Plan for Green and High-Quality Development." This Plan is part of a broader initiative to meet the nation's carbon peak and carbon neutrality objectives, specifically targeting new infrastructure like data centers and 5G networks. The goal is set for 2025 to substantially enhance the power utilization efficiency of data center operations and increase the utilization of renewable energy. The Plan aims to reduce the average power utilization efficiency of newly built large and ultra-large data centers nationwide to below 1.3, with national hub nodes aiming for below 1.25. Achieving a green low-carbon level of 4A or higher is also part of the target. With these carbon peak and neutrality goals in mind, the trend towards building green and low-carbon data centers is gaining momentum. In the future, exceptional carbon emission metrics are expected to become a key competitive edge for data centers.

3. DATA CENTER INDUSTRY MARKET ANALYSIS

3.1 Global Data Center Industry Development Forecast

The "Data Center White Paper (2022)" released by the China Academy of Information and Communications Technology indicates that the global data center market is experiencing consistent growth, with projected total revenues reaching US\$74.6 billion in 2022. The future landscape of the global data center market is characterized by several key trends:

- i. **Geographical Shift:** The industry is gravitating towards emerging markets in the Asia-Pacific region, which have become significant drivers of industry growth.
- ii. **Value Chain and Competition:** There is an enhancement in the data center value chain, accompanied by intensifying competition. This evolution is expected to fundamentally alter the industry's structure.
- iii. **Infrastructure Challenges:** Traditional data centers are grappling with issues related to structural reliability, energy consumption, and cooling systems. These challenges, stemming from limitations in meeting the demands of expansion and upgrades, are leading to high operational costs and are spurring the adoption of new operational and cooperative models to expedite industrial upgrading.

3.2 Domestic Data Center Industry Development Forecast

The global data center market's steady growth is mirrored in China, which exhibits a particularly high growth rate in this sector. In 2021, the global data center market size exceeded US\$67.9 billion, marking a year-on-year increase of 9.89%. It is anticipated that the market size will reach approximately US\$74.65 billion in 2022, maintaining a stable growth rate. In China, there is a consistent increase in the rack size of data centers, especially those categorized as large or above. With increasing power density in data centers, the average power per rack has also been on the rise. In 2020, around 46% of global data center racks had a power range of 5-9kW per rack, and nearly 30% exceeded 10kW per rack. This uptrend in rack power is closely associated with the widespread deployment of high-density servers [8]. Currently, China is undergoing a rapid digital transformation across various industries. Consequently, the application scenarios for digital infrastructure, particularly data centers, are expanding, heralding wider opportunities and broader development prospects for the data center industry.

3.3 Analysis of the Main Business Models of Data Centers

The data center industry's value chain encompasses hardware equipment providers, software platform providers, basic telecommunications operators, and professional data center service providers. Each type of enterprise occupies a distinct position in the value chain and operates according to varying business models:

- Telecom operators offer comprehensive services for hosting platforms.
- Professional data centers focus primarily on server hosting.
- System integrators deliver specialized data center services.

- ISPs (Internet Service Providers) provide web access services, functioning as significant data center operators [5].

China's data center market has witnessed rapid growth recently, and enterprise operating models are evolving. Basic telecom operators in China leverage high-performance infrastructure and extensive bandwidth resources to offer platform and virtualization services. They combine basic telecommunication services with value-added services to deliver a comprehensive suite of offerings to customers. These operators, catering mainly to large enterprises and government clients, dominate the data center market with scale-oriented business models [7].

Professional data center operators can be categorized into two groups: those concentrating on providing high-quality data center products and services, often transitioning towards cloud computing, and those aggressively developing value-added services in addition to basic data center offerings.

3.4 Analysis of Data Center Business Market Prospects

The digitization of both the domestic internet industry and traditional industries in China has been accelerating rapidly. Advanced technologies and digital tools like big data, cloud computing, artificial intelligence, 5G, autonomous driving, the industrial internet, the metaverse, cloud-native solutions, and digital twins are increasingly becoming integral to everyday life. In this context, data centers have emerged as a critical foundation for the construction and growth of the digital economy. The number of data center racks in China has seen a significant increase, with 4 million racks recorded in 2020, of which large and ultra-large racks constituted over 75% [2].

The development of data centers in China has been swift. The total number has surpassed 400,000, with their annual electricity consumption accounting for 2% of the nation's total electricity usage. However, the Power Usage Effectiveness (PUE) of most data centers is still above 2.2, trailing behind international standards, indicating substantial potential for energy savings. The Ministry of Industry and Information Technology has been proactive in promoting the construction of green data centers, releasing lists of such centers in 2020 and 2021, with the largest number in the internet sector [9].

The data center market is experiencing rapid expansion, propelled by new infrastructure policies and national digital transformation strategies. In 2020, the market size of China's data center business reached 223.87 billion yuan, marking a 43.3% increase from the previous year. The market is projected to exceed 286 billion yuan in 2021 [3].

With growing demand, the construction of data centers of various types and sizes is also increasing. Given their high energy consumption, data centers face challenges such as duplication and over-construction. Therefore, it is crucial to focus on top-level design and overall planning that considers local economic and industrial needs, avoiding blind pursuit of scale. Moreover, improving the utilization rate of data centers and targeting construction based on market demand is essential.

Looking ahead, the construction of data centers is expected to exhibit two major trends. First, data centers will continue to grow in scale. Second, there will be a shift towards edge computing, with infrastructure

moving closer to communities and factories. Consequently, future data center construction will be categorized into edge and centralized types, emphasizing the principle of "larger scale for major centers, smaller and more localized for edge computing."

4. CONCLUSION

In the new era, the digital industry has become paramount. Firstly, there is a need to jointly foster industrial innovation, focusing on developing new domains such as cloud computing, data centers, and big data, and promoting the productization and commercialization of data. Secondly, it's vital to drive technological innovation, enhancing big data collection, storage, processing, and analysis, and advancing in areas like AI applications and the Yuan Universe. Upgrading digital infrastructure and accelerating the development of hardware and software suitable for big data applications are key. Lastly, promoting integrated development and industry integration is crucial. This includes targeting sectors like industry, transportation, logistics, commerce, finance, telecommunications, and clean energy, to facilitate data development and transactions, upgrade industries, integrate big data with public services, and enhance public service capabilities and levels.

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FROM PHYSICAL TO VIRTUAL: THE RISE OF 360 PHOTOGRAPHY & VIRTUAL TOUR AS DISRUPTIVE MARKETING TOOLS IN MALAYSIA'S REAL ESTATE INDUSTRY

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ABSTRACT - "From Physical to Virtual" explores the dynamic shift in Malaysia's real estate industry, spotlighting the rise of 360 photography and virtual tours as game-changing marketing tools. Amidst the backdrop of the COVID-19 pandemic, this study unveils how these virtual reality (VR) strategies have redefined property marketing, with top developers like UEM Sunrise pioneering their use. Highlighting the successful implementation of VR in projects like Solaris Parq, the case study demonstrates VR's potent role in enhancing sales and customer engagement. This concise exploration not only reflects on the technology's immediate impact but also its alignment with global innovation goals, signaling a new era in real estate marketing and a call to action for embracing digital transformation.

Keywords: *Real Estate, 360 Photography, Virtual Tour, Marketing, Virtual Reality*

1.0 INTRODUCTION

In an age where technology rapidly reshapes landscapes and industries, the real estate sector in Malaysia stands at the forefront of a significant digital transformation [1]. The introduction of 360 photography and virtual tours, emerging as key components of virtual reality (VR) strategies, has opened new horizons in the realm of digital marketing [2]. This paradigm shift is not just a leap in technological adoption but a response to changing market dynamics and consumer behaviors, especially in the face of global challenges such as the COVID-19 pandemic [3].

The roots of this technological evolution lie in the broader history and development of virtual reality. VR, once a concept limited to science fiction and high-end research labs, has burgeoned into a versatile tool across various industries. In the realm of real estate, one of VR's most impactful techniques is 360 photography. This immersive approach allows potential buyers to navigate and interact with properties in a comprehensive virtual environment, offering a depth of experience far beyond traditional photographic methods [3].

The onset of the COVID-19 pandemic and the ensuing movement control orders dramatically altered the landscape of real estate sales. Physical visits to sales galleries, a cornerstone of real estate marketing, became severely restricted. In response, many property developers in Malaysia quickly adapted by adopting 360 photography and virtual showrooms. This strategic pivot allowed them to maintain and even enhance sales activities while adhering to new health guidelines and customer preferences for remote interactions.

This case study, “From Physical to Virtual: The Rise of 360 Photography & Virtual Tour as Disruptive Marketing Tools in Malaysia’s Real Estate Industry” dives into this transformative journey. It explores how these advanced VR techniques are not just bridging the gap left by limited physical interaction but also revolutionizing the way properties are marketed and experienced in Malaysia. The study aims to provide an understanding of the emergence, adoption, and impact of these technologies, highlighting their role as disruptive tools in an industry that is rapidly evolving to meet the challenges and opportunities of the digital age.

2.0 LITERATURE REVIEW

The journey of digital transformation in real estate industry is deeply intertwined with the evolution of photography technology. This progression has been marked by significant advancements in both hardware and software, fostering the creation of various imagery techniques. Among these, Virtual Reality Photography (VRP), or 360 Photography, stands as a notable innovation, capturing 360-degree images with a borderless and seamless effect. This technique, emerging from the broader spectrum of virtual reality (VR) technology, has redefined the norms of visual representation and interaction in the real estate sector [4].

The roots of VR can be traced back to the late 1960s, marking the early computerized inception of a technology that was once confined to the realms of science fiction and high-end research. Over the years, VR has evolved into a versatile and accessible tool, finding its place across various industries, including real estate. 360 Photography, as a form of VRP, offers an immersive approach that allows potential buyers to navigate and interact within virtual environments, significantly enhancing the depth and quality of their experience beyond traditional photographic methods [5].

In the realm of real estate marketing, the application of 360 photography in web-based virtual tours has become increasingly prevalent. These virtual tours serve as innovative tools to introduce, promote, and bring to life various locations, places, or spaces. The commercialization of photography, coupled with the burgeoning online virtual environment, has enabled marketers to utilize virtual image technology effectively. This approach engages potential clients as active participants, allowing them to experience properties or destinations remotely. According to the Oxford English Dictionary, virtual reality is defined as a “computer-generated simulation of a three-dimensional image that can be interacted with in a seemingly real or physical way by a person using special electronic equipment.” Thus, 360 photography in virtual tours creates an interactive space where viewers can control their point of view, freely navigating in any direction within the space [5].

The trend of using virtual tours in real estate gained significant traction in 2017, becoming a popular strategy among destination marketing campaigns. This period saw creative applications of VR by global brands, with marketers recognizing the potential positive spillover of VR experiences to enhance brand perception. The effectiveness of virtual reality photography as a supportive marketing tool in the real estate market becomes evident in this context. It is not merely a technological advancement but a strategic tool that shapes customer perceptions and decision-making processes [6][7].

Research in marketing has extensively explored the concept of mental imagery, also known as the perceptual representation of nonverbal information in memory. This mechanism plays a crucial role in the processing of marketing stimuli, with VRP serving as an influential factor in creating vivid mental images for potential buyers. Studies have shown that this form of imagery is instrumental in enhancing the impact of marketing strategies, particularly in the real estate sector, where visualization plays a key role in customer engagement [7].

3.0 CURRENT CONTEXT IN MALAYSIA: VR IN REAL ESTATE

The real estate industry in Malaysia has witnessed a significant shift towards digitalization, with the adoption of Virtual Reality (VR) technologies becoming increasingly prevalent. This trend is particularly evident among the top property developers in the country, who are leveraging 360 photography and virtual showrooms to enhance their marketing strategies and customer engagement.

Adoption by Top Developers	Beyond New Developments
<ul style="list-style-type: none"> Leading developers embracing VR: The top property developers in Malaysia based on revenue, including Sunway Group, SP Setia, IJM Land, Sime Darby Property, Gamuda Land, IOI Properties Group, Mah Sing Group, Eco World Development Group, UEM Sunrise, and IGB Berhad, have all implemented 360 photography and virtual showroom technologies in some or all of their projects. Strategic Implementation: These developers are using VR to offer prospective buyers immersive virtual tours of their properties, providing a realistic sense of space and design even before the physical visit. 	<ul style="list-style-type: none"> Expanding to Sub-sale Properties: The deployment of VR technologies is not limited to developers selling brand-new properties alone. PropertyGuru, Southeast Asia's leading property technology company, with a monthly user base of over 52 million and more than 3.3 million real estate listings, has introduced virtual tour features for sub-sale property listings. This marks a significant expansion of VR applications beyond new property developments, showcasing its versatility and wide-reaching impact in the real estate market.

Table 1: The Adoption of VR Technologies in Malaysia's Real Estate Industry
[8][9][10][11][12][13][14][15][16][17]

Spotlight on UEM Sunrise

- **UEM Sunrise's Pioneering VR Implementation:** A notable example of VR implementation in Malaysia's real estate sector is UEM Sunrise's Solaris Parq project. As the first developer in Malaysia to launch VR for a project, UEM Sunrise offered potential buyers a unique opportunity to experience the concept of luxurious park-living through a virtual reality booth during the launch [18].
- **Impact on Sales and Market Position:** The Solaris Parq project, with its innovative VR experience, made a significant contribution to UEM Sunrise's sales in 2017. It was a key factor that helped the company exceed its sales target of RM1.2 billion for the fiscal year, demonstrating the effective use of VR in enhancing property sales and marketing [9].

4.0 CONCLUSION

In an era where innovation is paramount, the Malaysian real estate industry has transformed with the trend of digitalization. This case study has highlighted the significant role that 360 photography and virtual tours, as facets of virtual reality (VR), play as disruptive marketing tools in the sector. The high adoption rate of these technologies by leading developers and the success story of UEM Sunrise's Solaris Parq project are testaments to the growing importance and effectiveness of VR in real estate marketing. The real estate industry is a crucial contributor to Malaysia's economy, and its continuous growth hinges on the ability to adapt and innovate and shown alignment with the objectives of the United Nations Sustainable Development Goal 9 (SGD 9: Industry, Innovation, and Infrastructure). The transition from physical showrooms to hybrid which involve virtual platforms is not merely a trend but a strategic evolution. It's a response to market demands, technological advancements, and unforeseen challenges like the COVID-19 pandemic. This shift has enabled developers to maintain, and in some cases enhance, their sales activities in times when traditional methods were severely restricted.

The success stories, particularly the Solaris Parq project, illustrate how VR can be more than just a marketing gimmick. It's powerful tool that enhances customer experience, broadens market reach, and provides a competitive edge in an increasingly digital world. UEM Sunrise's pioneering use of VR for Solaris Parq has further strengthened its marketing strategy, leading to its exceptional sales performance, sets a benchmark for the industry. Looking ahead, the potential of VR in real estate marketing is vast. Future research could explore the efficiency of different VR techniques and identify the most cost-effective options for real estate marketing in Malaysia. As technology evolves, so too will the ways in which real estate properties are marketed and sold. It's important for industry players to stay abreast of these changes, continually innovating to meet the needs of dynamics market.

In conclusion, the rise of 360 photography and virtual tours in Malaysia's real estate industry marks a significant shift in marketing strategies. This case study serves as a blueprint for understanding and leveraging these technologies. As the industry moves forward, embracing these digital tools will be crucial in defining the success and sustainability of real estate ventures in Malaysia and beyond.

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ANALYZING THE KEY FACTORS OF COST OVERRUNS IN LARGE-SCALE CONSTRUCTION PROJECTS IN MALAYSIA

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ABSTRACT - This study investigates the significant factors causing cost overruns in large construction projects in Malaysia. Through a mixed-methods approach, incorporating both quantitative surveys and qualitative analyses, this research highlights the multifaceted nature of cost overruns in the construction industry. The survey, targeting industry professionals, identifies frequent design changes, miscommunication between parties, and labor-related issues as the primary contributors to cost overruns. The findings align with existing literature, emphasizing persistent challenges in project management and cost estimation. This study also explores the broader impact of cost overruns on clients and contractors, including delays in facility usage and financial repercussions. The results underline the necessity for adaptable project management strategies, effective communication channels, and skilled labor utilization in mitigating these overruns. The research contributes to a deeper understanding of cost management challenges in the Malaysian construction sector and provides a foundation for developing more efficient project management practices.

Keywords: Construction Project Management, Cost Overruns, Malaysian Construction Industry, Project Planning and Control, Stakeholder Communication, Labor Management in Construction, Design Change Impact

1. INTRODUCTION

1.1 Background of the Study

The construction industry, a cornerstone of economic and social development, is frequently challenged by critical issues such as delays, low productivity, poor quality, and notably, cost overruns. Globally, cost overrun stands as a significant concern, affecting not only the stakeholders involved in construction projects but also the broader economy. This is particularly evident in the construction sector's pivotal role in fostering growth in any country. In Malaysia, the construction industry has experienced rapid growth, marked by substantial investments. Under the 10th Malaysian Plan, a budget of RM230 billion was allocated for construction development, highlighting the sector's importance. Despite this investment, a prevalent issue in Malaysian construction projects is their inability to adhere to initial cost estimates and timelines. Research shows a stark contrast in budget adherence between public and private sector projects. For instance, a study encompassing 308 public and 51 private projects revealed only 46.8% of public

sector projects and 37.2% of private sector projects were completed within their original budget. This scenario underscores the need for a thorough investigation into the factors contributing to cost overruns in Malaysia's construction projects.

1.2 Problem Statement

Cost overrun in construction projects is a severe problem impacting both developed and developing countries. The issue extends beyond poor cost management, necessitating an in-depth exploration of the underlying causes and effective strategies for improvement. This challenge is evident in the Malaysian context, where factors such as inaccurate cost estimation, improper planning, lack of experience, and poor project management contribute to widespread cost overruns. Moreover, other elements like fluctuating material prices and unforeseen site conditions further compound the issue. Given the gravity of these challenges, it is crucial to identify and address the major contributors to cost overrun comprehensively.

1.3 Objective of the Study

This study aims to identify and analyze the significant factors causing cost overruns in large construction projects in Malaysia. To achieve this aim, the study sets out the following objectives:

- To identify the factors contributing to cost overruns in large construction projects in Malaysia.
- To ascertain the primary factor leading to cost overruns in these projects.

1.4 Scope of the Study

While cost overruns are a global issue in construction projects, this study narrows its focus to large construction projects in Malaysia. The study period spans from 2012 to 2022, ensuring the data and information gathered are current and relevant. Furthermore, the study involves conducting a survey through Google Forms targeting 30 professionals in Johor Bahru, Johor. This survey aims to gather opinions from key players in the construction industry, including clients, quantity surveyors, and contractors, to pinpoint the main factors contributing to cost overruns in the Malaysian context.

2. LITERATURE REVIEW

The phenomenon of cost overruns in construction projects is a multifaceted issue that has been extensively studied globally. This literature review delves into various research findings and theoretical perspectives to provide a comprehensive understanding of the factors contributing to cost overruns, specifically in large-scale construction projects in Malaysia.

2.1 Impact of Cost Overruns in Construction Projects

Cost overruns in construction projects are a critical issue with far-reaching consequences for all project parties. These overruns can lead to projects becoming defaulted, which significantly impacts clients and stakeholders. Clients suffer delays in accessing facilities and may incur additional costs for consultation and design revisions. For contractors, the repercussions include a loss of reputation and the potential to be confined to prolonged project commitments, often to the detriment of other opportunities [1].

2.2 The Significance of Cost in Project Management

Cost is a primary consideration throughout the life cycle of project management and is pivotal to the success of any project. Despite its acknowledged importance, completing projects within the estimated cost is uncommon (Azhar et al., 2008). This discrepancy highlights a widespread issue within the industry, emphasizing the need for better cost management and estimation strategies [2].

2.3 Prevalence of Cost Overrun Worldwide

Cost overrun is a globally recognized phenomenon in the construction industry, underlining its criticality and the necessity for more in-depth studies to address and mitigate this issue (Angelo and Reina, 2002). This widespread prevalence suggests that the factors leading to cost overruns are complex and varied, warranting comprehensive investigation and analysis [3].

2.4 Definition and Causes of Cost Overruns

A "cost overrun" refers to an unanticipated increase in the project budget, leading to a higher overall project cost (Xiangyu Wang, 2022). It is essential to differentiate cost overruns from cost escalations, which are expected increases due to factors such as inflation. The COVID-19 pandemic has vividly illustrated the effect of external factors on construction costs, with significant increases in the prices of building materials [4][5][6].

Three primary factors can lead to cost overruns:

- **Economic Factors:** Errors in project budgeting or scope.
- **Technical Factors:** Inaccurate estimations or data collection.
- **Psychological Factors:** Scope creep or reduced commitment levels.

2.5 Detailed Analysis of Cost Overrun Factors

Previous studies employed various methodological approaches to investigate cost overruns. Questionnaires, case studies, and empirical data analysis are commonly used methods. These studies provide a robust framework for understanding the multifaceted nature of cost overruns and offer insights into effective research methodologies.

3. METHODOLOGY

This section outlines the research methodology adopted for this study, focusing on identifying and analyzing the significant factors causing cost overruns in large construction projects in Malaysia. The methodology is designed to ensure a comprehensive understanding of the issue and to derive meaningful conclusions based on empirical data.

Table 1: Overview of Research Methodology

Section	Description	Details
Research Design	<ul style="list-style-type: none"> Mixed-methods approach integrating quantitative and qualitative research. 	<ul style="list-style-type: none"> Aimed to understand factors contributing to cost overruns and capture nuanced stakeholder perspectives.
Data Collection	<ul style="list-style-type: none"> Questionnaire Survey Literature Review 	<ul style="list-style-type: none"> Targeting professionals in large construction projects in Malaysia, conducted via Google Forms. Academic journals, industry reports, case studies (2012-2022).
Research Instrument	<ul style="list-style-type: none"> Questionnaire Design Reliability and Validity 	<ul style="list-style-type: none"> Multiple-choice and Likert-scale questions. Pre-tested with industry professionals for refinement.
Data Analysis	<ul style="list-style-type: none"> Quantitative Analysis Qualitative Analysis 	<ul style="list-style-type: none"> Statistical analysis of questionnaire responses. Thematic analysis of qualitative data and literature review.
Ethical Considerations	<ul style="list-style-type: none"> Ensuring confidentiality and anonymity of respondents. Informed consent obtained. 	<ul style="list-style-type: none"> Adherence to ethical research standards throughout the study.

4. RESULTS

The survey conducted among professionals in the Malaysian construction industry yielded significant insights into the factors contributing to cost overruns in large construction projects. The responses have been quantitatively analyzed, and the findings are summarized in the table below. This table highlights the key factors identified, along with their mean scores, which indicate their perceived impact on cost overruns. Additionally, respondents provided valuable insights into alternative factors through open-ended questions.

Table 2: Summary of Survey Results on Factors Causing Cost Overruns

Factor	Mean Score	Additional Insights
Frequent Design Changes During Construction Phase	3.73	Identified as the most significant factor.
Miscommunication Between Parties in Construction Industry	3.70	Highlights communication challenges in project management.
Labour-Related Factors	3.70	Emphasizes the impact of labor management on project costs.
Poor Cost Estimation	3.60	Points to the need for accurate financial planning.
Lack of Contractor's Experience	3.50	Underlines the importance of contractor expertise.
Poor Material Management	3.43	Reflects challenges in handling construction materials.
Poor Tendering Documents	3.13	Suggests issues in initial project documentation and planning.
Payment Delay	3.07	Indicates financial delays' impact on project timelines.
Factor	Mean Score	Additional Insights

Table 3: Additional Factors Identified by Respondents

Alternative Factor	Details/Comments
Inaccurate Quantity Takeoff	Highlights errors in initial project measurements and estimations.
Poor Project Management by Contractors	Points to the need for improved managerial skills in overseeing projects.
Fluctuations in Material Prices	Indicates the impact of market volatility on project costs.
Changes in Government Policies	Reflects the influence of regulatory changes on project execution.
Unforeseen Site Conditions	Emphasizes the impact of unexpected issues during construction.
Alternative Factor	Details/Comments
Inaccurate Quantity Takeoff	Highlights errors in initial project measurements and estimations.

In summary, the survey findings highlight several critical factors contributing to cost overruns in large construction projects in Malaysia, with frequent design changes, miscommunication, and labor-related issues being the most significant. These results provide a foundation for a more nuanced understanding of the challenges in managing construction project costs. The insights gained from this study pave the way for an in-depth discussion on the implications of these findings and their relevance to the construction industry in Malaysia and beyond.

5. DISCUSSION

5.1 Interpretation and Contextualization of Results

The predominant factor, frequent design changes, highlights the dynamic nature of construction projects and suggests a need for more adaptable project management strategies. Miscommunication, identified as another critical factor, underscores the importance of effective communication channels in large-scale projects. The emphasis on labor-related issues points to the need for efficient workforce management and skilled labor availability.

5.2 Comparison with Existing Literature

These findings align with previous research, such as the work of Ali and Kamaruzzaman (2010), which identified poor project management and inaccurate cost estimation as key contributors to cost overruns. This alignment not only validates the current study but also underscores the ongoing challenges in managing large construction projects.

5.3 The Way Forward: Addressing the Challenges

The study's results point towards the need for enhanced planning and execution strategies in the construction industry. Effective communication, flexible management approaches, and skilled workforce utilization are essential components for mitigating cost overruns. Furthermore, the additional factors raised by respondents, like fluctuations in material prices and government policy changes, suggest areas requiring further attention and adaptation in project management practices.

6. CONCLUSION

This study has comprehensively explored the significant factors causing cost overruns in large construction projects in Malaysia. The key findings reveal that frequent design changes, miscommunication, and labor-related issues are the most impactful factors. These results not only align with existing literature but also provide deeper insights into the specific challenges faced in the Malaysian construction industry. The study underscores the importance of adaptable project management, effective communication strategies, and proficient labor management in mitigating cost overruns. While this research provides valuable insights into the Malaysian context, it also lays the groundwork for further studies that could explore these issues in different regional contexts or under varying construction environments.

In conclusion, addressing the identified factors effectively could lead to more successful project outcomes and significantly reduce the prevalence of cost overruns in construction projects. This study serves as a steppingstone for industry stakeholders to reevaluate and enhance their project management strategies, ultimately contributing to the growth and efficiency of the construction sector in Malaysia and beyond.

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ADOPTING THE ACCRUAL BASIS IN THE GOVERNMENT ACCOUNTING SYSTEM APPLIED STUDY AT THE COLLEGE OF SCIENCE AT AL-MUSTANSIRIYA UNIVERSITY

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ABSTRACT- Given the deficiencies in the government accounting system resulting from the use of the Cash Basis, the research aimed to address these deficiencies by assuming that adopting the Accrual Basis in recording financial transactions would provide data that truly reflects the financial position and outcome measurement accounts of government units. To test this assumption, the College of Science/Al-Mustansiriya University was selected as a research sample, and a proposed model for applying the Accrual Basis was developed. The results of the research showed that the Accrual Basis must be fully adopted in the government accounting system in order to provide useful information that can be used for decision-making, performance evaluation, and effective public fund control. Therefore, the research recommended to, treat fixed assets as capital disbursements and calculate depreciation on them, which will provide greater control over these assets. And to record expenses and revenues as soon as they are incurred or earned, which will provide data that truly reflects the financial position and outcome measurement accounts. And rotate all debit and credit account balances from year to year, which will provide greater control over these balances and provide data that is useful for monitoring, planning, and decision-making.

Keywords: *government accounting system, accrual basis, calculating depreciation, proving expenses and rotating balances.*

1.0 INTRODUCTION

As a result of the significant increase in the activities and spending of most countries in the world, due to economic and social development, the need for accounting systems that can meet the demands of financial management has become imperative. Therefore, the accounting function has become an urgent and essential requirement, and the existence of a government accounting system capable of documenting all financial transactions is essential to provide reliable information that can be relied upon for effective control, good performance, accurate work, and accountability [1]. Accounting measurement methods are the rules that govern when to recognize revenues, expenses, assets, and liabilities in the accounting records and financial statements. They are used to determine the point in time at which government units measure and record their financial position and performance. The accounting basis is the specific method that a government unit's accounting system adopts to determine the balance of any account before closing it in the final accounts [2]. So, accounting bases are a set of accounting rules that govern the determination of account balances that are closed to the outcome measurement account in order to produce financial statements that reflect the true results of the government unit's financial activities over a defined period of

time. So, the government's choice of accounting base depends on a number of factors, including the operational objectives of the government unit, the economic, social, and legal environment in which it operates, the level and type of accountability required the objectives of the financial statements, and the needs of users of financial data and reports [3].

2.0 LITERATURE REVIEW

[4] found that the cash basis of accounting is no longer appropriate for municipal accounting in Gaza Strip municipalities. Most respondents agreed, and desired to replace it with the modified cash basis due to the perceived weakness of the accounting information produced under the cash basis and the positive aspects of the information produced under the modified cash basis. The study concluded that the modified cash basis should be adopted as a first step and implemented gradually, provided that it includes a set of reports and financial statements that enable municipalities to use this financial and non-financial accounting information for scientific and informed decision-making. [5] reviewed the role of accounting in budget reform for emerging economies that want to adopt OECD performance budgeting reforms. He found that many OECD members have switched from cash basis to accrual basis accounting. However, converting to accrual basis can be expensive. Countries with cash-based systems that want to improve and develop them can meet performance-based budgeting requirements by following the modified accrual basis. Countries with sound and reliable cash-based systems can adopt accrual-based accounting and international reporting requirements as required by the Government Finance Statistics Manual [6]. And also, the international federation of accountant's public sector committee has identified five accounting foundations:

1. **Cash Basis:** The cash basis of accounting reflects the government unit's cash inflows and outflows during the fiscal year, without considering the rights and obligations that arise from these transactions. Under this basis, transactions and other events are recorded when cash is received or paid. As a result, financial statements prepared under the cash basis report only the cash that was received and disbursed during the period, as well as the cash balance at the beginning and end of the period [4]. Therefore, the cash basis of accounting can be said it is easy to apply, but it does not provide a complete and accurate picture of the government unit's financial position and performance. It is not possible to use the cash basis to implement the budget effectively, assess the government unit's true financial position, or measure the results of its activities accurately. Furthermore, the cash basis does not facilitate accurate comparisons between the services provided, the projects completed, and the expenses paid during the fiscal year [7].
2. **Modified Cash Basis:** The modified cash basis of accounting is a hybrid accounting method that combines elements of the cash basis and the accrual basis. Under the modified cash basis, received cash includes both cash that has actually been received and cash that is expected to be collected in the near future (e.g., within the next month). Cash paid includes both cash that has actually been paid and cash that is expected to be paid in the near future (e.g., within the next month) [8]. The modified cash basis is more accurate than the cash basis, because it considers the expected future collection of receivables and payment of payables. However, it is less accurate than the accrual basis, because it does not recognize all revenues and expenses as they are incurred or earned. The modified cash basis is often used by small businesses and nonprofit organizations, because it is relatively simple to implement and maintain.

3. **Obligation Basis:** It charges government units for expenses that are incurred or committed during the fiscal year, regardless of whether the expenses are actually paid in cash during the fiscal year. This basis is applied to expenses only and is intended to control the budget, rather than to provide a comprehensive financial picture [9]. The advantages of the This basis includes that, it helps to protect the rights of third parties, such as contractors who have provided goods or services to the government, and it also provides information about the government unit's progress in implementing its budget obligations. However, this basis has some limitations as it does not provide effective indicators for monitoring the cash flow of the public treasury, and it also does not allow managers and accountants to create general reserves at the end of the year and treat them as final expenses [10]. Despite these limitations, the obligation basis is sometimes used by government units to control their budgets and to ensure that they are meeting their financial obligations.
4. **Modified Accrual Basis:** This basis is a hybrid accounting method that is similar to the accrual basis, but it does not recognize all of the same elements. For example, the modified accrual basis may not recognize certain types of receivables or payables, or it may recognize them at a different time than the accrual basis. It also differs from the cash basis and the modified cash basis by recognizing more elements of the government unit's financial position and performance. This basis measures financial resources and their changes [11].
5. **Accrual Basis:** The International Federation of Accountants (IFAC-PSC) defines the accrual basis of accounting as the accounting basis that reports the government unit's economic resources and obligations, and their changes. Under this basis, financial effects of transactions and events are recognized and recorded in the period in which they occur, regardless of when cash is received or paid [12]. As a result, the accrual basis requires making necessary adjustments to reflect the government unit's spending and cash collection activities, as well as the rights and obligations that arise during the fiscal year. When preparing the government unit's financial statements, the necessary mathematical adjustments are made to determine the revenues and expenses of each fiscal year and to charge them accordingly [13].

By following the accrual basis of accounting in the government accounting system, government units can provide data that more accurately reflects their financial position and operating performance. This is achieved by calculating depreciation on fixed assets, differentiating between revenue and capital disbursements, and recording disbursements and revenues when they are incurred or earned. Once due, revenue and disbursement accounts are closed to the outcome measurement account, and all debit and credit account balances are rolled over to the next fiscal year [1]. Iraq's government accounting system is mostly cash-based, with some accrual and obligation elements. The amended Public Accounting Principles Law No. 28 of 1940 requires modified cash accounting for revenues. This means some exceptions to cash accounting, as outlined in Article Eleven, paragraphs 1 and 3. Paragraph 2 of the same article authorizes the Minister of Finance to use accrual accounting for certain fiscal year revenues and the public treasury's share of socialist sector company profits, as these are major budget funding sources with significant revenue impact [14].

The Cash Basis is used to record expenses, as per Article Twelve, paragraphs (1) and (3), except for salaries, which are treated on the accrual basis, as per paragraph (2) of Article Twelve, and account for 50% of current budget disbursements. Articles (30), (31), and (32) of the same law define standards for monitoring the proper application of the theory of allocated funds under the Cash Basis. Iraq's government accounting system is deficient in its use of the Cash Basis, with some exceptions. Especially in light of current developments, due to the Cash Basis is no longer appropriate for government accounting because

it only reflects spending and cash collection during the fiscal year, ignoring the government unit's rights and obligations. This results in inaccurate accounts, preventing accurate conclusions about budget implementation, financial position, and operating results [15]. The Cash Basis also prevents accurate comparisons between services provided, projects completed, and expenses actually paid, by ignoring rights and obligations owed to or owed by the public treasury that were not collected or spent during the fiscal year.

By following the accrual basis in recording financial operations, government units can provide accurate data on their financial position and performance. This is achieved by monitoring fixed asset depreciation, differentiating revenue and capital expenditures, and recording revenues and expenditures when incurred or earned, and closing revenue and expense accounts to measure the result, and rolling over all balances to the next fiscal year [16]. This research came as a complement to previous studies that identified the shortcomings of the cash basis: unreliable data for planning and control, and incompatibility with modern methods like performance budgeting. Previous studies also identified the advantages of the accrual basis, which provides truthful and reliable data for planning and control. This research proposes a model for transitioning to the accrual basis in the government accounting system.

The research aimed to apply the Accrual Basis in recording financial operations in government service units, due to the deficiencies of the Cash Basis. To achieve this, the research assumed that adopting the Accrual Basis would provide accurate data on the financial position and performance of government units that apply the government accounting system. The College of Science at Al-Mustansiriya University was selected as a sample for the research to apply the Accrual Basis to the accounts for the year 2014. A sample of documents was selected and recorded according to the Accrual Basis, and a partial budget was prepared to show the information that the government accounting system would provide by applying the Accrual Basis [17].

3.0 MATERIALS AND METHODS

This research was applied at the College of Science/Al-Mustansiriya University in Baghdad, Iraq. The basis used in this college is the decentralized government accounting system, which is the modified Cash Basis required by the repealed Public Accounting Principles Law No. (28) of 1940, as amended in Article (11) and (12) thereof. This basis carries a lot of deficiencies in recording financial transactions, and the item of fixed assets is the item of disbursement most affected by this basis (accrual), as according to the Cash Basis it is considered a final expense that is closed in the accounts measuring the result and its depreciation is not calculated by dividing its cost by the years of use. This procedure weakens supervision and control over it, on the one hand, and on the other hand, the amount of money invested in this item is very large, and any waste or loss in it leads to a large waste of public money, but when applying the Accrual Basis, fixed assets will be treated as a capital expense, and depreciation will be calculated on it. Therefore, it will provide high control over these assets, and all items of expenses and revenues are affected by this basis. Following the Accrual Basis will provide information that gives a true picture of the financial position and the accounts measuring the result. In order to overcome the deficiencies in the government accounting system due to the use of the modified Cash Basis, we will switch to using the Accrual Basis according to a proposed model (Figure 1).

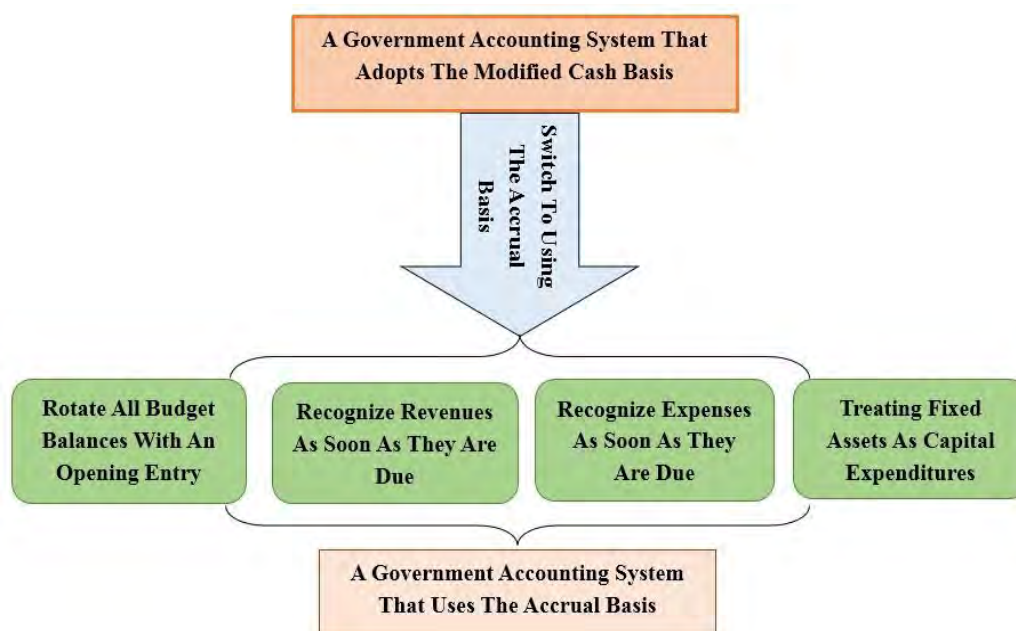


Figure 1: The proposed model for converting to the accrual basis

4.0 RESULTS AND ANALYSIS

There will be switching from the modified Cash Basis adopted in the government accounting system to using the Accrual Basis in recording financial operations. Fixed assets, expenses, and revenues due, paid and received in advance will be treated under the Accrual Basis. Regarding depreciations, the straight-line method will be followed in calculating depreciation and recording it according to the direct method, due to the ease of this method in calculating the depreciation value and showing the assets at book value. As for the depreciation rates, it will depend on the depreciation rates mentioned in the Unified Accounting System Manual issued by the Bureau of Control. Finance for the year 2011 in Chapter Six, because the centrally funded government units acquire fixed assets from the same markets from which they acquire the self-financed economic units that apply the unified accounting system in table 1.

Table 1. Assets depreciation rates

Fixed Assets	Annual Extinction Rates
Residential Buildings	3%
Non-Residential Buildings	5%
Saloon Cars	10%
Load Cars / Lorries	12.5%
Work Cars	10%
Motorcycles	25%
Wooden Furniture	10%
Metal Furniture	10%

Other Furniture	10%
Machines	10%
Devices	10%
Reproduction Devices	20%
Communication Machines	25%
Electronic Computers	15%
Weapons and Equipment	5%

Source: (Unified Accounting System Guide, 2011) Adapted

Accounting treatment of fixed assets:

- 1- When the asset is acquired, there are two cases:
 - a. Obtaining assets through purchase.
 - b. Obtaining assets through grants.
- 2- When maintaining an asset, there are two types of expenses:
 - a. Revenue expenses, which are expenses that do not extend the life of the asset.
 - b. Capital disbursements, which are expenses that increase the life of the asset and are capitalized at the expense of the asset itself.
- 3- When dispensing with the fixed asset, there are two cases:
 - a. When the asset is sold at a profit or loss.
 - b. When dispensing with the fixed asset through the gift.
- 4- At the end of the year, depreciation is calculated on the fixed asset, and it is recorded according to the direct method, and according to the depreciation rates that were previously determined. As for the fixed assets that are currently in the government unit, a specialized committee is formed to work in coordination with the Annual Assets Inventory Committee, where it estimates the remaining life of those assets, calculates their costs, and enters them in the records after matching with the Accounting Register/13 and calculating the depreciation on them, based on the depreciation rates that were determined previously. These assets are recognizing after estimating their cost and remaining life through two entries as follows:
 - a. The first entry is to cancel the corresponding entry for the asset whose cost has been estimated.
 - b. The second entry is assets recognize whose costs have been estimated.

It should be noted that the revenues of previous years must be generated to prove the value of the fixed assets that currently exist, because these assets were purchased in previous years and at the expense of expenses and thus contributed to the increase in the deficit and therefore must be calculated on the revenues of previous years to reduce the value of the accumulated deficit at the remaining cost of the life of the asset and divide it over years. According to the Accrual Basis, expenses are recognized as they become due, regardless of the date of payment, as follows: a- When there are due expenses that have not yet been paid, an entry is registered. b- When there are expenses paid in advance, an entry is registered.

According to the Accrual Basis, revenues are recognized as soon as they are due, regardless of the date of receipt, as follows: a- When there are due revenues, an entry is registered. b- When there are revenues received in advance, an entry is registered.

By following the previous accrual-based accounting treatments, it is possible to provide accurate and true data about the financial position and calculate the result, and this provides the possibility of making appropriate decisions, sound planning, and effective control. Applying the Accrual Basis requires rotating all budget balances into an opening entry to prove the true financial position of the government unit, by organizing an opening entry at the beginning of the year that records on the debit side all debit balances from the previous year's budget, and on the credit side that records all credit balances as well, based on the previous year's budget.

A sample of documents (selected sample) was chosen for disbursement on the fixed assets account and the asset maintenance account for the year 2014, due to the difficulty of using all the documents organized during the year due to the large number of these documents. Also, choosing one of the months of the year to use its data in applying the proposed model does not provide complete operation. For the proposed government accounting system, this is because the first month does not include disbursement to the fixed assets account, and if one of the following months is chosen, it will not provide the possibility of entering the opening entry. Therefore, a sample of documents was chosen and it was assumed that these documents were organized in the first month of the year. It provides the possibility of activating the proposed model and proving the value of fixed assets, as (4) documents were chosen for disbursement on the fixed assets account and (4) documents for disbursement on the fixed assets maintenance account, as the following table shows:

Table 2. Sample of selected documents

No.	Details	History	The Document		Transaction amount (Iraqi Dinar)
			Type	Number	
1	Wooden furniture		Disbursement	109	100000
2	Metal furniture		Entry	46	2300000
3	other furniture	2/2/2014	Entry	88	370000
4	Devices	17/3/2014	Disbursement	500	1750000
		24/3/2014			
		8/4/2014			
5	Equipment maintenance	16/1/2014	Disbursement	20	400000
6	car maintenance	2/2/2014	Disbursement	113	46500
7	Electrical Maintenance	16/2/2014	Disbursement	185	52500
8	Furniture maintenance	13/4/2014	Disbursement	536	400000

This sample of documents will be used in addition to the documents that will be prepared by the researcher to explain how to register according to the entitlement basis, and then prepare the partial budget for the first month of 2014 as follows:

The opening entry for the year 2014 is organized according to the Accrual Basis, as the opening entry according to the Cash Basis does not rotate all the balances of the financial position (balance sheet accounts) except for the cash account, so the debit side of it is the bank account and the fund, if any (and classified under the cash account 1-3) The credit side is the account of the revolving cash balance (and classified within the cash credit accounts as cash 4-1-2) to prove the cash balance at the beginning of the fiscal year. As for the opening entry according to the Accrual Basis, according to it, all the balances of the financial position will be transferred to the next year, as the opening entry for the year 2014 will be

organized according to the Accrual Basis, and the opening entry prepared on the Cash Basis will not be relied upon above. And the balances of the opening entry represent the balances in the consolidation register in the field of the rounded final balance for the year following 2013, since this record rotates all balances based on the trial balance. Where the balances can be rotated by organizing the opening entry for the year 2014 according to the Accrual Basis based on the balances of the unification register for the year 2013 according to the entry document, which bears the number (1), so to organize the opening entry according to the Accrual Basis, three treatments must be done, which are (establishing fixed assets and canceling the corresponding entries, Closing the results measurement accounts (expenditures and revenues), and canceling the revolving cash balance account) as follows:

The fixed assets must be recorded in the records and the corresponding accounts must be cancelled, in accordance with what is required by the Accrual Basis. This will be done according to two entries: the first is to cancel the recording of the opposing accounts, and the second is to prove the fixed assets, where the fixed assets will be recorded at the expense of previous years' revenues, since these assets, when acquired, were considered a final expense. It was closed in the calculations measuring the outcome and contributed to increasing the value of the deficit. To prove fixed assets, a committee of specialists is formed that works in coordination with the annual inventory committee to estimate the remaining life of the assets in the possession of the government unit and estimate their book value based on the depreciation rates, and the difference between the new book value and the historical cost of the asset. It represents the extinction value of previous years. An entry is organized to cancel it from the value of assets and at the expense of previous years' expenses, as follows:

- a. Cancellation of corresponding entries: A registration document is drawn up to cancel the corresponding entries and takes the number (2).
- b. Recording fixed assets: Entry No. (3) is organized to prove the value of the assets and calculate the revenues of previous years.
- c. Proving the depreciation value for previous years: A committee of specialists is formed that works in coordination with the annual inventory committee to estimate the remaining life of the asset, the book value, and depreciation for previous years, and based on the depreciation rates that were specified in (3-3-1), where the registration is organized. No. (4) to prove the expiration value for previous years. Where the balance of revenues is closed at an amount of (6015093220) dinars, and the total balance of revenues rounded in the opening entry No. (1) represents an amount of (698473595) dinars, and the balance of previous years' revenues fixed in entry No. (3) is an amount of (5316619625) dinars, while expenditures are closed at an amount of (139099738338) Dinars, and the total balance of expenditures rounded in the opening entry represents an amount of (138569021901) dinars, and the balance of expenses of previous years fixed in entry No. (4) (530716437) dinars. Expenses and revenues are closed as follows:
- d. Closing the Revenue Account: Revenues are closed in the result accounts by organizing entry document No. (5)
- e. Closing expenses: Expenses are closed in the result measurement accounts by organizing entry document No. (6).

From the two entries above, extract the balance of the result measurement account (which represents the difference between the debit balance and the credit balance of the result measurement account), which represents an accumulated deficit of (133084645118) dinars. As the opening entry according to the Cash Basis requires the rounding of the cash account only, so the rounded cash balance account is used to prove the cash balance at the beginning of the year, and to cancel this account, we close the accumulated balance of the rounded cash balance account until the year 2013 with the balance of the cash account accumulated until 2013 and the difference between them represents the cash balance that will

circulate for the year 2014. This is done by organizing entry document No. (7) showing that the cash account balance at the beginning of 2014 is (352,296,212) dinars, which represents the difference between the cash balance in entry No. (1) and the cash balance in entry No. (7). After we have confirmed the opening entry and processed the accounts according to what is required to apply the Accrual Basis, we are now registering the documents according to the Accrual Basis, represented by the documents that were selected according to the selected sample (8 documents), and as follows (wooden furniture, metal furniture, devices, other furniture, Furniture maintenance, car maintenance, work, equipment maintenance, electrical maintenance, closing the expense account for the current year).

After we have rounded up all the account balances according to the opening entry and adjusted it according to the Accrual Basis and recorded the selected sample documents as well according to the Accrual Basis, the result measurement account and the financial position statement will be prepared to show the information provided by the government accounting system applied on the Accrual Basis. Before preparing the result measurement account and the statement of financial position, it is necessary to know the account balances, as from the reality of the previously established documents, the account balances can be extracted, as the table 3.

Table 3. Extracted account balances.

Account Name	The Movement		Balance	
	Debtor	Creditor	Debtor	Creditor
Current Expenditure Bank	2606438696	2259561482	346877212	
Expenses	139100637338	139100637338	0	
Excessive Exchange Creditors	372093746		372093746	
Buildings	27015000	13912725	13102275	
Office Furniture and Equipment	8821094550	4849319502		
Other Assets	38774200	21122310	17651890	
Distribution Deposits		955000		955000
Retirement Fund Trusts		4656154		4656154
Creditors of Other Departments and Parties		456649		456649
Payable Salaries and Wages Returned		43806889		43806889
Creditors of The Rasheed Bank		192082		192082
Creditors of An Undrawn Instrument		4284797		4284797
Revolved Cash Balance	2254142484	2254142484		0
Revenues	6015093220	6015093220		0
Opposite Buildings	13507500	13507500		0
For Machinery and Equipment	875437750	875437750		0
For Office Furniture and Appliances	4408472275	4408472275		0
For Other Furniture	19202100	19202100		0
Continuing Between the Center and The Branches		138540586693		138540586693
Outcome Measure (Deficit)	139100637338	6015093220		(133085544118)
Machinery and Equipment	175087550	962981525	787893975	
			3971775048	

The result measurement account will be set-up for the first month of 2014 (for clarification), with the accounts accumulated up to the year 2013, as the accounts for the 2013 expenditures and revenues that were recycled in entry No. (1) will be closed with the 2014 accounts, as follows:

The result measurement account		
Indicator	Account Name	Amount
1	Revenues	6015093220
Subtract:		
2	Expenditures	<u>139100637338</u>
4-8	The result measurement account (Deficit)	(133085544118)

Our previous disclosure shows the amount of the deficit at the level of the government unit (College of Science, Al-Mustansiriyah University), but this deficit is accumulated because the balances of expenses and revenues accumulated until 2013 have been cycled because they were not closed in previous years, so they were closed in the accounts of 2014, but when preparing the final accounts and recycled Balances for 2015 Expenditure and revenue balances will not be rotated because these balances will be closed in the result measurement accounts.

A list of the financial position of the College of Science/Al-Mustansiriyah University will be prepared until the end of the first month of 2014 as follows:

The Financial Position Statement		
Indicator	Account Name	Amount
3	Regular Expense Bank	346877212
3-1-2-1-1	Excessive Spending	372093746
3-3-3-3	Buildings and Facilities	13102275
	The Machines and The Equipment	787893975
	Office Furniture and Equipment	3971775048
	Other Assets	<u>17651890</u>
	Total Assets	5509394146

Liabilities:

Indicator	Account Name	Amount
4-2	Deposits	5611154
4-3	Creditors	48740417
4-7-3-2	Current accounts between the center and its branches	138540586693
4-8	Result calculations (deficit)	<u>(133085544118)</u>
	Total liabilities	5509394146

From the previously prepared statements, we conclude that according to the application of the Accrual Basis, the result of the service activity (deficit) has been determined, and all debit and credit balances have been rotated, and this provides data that enhances the control process on those accounts, and the process of making sound decisions, and good planning.

4.0 CONCLUSION AND RECOMMENDATIONS

Through what has been presented in this research from the theoretical side and the applied side, some conclusions were reached as follows:

1. The current government accounting system applied in government units does not meet the requirements of planning, control and decision-making.
2. The government accounting system used in Iraq is based mainly on the Cash Basis, with its inclusion of limited elements based on Accrual Basis and others based on Obligation Basis.
3. The Cash Basis in recording financial transactions has a lot of deficiencies, as it does not differentiate between revenue and capital expenditures, as well as does not give a true picture of the financial position and the result measurement account.
4. The Accrual Basis is characterized by the fact that it enables a comparison between actual expenditures and revenues (achieved) and the amounts approved and estimated in the budget. It presents an honest depict of the activity's results and financial position.
5. If it is a necessary to provide a government accounting system capable of giving a true depict of the financial position and accounts measuring the result, the Accrual Basis must be fully adopted in the government accounting system in order to be able to provide useful information that helps in making decisions, allocating resources accurately, evaluating performance, and achieving Effective oversight of public funds.
6. The item of disbursement most affected by this basis (entitlement) is the item of fixed assets, as according to the Cash Basis it is considered a final expense that is closed in the accounts measuring the result, and this procedure weakens supervision and control over it.
7. Applying the Cash Basis as It does not take into account the expenses and revenues due, paid and received in advance. The accounts are not rotated from year to year except for the cash account, and this leads to weak control over the debit and credit accounts and the failure to provide data useful in planning, control and decision-making processes.

Through reviewing the conclusions reached, some recommendations were identified that lead to the provision of a government accounting system that provides data that honestly and truly reflects the financial position and accounts measuring the result, which are:

1. The government accounting system must be developed in a way that meets the requirements of good planning, effective oversight, and sound decision-making.
2. The approved financial basis for recording financial transactions must be developed in a way that provides a government accounting system capable of providing data that meets the requirements of planning, control, and decision-making.

3. Following the Accrual Basis requires a single basis in the government accounting system because of the advantages it provides. Following this basis enables the provision of data that honestly and truly expresses the financial position and the accounts measuring the result.
4. Treating fixed assets as capital expenditures, and depreciation is calculated on them, and thus there will be high control over these assets.
5. Recording expenses and revenues as soon as they are due, regardless of the date of receipt or payment. This would provide data that honestly and truly expresses the financial position and the accounts measuring the result.
6. Rotate all debit and credit account balances from year to year. This would provide high control over these balances and provide data useful in monitoring, planning and decision-making processes.

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REDEFINING CREDIT RECOVERY IN SMES EXCEL METAL INDUSTRIES' JOURNEY THROUGH PROACTIVE PAYMENT REMINDERS AND CREDIT APPROVAL TACTICS

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ABSTRACT – The study explores the challenges and strategic interventions in trade credit management at Excel Metal Industries Sdn. Bhd. (EMI), a stainless-steel trading SME. Through an action research approach, the research uncovers inefficiencies in EMI's trade credit practices and introduces two cycles of interventions. These interventions focus on improving communication with customers regarding credit policies and enhancing collections efficiency. The mixed-method research methodology, employing both qualitative and quantitative analyses, reveals significant improvements in EMI's trade credit management. Key findings include enhanced customer compliance with credit policies, improved collections efficiency, and strengthened financial health. The study not only demonstrates the effectiveness of strategic interventions in trade credit management but also provides a framework for continuous improvement, emphasizing the role of clear communication, customer engagement, and adaptive policy-making in fostering long-term business sustainability.

Keywords: *Trade Credit Management., Credit Control, Collection Efficiency, Collection Policy*

1.0 INTRODUCTION

The essence of a sound credit policy lies in its ability to balance the benefits and risks of commercial borrowing. Successful credit policies not only mitigate risks but also enhance operational efficiencies, as highlighted by Vanchukhina (2018). This balance becomes especially critical in volatile market conditions, such as those witnessed in the aftermath of global pandemics, where firms with robust trade credit management exhibit remarkable resilience and sustainability. Luo's (2021) study further underscores this, revealing that U.S. firms demonstrated a significantly quicker adaptation in their trade credit approaches during the COVID-19 pandemic. These insights point to the necessity of a dynamic, responsive credit policy that can adapt to industry challenges.

In the context of Excel Metal Industries Sdn. Bhd. (EMI), a Small and Medium-sized Enterprise (SME) in the stainless-steel trade, the importance of effective trade credit management is paramount. EMI, established in 2008, has navigated the industry by offering extensive trade credits to over 1,500 customers and managing credit terms with more than 100 suppliers. This practice, while crucial for financing,

introduces the risks of bad debts and overdue payments, making effective trade credit management a cornerstone for maintaining liquidity and profitability.

1.1 Problem Diagnosis

A focused diagnosis at Excel Metal Industries Sdn. Bhd. (EMI) revealed critical inefficiencies in trade credit management. Key areas contributing to these inefficiencies identified as follows:

- **Process Issues:** There was a lack of understanding and control in the credit application process, leading to inefficiencies.
- **Methodological Flaws:** EMI faced challenges due to the absence of strategic approaches and skills in implementing credit policies.
- **Policy Gaps:** The company's credit policies were inadequately integrated within its trade system, hindering effective management.
- **Measurement Challenges:** Proper risk assessment for customers and credit term evaluations were lacking.
- **Environmental Factors:** Industry practices and the SME culture in Malaysia contributed to the challenges in credit management.
- **People and Expertise:** A significant gap in experience and expertise in credit management was evident.

These findings highlight a complex web of internal and external factors that collectively impact EMI's trade credit management, underscoring the need for a multifaceted approach to address these challenges.

1.2 Research Focus

The study aims to dissect and address EMI's trade credit management challenges through specific research questions and objectives. These are designed to guide the research towards actionable solutions and improvements in EMI's credit control processes.

Research Questions	Research Objectives
RQ 1: What are the factors that contribute to good trade credit control management on collection policy?	RO 1: To analyse and identify the factors that influence the company's trade credit policy in their trade credit management on collection policy.
RQ 2: How to implement effective trade credit management strategies for the company in terms of collection policy?	RO2: To propose interventions on effective trade credit control strategies for a better trade credit management on customer collection.
RQ 3: What are the impacts of the strategies on the company's long-term profitability and growth on the improvement of trade credit management?	RO 3: To measure impact of strategies on trade credit management that brings better performance on company's profitability and liquidity.

2.0 LITERATURE REVIEW

A review of various journals has led to the identification of key theories underpinning the topic of trade credit management. Predominantly, the Transaction Cost Theory and the Finance Advantages Theory have been identified as crucial to this research area. These theories will be explored in depth to understand their application in real-world scenarios and their resultant impacts.

2.1 Underpinning Theory and Models

Theory	Details
Transaction Cost Theory	Explored in studies by Peter (2022), Islam (2021), and Kenneth Enoch Okpala (2019), this theory explains how trade credit minimizes costs in buyer-seller interactions and affects inventory and working capital efficiency.
Finance Advantages Theory	This theory, discussed by Islam (2021) and Kenneth Enoch Okpala (2019), focuses on the financial benefits of trade credit from the supplier's perspective, emphasizing superior creditworthiness assessment and enforcement.

2.2 Key Themes

Themes	Details
Credit Control and Credit Risk	Discussions focus on the practice of offering trade credit to enhance sales, varying credit terms across industries, and the dual role of firms as creditors and debtors. Credit risk emerges from the possibility of debt instrument value decline due to borrowers' inability to meet contractual terms.
Credit Control Policy, Procedure, and System	Articles emphasize the importance of clear credit policies for decision-making in credit departments, impacting a firm's bad debts and account receivable turnover. The role of data-driven decision-making in credit approval is highlighted, along with the pitfalls of mimicking peer firms' credit policies.
Factors Influencing Effective Credit Management	Studies discuss factors like standardized credit policies, employee performance in collections, company intelligence systems, and the analysis of collection reports for managing doubtful debts. Factors influencing trade credit include internal elements like inventory levels and external factors like bank facilities.

Impact of Good Credit Management on Liquidity and Profitability	Good credit management is linked to efficient working capital management, with a focus on the Cash Conversion Cycle. Effective credit terms and detailed risk assessments are suggested to enhance company profitability and liquidity.
Credit Management's Impact on Financial Stability and Sustainability	Rigorous trade credit management positively impacts SME performance, emphasizing the importance of balancing debtors and creditors. The neglect of credit policy and management can lead to significant losses, underscoring the need for sound credit management for long-term sustainability and growth.

2.3 Proposed Interventions

Drawing from the literature review and root cause analysis, a two-cycle intervention plan is proposed for EMI:

- i. Preliminary Analysis and Planning (Input Phase): Initial meetings with EMI's management will focus on understanding current trade credit processes and policies. This stage involves analyzing key financial metrics and discussing the resources needed for new strategies.
- ii. Implementation and Transformation:
 - a. Cycle 1: Implementing proactive reminder systems for upcoming and overdue invoices, led by the sales team. This includes providing salespersons with detailed customer aging lists to facilitate better communication and payment tracking.
 - b. Cycle 2: Issuing formal credit approval letters to all credit customers, outlining credit terms and policies. This step aims to encourage timely payments through incentives and emphasizes the professional approach of EMI's credit management.

The goal of these interventions is to enhance EMI's trade credit efficiency, improving liquidity and profitability while reinforcing its professional image in credit management.

3.0 RESEARCH METHODOLOGY

This action research study utilizes a mixed-method approach, integrating both qualitative and quantitative data analysis. This combination aims to mitigate the limitations inherent in solely qualitative or quantitative methods.

Aspect	Details
Theoretical Framework	<ul style="list-style-type: none"> Action Research Methodology [6]: Focuses on the action in research with epistemological justification. Research Philosophy: Pragmatism, blending practical solutions with theoretical insights.

Research Design	<ul style="list-style-type: none"> • Mixed-Method Research Design: Involves collecting and analyzing qualitative and quantitative data across five stages (preliminary meetings, problem diagnosis, intervention planning, implementation, evaluation).
Research Methods	<ul style="list-style-type: none"> • Inductive and Deductive Approaches: Begins with specific observations (inductive) and applies general theories to specific instances (deductive). • Qualitative Data Analysis: Focus group interviews for problem identification and post-intervention evaluation. • Quantitative Data Analysis: Surveys for intervention assessment and financial data analysis for evaluating EMI's liquidity and profitability. Wilcoxon t-Test and SPSS used for statistical analysis.
Time Horizon	<ul style="list-style-type: none"> • 13 months (April 2022 to May 2023): Includes problem diagnosis, intervention planning, implementation, and evaluation phases.
Unit of Analysis	<ul style="list-style-type: none"> • Interviews with EMI's credit control team and surveys with EMI customers to evaluate the effectiveness of interventions.
Degree of Involvement	<ul style="list-style-type: none"> • Medium involvement: Involves EMI employees and customers in qualitative and quantitative data collection.
Population and Sampling	<ul style="list-style-type: none"> • Non-probability sampling: Representatives from EMI's credit control department, salespersons, and customers, involved in trade credit management.
Data Collection Method	<ul style="list-style-type: none"> • Combines interviews and survey questionnaires for qualitative data, and financial reports for quantitative data.
Validity and Reliability	<ul style="list-style-type: none"> • Content validity ensured through expert review; reliability assessed using tests like Cronbach's Alpha.
Data Analysis Method	<ul style="list-style-type: none"> • Thematic analysis for qualitative data; quantitative analysis for financial figures. Descriptive analysis and Wilcoxon Signed Ranks Test for survey data.

This methodology provides a comprehensive framework for understanding and improving trade credit management at EMI, combining theoretical insights with practical interventions.

4.0 RESULTS AND DISCUSSION

The research involved two intervention cycles to improve Excel Metal Industries' (EMI) trade credit management. Cycle one focused on proactively reminding customers of due and overdue invoice payments. Cycle two introduced formal letters of credit approval detailing credit limits, terms, and penalties for late payments. The interventions were assessed through qualitative (interviews with focus groups) and quantitative (surveys) methods. Findings indicated improvements in EMI's trade credit management, including better customer understanding of credit policies and more efficient collections, contributing to improved cash flow and profitability.

Aspect	Cycle One Findings	Cycle Two Findings
Fieldwork Method	Qualitative & Quantitative Analysis	Qualitative & Quantitative Analysis
Intervention Focus	Proactive reminders for invoice payments	Issuing formal letters of credit approval
Qualitative Insights	Challenges in credit control, slow collection, customer knowledge gaps	Importance of strategy, effectiveness, challenges, future recommendations
Quantitative Analysis	Surveys on trade credit policy, customer satisfaction	Surveys on credit policy, customer satisfaction post-cycle 2
Key Themes Identified	Slow collections, lack of customer understanding, proposed improvement strategies	Strategy impact, intervention effectiveness, recommendation for policy digitalization
Participants	General Manager, Credit Control Executives, Salespersons, EMI Customers	Same as Cycle One
Quantitative Results	Improvement in customer understanding and acceptance of trade credit policies	Further improvement in customer understanding, acceptance, and adherence to credit policies
Overall Impact	Positive changes in trade credit management, customer behavior	Enhanced understanding and efficiency in credit management, better customer compliance
Researcher's Reflection	Cycle one interventions were effective in improving trade credit management	Cycle two interventions reinforced and built upon the improvements from cycle one

5.0 CONCLUSION

The action research conducted at Excel Metal Industries Sdn. Bhd. (EMI) over two intervention cycles has yielded significant insights and demonstrable improvements in the company's trade credit management. The research aimed to address challenges in trade credit policy adherence, efficiency of collections, and overall financial health of the company. The interventions and their subsequent analyses have led to the following key conclusions: **Effective Communication Enhances Policy Compliance:** The proactive approach in Cycle One, involving reminders for invoice payments, and the formal communication in Cycle Two, through letters of credit approval, significantly enhanced customer understanding and compliance with EMI's trade credit policies. This improvement in communication led to a more informed customer base, willing to adhere to stipulated credit terms

Improved Collection Efficiency and Company Liquidity: Both intervention cycles contributed to a marked improvement in the efficiency of EMI's collection processes. This was evidenced by a reduction in overdue payments and an increase in early payments, as indicated by the quantitative data.

As a result, the company experienced an improvement in cash flow and working capital, crucial for its operational and financial stability. Strategic Intervention Leads to Better Trade Credit Management: The strategic implementation of interventions, specifically tailored to address the identified issues in trade credit management, proved to be effective. The research highlighted the importance of adopting a structured and strategic approach to managing trade credit that aligns with the company's unique operational context.

Customer Relations and Business Sustainability: The interventions not only improved financial metrics but also fostered stronger relationships with customers. By clearly communicating credit terms and offering incentives for early payments, EMI positioned itself as both a professional and customer-centric entity, thereby contributing to long-term business sustainability. Framework for Continuous Improvement: The research has established a framework for continuous improvement in trade credit management at EMI. The success of the interventions suggests that ongoing evaluation and adaptation of credit policies and practices are essential in responding to changing market dynamics and customer behaviors.

In conclusion, this action research has demonstrated that targeted interventions, grounded in thorough analysis and strategic planning, can effectively enhance trade credit management in a corporate setting. EMI's experience serves as a valuable case study for other organizations facing similar challenges, highlighting the importance of strategic communication, customer engagement, and continuous policy evaluation in trade credit management.

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THE BANK EFFICIENCY IN ARABIAN COUNTRIES: SYSTEMATIC LITERATURE REVIEW

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ABSTRACT - This systematic literature review critically examines the efficiency of banks in Arabian countries, an increasingly important topic due to the sector's rapid growth amid challenges such as limited competition and regulatory barriers. Utilizing a PRISMA-guided search strategy within the Scopus database, the review encompasses studies from 2007 to 2021, focusing on two core areas: methodologies for measuring bank efficiency, particularly Data Envelopment Analysis (DEA) and financial ratios, and the determinants of bank efficiency, including bank size, capital adequacy, liquidity, and corporate governance. The comparative analysis reveals vital insights into the efficiency dynamics of conventional and Islamic banks, emphasizing the influence of economic freedom, bank regulation, and governance structures on operational efficiency. Notably, the review uncovers significant relationships between bank governance structures and efficiency, as well as the tangible impacts of bank efficiency on industry growth and market structure. These findings contribute to a deeper understanding of the banking sector dynamics in Arabian countries and highlight the need for ongoing research, especially regarding the efficiency of sharia-based banking products.

Keywords: Bank Efficiency, Islamic Banks, Financial Crisis, Stochastic Frontier Analysis

7. INTRODUCTION

The banking sector in Arabian countries has experienced rapid growth in recent years, propelled by factors such as economic development and population growth. Despite this expansion, the sector faces challenges impacting the efficiency of banks. These challenges include limited competition, regulatory barriers, and restricted access to credit for certain segments of the population. It is crucial to measure the efficiency of banks to pinpoint areas for improvement and to guarantee their profitable and sustainable operation, as highlighted by Abedifar (2016) [1].

Efficiency in banking can be measured through various financial ratios, such as the cost-to-income ratio and the return on assets. These ratios are indicative of a bank's ability to manage expenses and generate profits, as discussed by Jothikumar (2022) [2]. Specifically, the cost-to-income ratio reflects a bank's capability to generate income relative to its operating expenses, while the return on assets measures the ability to yield profits from total assets, as explained by Hussain (2014) [3].

Another effective method for assessing efficiency is Data Envelopment Analysis (DEA). DEA evaluates the relative efficiency of organizations by analyzing their inputs and outputs. This non-parametric

approach, ideal for appraising the efficiency of banks, compares the output-to-input ratios to distinguish efficient banks from their less efficient counterparts [4].

Significant research has been undertaken in this area. For instance, Hadriche Hadriche (2015) focused on the determinants of bank performance in the GCC countries, comparing the performance of conventional and Islamic banks. Using panel data regression analysis, the study found positive correlations between bank size, capital adequacy, liquidity, and bank performance. Interestingly, while Islamic banks generally outperformed conventional banks, the difference was not statistically significant. This similarity in performance determinants for both bank types implies that factors influencing conventional banks' performance are equally pertinent to Islamic banks [5].

Al-Gasaymeh Al-Gasaymeh (2016) also examined bank efficiency determinants in the GCC countries, identifying a positive influence of bank size, capital adequacy, and liquidity on bank efficiency, whereas asset quality had a negative effect. The study revealed a relative inefficiency in GCC banks and a notable efficiency disparity between conventional and Islamic banks, favoring the latter [6].

Further, Barth et al. (2003) explored the relationship between bank supervisory frameworks and performance in Arabian countries. Their findings suggest that stronger supervisory frameworks correlate with enhanced bank performance, likely due to improved monitoring and regulation enforcement. They also observed a positive association between bank performance, economic development, and inflation levels. In countries that experienced financial crises, stronger supervisory frameworks were linked to better bank performance [7].

Lastly, Al-Hamadanya et al. (2020) conducted a systematic review on intellectual capital in the GCC, underscoring its significance in organizational performance, particularly in innovation, creativity, and competitiveness. This focus on intellectual capital is primarily attributed to the GCC's reliance on the oil and gas industry and the pursuit of economic diversification and growth [8].

This paper builds upon existing research by offering a systematic literature review on the efficiency of Arabian banks and the methodologies used to measure this efficiency.

8. MATERIALS AND METHODS

For this systematic search, we devised a strategy to identify pertinent literature. This strategy focused exclusively on the Scopus database, utilizing search terms such as “Bank Efficiency” OR “Efficiency in Banking”. The search encompassed literature from the Arab Countries, spanning the years 2007 to 2021. This included journal articles, conference papers, reviews, and book chapters published solely in English.

Our selection criteria were guided by the PRISMA Statement [10]. The primary objective was to map existing literature on bank efficiency and banking efficiency, covering research from 2007 to 2021. Initially, the search yielded 909 research items. Following the application of criteria focused on Economics, Econometrics and Finance, Business, Management, and Accounting, the number reduced to 708. A further refinement based on specific Arabic countries, including Tunisia, Saudi Arabia, United Arab Emirates, Egypt, Jordan, Lebanon, Kuwait, Qatar, Bahrain, Oman, Iraq, and Morocco,

yielded 57 relevant studies.

The scope of the study was confined to original research articles, review papers, and conference papers. To ensure the review's quality, we rigorously checked for duplications. Each article's abstract was thoroughly analyzed to ensure the inclusion of high-quality and relevant academic literature. Subsequently, a detailed evaluation of each paper was conducted. An additional criterion was the exclusion of non-English language papers, leading to the removal of three articles. After eliminating duplicate records, the final selection comprised 708 articles, adhering to the stated inclusion and exclusion criteria. Figure 1 illustrates the literature inclusion and exclusion process at each stage according to the PRISMA statement, while Figure 2 displays the number of articles extracted per year.

During the data extraction phase, 36 articles were selected based on the following criteria:

- The article must be in English and from the fields of Economics, Econometrics and Finance, Business, Management, and Accounting.
- Articles published between 2007 and 2021 were considered.
- The focus was on papers originating from Arab countries.

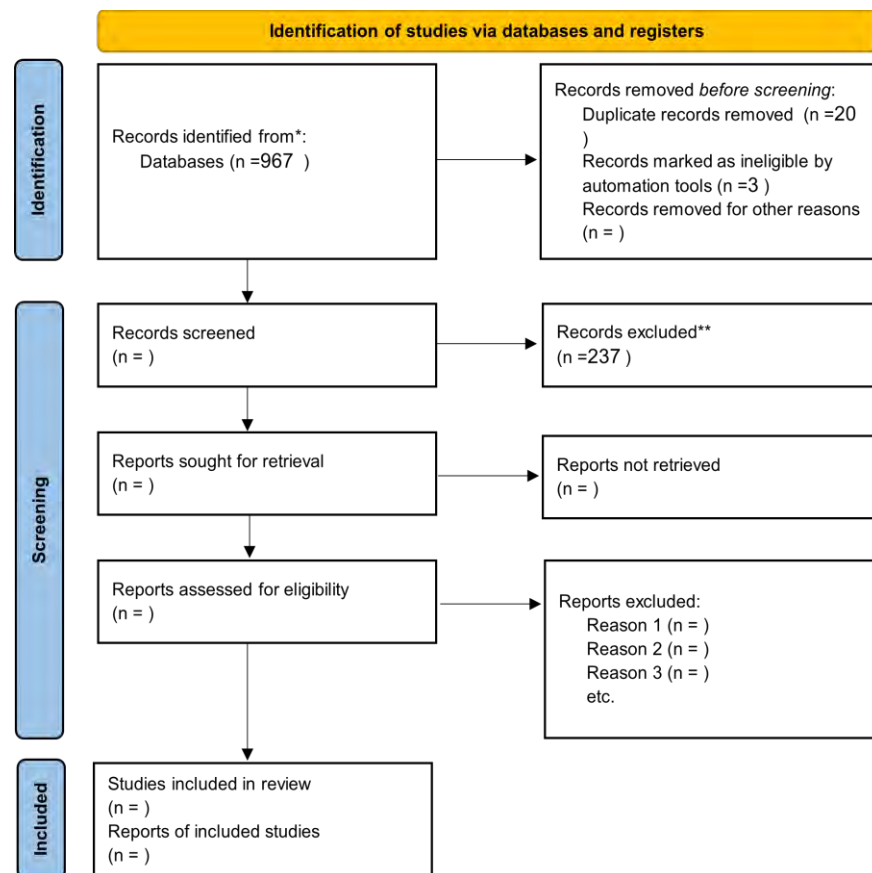


Figure 1: PRISMA Flow Diagram for Literature Selection Process

This figure illustrates the process of literature selection and screening in accordance with the PRISMA guidelines, showing the initial number of studies identified, the number excluded, and the final number included in the review.

We first employed the VoS viewer to examine the Bibliographic Co-authorship Country map. This tool allowed us to visualize the distribution of co-authorship among different countries for a specific set of publications. Figure 3 presents this map, highlighting the collaboration patterns between countries. The strongest co-authorship links were attributed to Tunisia, followed by Saudi Arabia.

Next, we analyzed the bibliographic Citation Countries, which provided insights into the distribution of citations across various countries for the selected publications. This analysis helped identify countries with significant influence within the field and those with notable citation overlaps with other countries. Figure 4 details these bibliographic Citation Countries, noting Saudi Arabia as the most cited country.

Our third step involved examining bibliographic citation sources using the VoS viewer, which identified the sources citing the selected publications. Figure 5 presents these Bibliographic Citation Sources, showing the most cited journals and their link strengths.

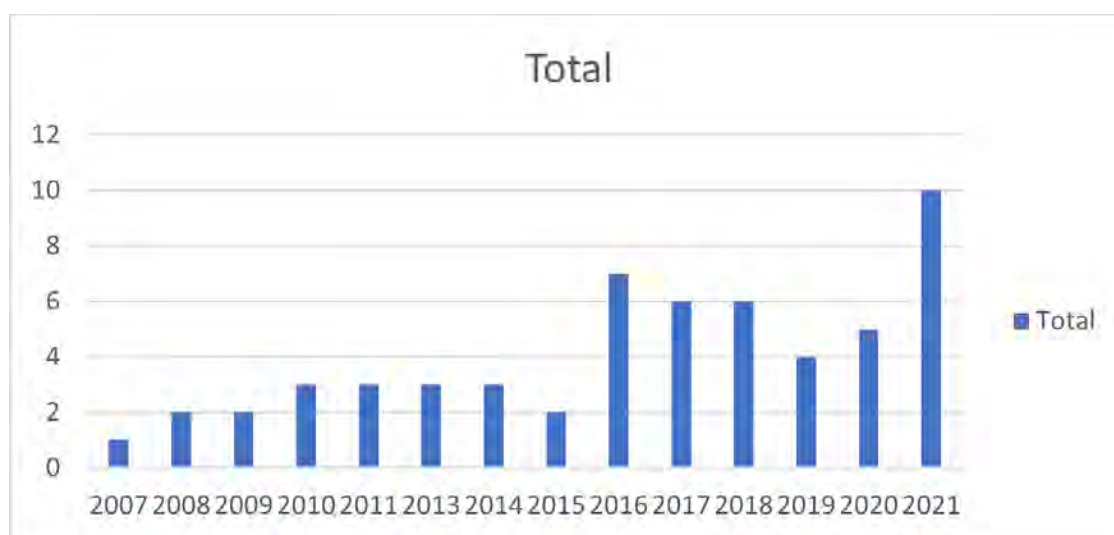


Figure 2: Annual Distribution of Extracted Articles

This figure depicts the annual distribution of articles extracted for the review, showing the number of relevant publications per year within the specified period.

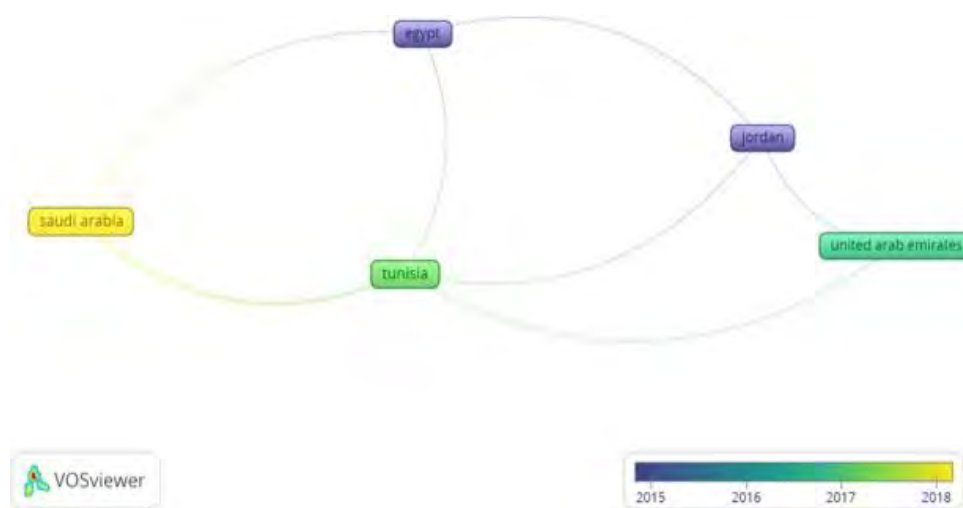


Figure 3: Co-authorship Network Among Countries in Bank Efficiency Research

This figure presents a visual network map of co-authorship relationships between countries, illustrating the patterns of collaboration and the strength of connections in the field of bank efficiency research.

Fourthly, we conducted a bibliographic meta-analysis based on article titles and abstracts. Figure 6 displays the results, highlighting the most frequently occurring terms in the dataset. These terms included "bank," "bank efficiency," "data envelopment analysis (DEA)," "DEA," "design methodology approach," and "efficiency." The analysis revealed that these terms were not only prevalent but also closely related within the research field.

Lastly, a meta-analysis based on keywords was performed. Figure 7 shows the results, summarizing the most common keywords and their co-occurrences. Keywords like "bank efficiency," "banking," "data envelopment analysis (DEA)," "DEA," "efficiency," and "Islamic banking" emerged as the most frequent, indicating their significance in the literature on bank efficiency.

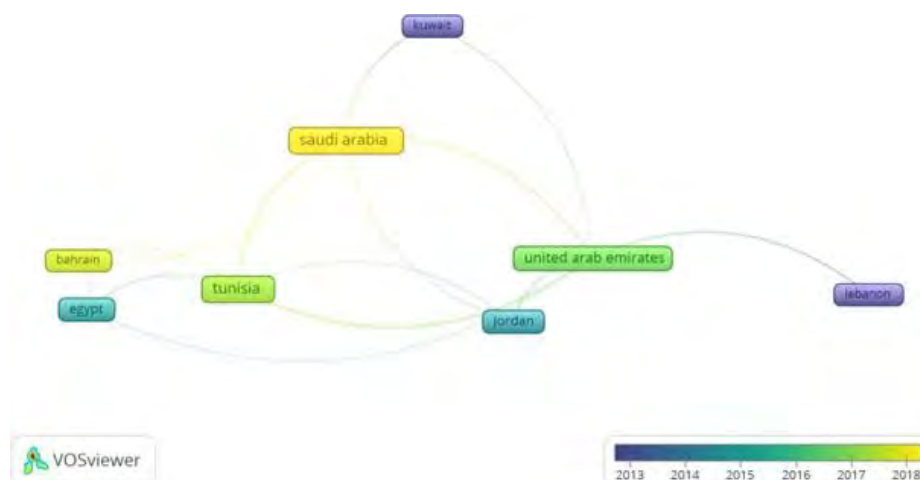


Figure 4: Global Citation Impact by Country in Bank Efficiency Studies

This figure shows the distribution and impact of citations across different countries, highlighting the countries with the highest influence and citation frequency in bank efficiency research.

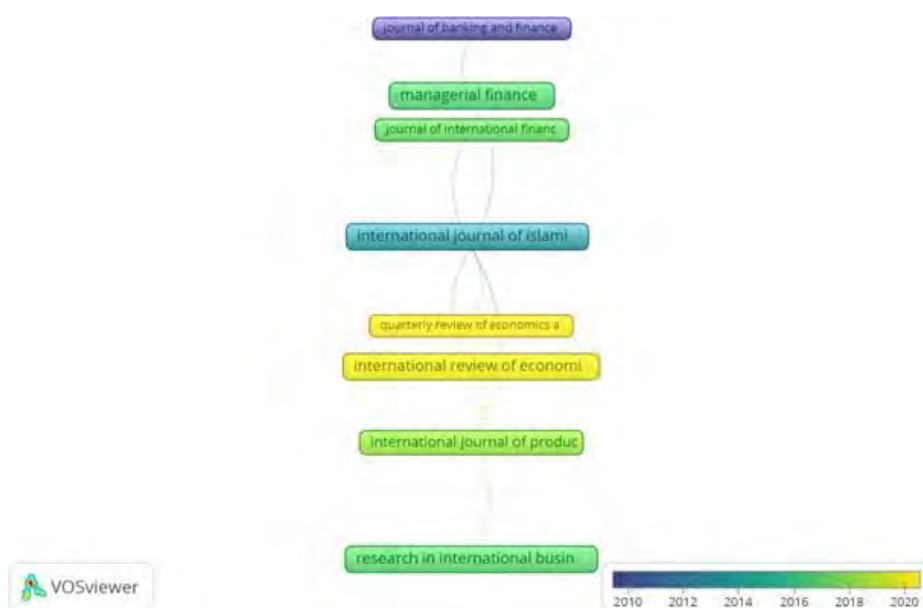


Figure 5: Key Journals and Sources Citing Bank Efficiency Literature

This figure identifies the main journals and sources that have cited the bank efficiency literature, indicating their relative influence and contribution to the field.

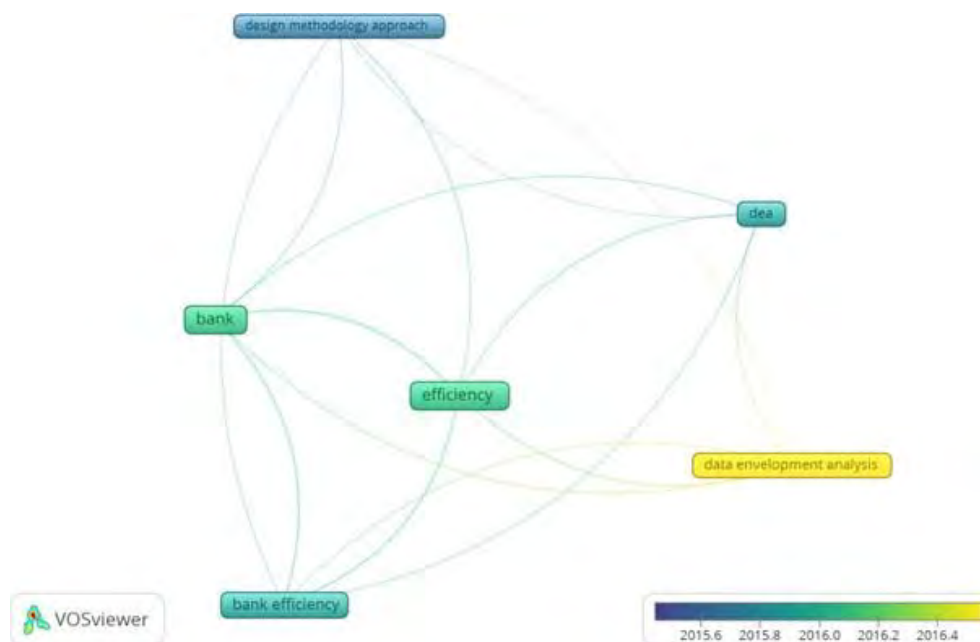


Figure 6: Common Terms in Bank Efficiency Literature - A Meta-Analysis

This figure illustrates the most frequently occurring terms in the titles and abstracts of bank efficiency studies, demonstrating the prevalent themes and focus areas in the research.

Lastly, a meta-analysis based on keywords was performed. Figure 7 shows the results, summarizing the most common keywords and their co-occurrences. Keywords like "bank efficiency," "banking," "data envelopment analysis (DEA)," "DEA," "efficiency," and "Islamic banking" emerged as the most frequent, indicating their significance in the literature on bank efficiency.

9. BANK EFFICIENCY APPLICATIONS

3.1 Data Envelopment Analysis (DEA)

This section synthesizes the application of DEA in analyzing the efficiency of banks in Arabian countries, focusing on various studies that have employed this methodology. The findings from these studies are summarized in Table 1, which provides a quick reference to the key insights and conclusions.

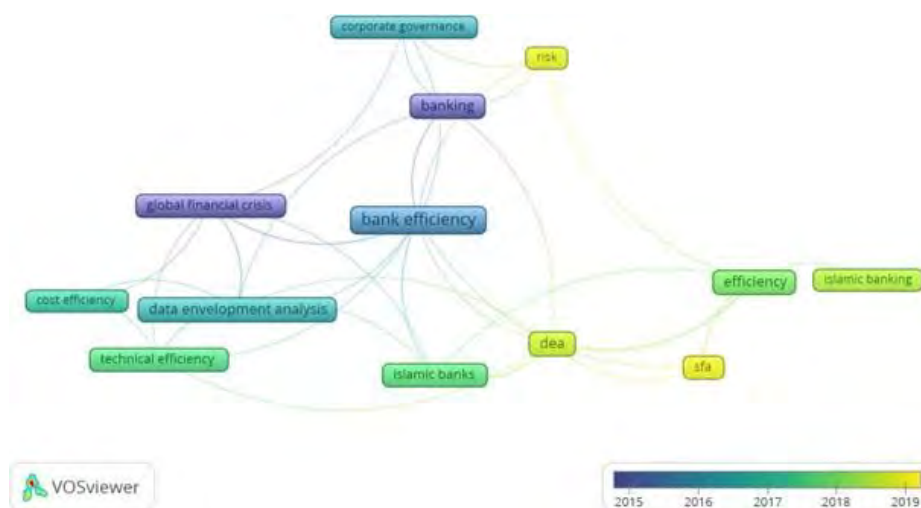


Figure 7: Keyword Analysis of Bank Efficiency Research

This figure provides an analysis of the most common keywords and their co-occurrences in the bank efficiency literature, revealing the key concepts and terms central to the field.

Table 1: Overview of DEA Applications in Bank Efficiency Studies

This table summarizes key studies that have used Data Envelopment Analysis (DEA) to assess bank efficiency, highlighting the focus areas and main findings of each study.

Study	Year	Focus Area	Key Findings
Mostafa (2007)	2007	Efficiency of top 100 Arab banks in 14 countries	Majority of banks were inefficient; only four banks from Egypt and UAE achieved 100% efficiency [9].
Bdour (2008)	2008	Efficiency of banks in Jordan (2000-2005)	Majority of banks were efficient; improvements noted over the study period [11].
Abuzayed (2009)	2009	Relationship between bank efficiency and financial metrics	Positive impact of efficiency on market value and earnings; negative impact on book value [12].
Mostafa (2011)	2011	Efficiency of top 100 Islamic banks	Many banks underperforming, indicating potential for improvements and resource savings [13].
Olson (2011)	2011	Efficiency and profitability of MENA banks (2002-2008)	General inefficiency among MENA banks; positive correlation between efficiency and profitability [14].

Diallo (2016)	2016	Financial dependence, bank efficiency, and economic growth during crises	Bank efficiency positively impacts economic growth, moderated by financial dependence [15].
Nafti (2017)	2017	Efficiency determinants in global Islamic banks	Bank size, capitalization, liquidity, and asset quality positively influenced efficiency [16].
Zeineb (2018)	2018	Corporate governance, risk, and efficiency in GCC Islamic banks	Positive impact of corporate governance on efficiency; positive correlation between efficiency and risk [17].
Mansour (2020)	2020	Productive efficiency and total productivity factors in Arab banks	Significant inefficiency and dispersion in productivity; key factors influencing productivity identified [18].
Alsharif (2021)	2021	Efficiency of Real Estate Investment Trusts (REITs) in Saudi Arabia	Traditional methods underestimate the efficiency of Saudi REITs; smaller REITs more efficient than larger ones [19].
Mohamed (2021)	2021	Efficiency determinants of Islamic banks in GCC countries	Managerial-specific education, Shariah scholars, board independence, and CEO duality impact efficiency [20].
Mollah (2015)	2015	Governance determinants on the performance of conventional and Islamic banks	Role of Shariah supervision boards and board/CEO structure significantly influences performance [21].
Johnes (2014)	2014	Performance comparison of Islamic and conventional banks around the 2008 financial crisis	No significant difference in efficiency; Islamic banking system less efficient than conventional system [22].
Bdour (2008)	2008	Banking efficiency in post-war Lebanon	Efficiency examined following financial liberalization using stochastic frontier methodology [11].
Abdel-Baki (2010)	2010	Efficiency of Bank Reform Plan in Lebanon (2003-2010)	Bank reforms contributed differently across bank categories during the global financial crisis [23].
Romdhane (2013)	2013	Impact of IT investments on Tunisian banks' performance	Positive effect of IT investments on performance; size and managerial capacity key efficiency determinants [24].
Maghyereh (2014)	2014	Efficiency of GCC banks and impact of market power, risk-taking, regulations	Efficiency influenced by market structure, risk-taking activities, and regulations [25].
Belanès (2015)	2015	Impact of subprime crisis on efficiency of Islamic banks in GCC (2005-2011)	Minor decline in efficiency among Islamic banks during the crisis [26].

HASSAN (2016)	2016	Cost efficiency of Egyptian banking sector (1997-2013)	Low average efficiency; larger banks more efficient than smaller ones [27].
Alharthi (2016)	2016	Efficiency comparison of Islamic, conventional, and socially responsible banks	Socially responsible banks most efficient, followed by conventional and Islamic banks [28].
Ayadi (2016)	2016	Relationship between regulatory compliance and bank efficiency	No significant association between compliance with international standards and efficiency [29].
Al-Gasaymeh (2016)	2016	Impact of economic freedom and country risks on bank costs in GCC	Economic freedom crucial in reducing bank costs for a potential GCC union [6].
Haque (2017)	2017	Effects of bank regulation and ownership on efficiency in MENA region	Ownership concentration and supervisory power positively influence cost efficiency [30].
Abid (2017)	2017	Efficiency of banking industries in MENA region using meta-frontier model	Differences in cost and profit efficiency across MENA region banks [31].
Alqahtani (2017)	2017	Efficiency of Islamic and conventional banks in GCC during global financial crisis	Islamic banks less efficient during crisis but showed improvement post-crisis [32].
Diallo (2018)	2018	Bank efficiency, financial dependence, and economic growth in 2009 crisis	Bank efficiency positively related to growth for financially dependent industries during crisis [33].
Aldeehani (2018)	2018	Impact of financial crisis on agency cost of Islamic and conventional banks in GCC	Crisis significantly affected agency cost; negative effects from capitalization, liquidity, profitability [34].
Mezzi (2018)	2018	Efficiency of Islamic banks in MENA and Southeast Asia, role of governance	Governance structure plays a significant role in the performance of Islamic banks [35].
Shokr (2018)	2018	Relevance of bank lending channel and efficiency in Egypt	Bank lending channel relevant; banks with low inflation and high GDP more efficient [36].
Mirzaei (2019)	2019	Relationship between bank efficiency and growth in manufacturing sectors	Efficient banking systems foster industry growth and new enterprise creation [37].
Kallel (2019)	2019	Efficiency of Tunisian and Moroccan banks	Tunisian banks more efficient than Moroccan banks [38].
Alsharif (2011)	2011	Risk, efficiency, and capital in GCC dual banking system	Islamic banks more capitalized and liquid but riskier and less efficient than conventional banks [39].

Naushad (2021)	2021	Efficiency of Sharia-compliant banks in Saudi Arabia	Good performance on CAMEL framework; comparison with conventional banks recommended [40]
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This table encapsulates the diverse applications of DEA in the context of banking efficiency in Arabian countries. It highlights the varying degrees of efficiency among conventional and Islamic banks, the impact of various factors like bank size and governance on efficiency, and the evolution of bank efficiency over time.

In addition to the tabulated information, it's important to note that DEA, as a non-parametric approach, offers a robust framework for evaluating the efficiency of banks by comparing their input-output ratios. This method has been instrumental in identifying not only the levels of efficiency among banks but also the areas where they can potentially improve their operations and strategies.

10. RESULTS AND DISCUSSION

The comprehensive analysis of DEA applications in bank efficiency, as summarized in Table 1, reveals several overarching trends and insights in the Arabian banking sector. This discussion synthesizes these findings to understand the broader implications for bank efficiency in the MENA region and GCC countries.

Table 2: Synthesis of Key Findings in Bank Efficiency Studies

This table compiles the major trends and insights derived from the reviewed literature, categorizing them into thematic areas such as variation in bank efficiency, impact of economic and regulatory factors, comparison of Islamic and conventional banks, and more. It provides a concise overview of the significant findings and their implications for the banking sector in Arabian countries.

Topics	Details
Variation in Bank Efficiency	The studies consistently show variations in efficiency levels among banks within the Arabian countries. While some banks demonstrate high efficiency, a considerable number are found to be underperforming. This variation underscores the need for tailored strategies to enhance efficiency across different banks and countries.
Impact of Economic and Regulatory Factors	Economic freedom, regulatory environment, and ownership structure emerge as significant factors influencing bank efficiency. Enhanced economic freedom and appropriate regulatory measures are seen to positively affect bank efficiency, suggesting a need for policy interventions that promote these aspects.
Comparison of Islamic and Conventional Banks	The efficiency comparison between Islamic and conventional banks indicates mixed results. In some instances, Islamic banks outperform their conventional counterparts, while in other cases, the reverse is true. This

	finding points to the complex nature of banking efficiency dynamics and the need for a nuanced understanding of different banking models.
Role of Corporate Governance	Corporate governance, especially in Islamic banks, plays a crucial role in determining efficiency. The studies highlight the importance of factors such as board size, independence, and the presence of a Sharia board in enhancing efficiency.
Influence of External Crises	The impact of external crises, such as the global financial crisis, on bank efficiency is notable. Banks' efficiency levels are found to be crucial in determining their resilience and response to economic downturns, emphasizing the importance of maintaining high efficiency standards for crisis preparedness.
Technological and Managerial Factors	Technological investments and managerial capabilities are identified as key drivers of efficiency in several studies. This finding suggests that continuous improvement in technology and management practices is essential for maintaining and enhancing bank efficiency.

11. CONCLUSION

This systematic literature review has provided a detailed exploration of bank efficiency in Arabian countries, delving into the methodologies used for measurement and the factors influencing it. The review, informed by a PRISMA-guided search strategy, encompasses studies from 2007 to 2021, focusing on Data Envelopment Analysis (DEA) and financial ratios. Key findings have highlighted the impact of variables like bank size, capital adequacy, and liquidity on efficiency, as well as the significant role of corporate governance, particularly in Islamic banking.

A notable insight is the comparative analysis between conventional and Islamic banks, revealing nuanced differences in efficiency. The review also underscores the influence of broader economic and regulatory environments on bank operations, demonstrating that factors such as economic freedom and regulatory structures play a crucial role in shaping bank efficiency. Additionally, the research has drawn attention to the real effects of bank efficiency on the growth and structure of various industries, asserting its importance in the broader economic context.

Future Research Directions:

The review opens several avenues for future research, pivotal for a deeper understanding of the banking sector dynamics and for formulating strategies to enhance efficiency and performance. Key areas for future exploration include:

Table 3: Future Research Directions in Bank Efficiency

This table outlines potential areas for future research identified through the systematic literature review. It categorizes these areas into topics like Sharia-Compliant Banking Products, Technological Advancements, Sustainable Banking Practices, etc., offering a roadmap for further exploration and study in the field of bank efficiency.

Topics	Details
Sharia-Compliant Banking Products	The evolving landscape of Islamic finance warrants a deeper investigation into the efficiency of sharia-compliant products and their comparative performance against conventional banking products.
Technological Advancements	As the banking sector continues to embrace digital transformation, future studies could explore the impact of emerging technologies like blockchain, artificial intelligence, and fintech innovations on bank efficiency.
Sustainable Banking Practices	With increasing emphasis on sustainability and social responsibility, examining the efficiency of banks in implementing sustainable practices could provide valuable insights.
Crisis Management and Resilience	Further research is needed to understand how banks' efficiency affects their resilience and adaptability during economic downturns and financial crises.
Cross-Country Comparative Studies	Comparative studies between Arabian countries and other regions could offer a broader perspective on global banking efficiency trends and best practices.
Regulatory Impact Analysis	An in-depth analysis of how different regulatory frameworks across Arabian countries impact bank efficiency could inform policy decisions and regulatory reforms.

This comprehensive review not only contributes significantly to the existing body of knowledge on bank efficiency in the Arabian context but also highlights the need for ongoing research in this ever-evolving field. The identified future research directions are crucial for comprehending the dynamic banking environment and for devising strategies that enhance efficiency and performance in the banking sector.

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TRANSFORMING INTERNAL AUDIT THROUGH ROBOTIC PROCESS AUTOMATION: A CONCEPTUAL ANALYSIS

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ABSTRACT- The landscape of Internal Audit (IA) is undergoing seismic shifts due to technological advancements and growing regulatory complexities. Traditional auditing methodologies are increasingly unable to cope with the new challenges of comprehensive risk coverage and escalating compliance requirements. This paper explores the transformative potential of Robotic Process Automation (RPA) as a technological solution to modernize and enhance the IA function. Drawing on authoritative research and industry reports from Deloitte, PwC, EY, KPMG, and ISACA, the paper delves into the revolutionary impact of RPA on audit speed, accuracy, and scope. It argues that RPA serves not just as a tool for operational efficiency but as a catalyst for a paradigm shift in how IA can serve as strategic advisors in organizational governance. While highlighting the undeniable benefits of RPA, the paper also critically examines the financial, technical, and governance challenges in implementing this technology, offering a multi-faceted framework for its successful integration into IA functions. The findings advocate for a balanced, informed, and forward-thinking approach to RPA adoption, calling for nuanced strategies that consider both its immense potential and inherent complexities. This paper provides a scholarly contribution to the evolving discourse on technology's role in redefining IA, offering actionable insights for professionals and decision-makers in the field.

Keywords: *Robotic Process Automation (RPA), Internal Audit, Digital Transformation, Corporate Governance, Audit Efficiency, Technology Adoption, Digitalization*

1.0 INTRODUCTION

In today's business ecosystem—marked by rapid technological shifts and complex operational intricacies—IA functions find themselves at a crossroads. As businesses expand their global footprint, digitize their operations, and grapple with increasingly complicated regulatory frameworks, the role of IA has never been more critical [5]. The escalating compliance burden and the expectation for more comprehensive risk coverage have placed traditional audit methodologies under scrutiny, as they often fall short of meeting these intensified demands [7].

Enter RPA, an emerging technological paradigm poised to redefine the IA landscape [11]. Unlike conventional audit processes that rely heavily on manual intervention and periodical assessments, RPA introduces a dynamic approach to auditing. It enables real-time monitoring, data analytics, and a host of other functionalities that can vastly improve the efficiency and effectiveness of IA functions [3]. In particular, RPA shows promise in addressing the limitations of traditional methods by automating routine tasks, thereby freeing up human capital to focus on more strategic and complex aspects of auditing, such as fraud detection and ethical governance. The transformative potential of this technology has been well-documented, offering organizations the capabilities to drastically increase productivity while assuring more comprehensive and accurate risk assessments [2][12].

This paper aims to go beyond the surface-level implications of this technological shift. Drawing upon authoritative sources, including but not limited to KPMG (2022), PwC (2017), and Deloitte (2023), we engage in a scholarly inquiry into the deeper implications, challenges, and opportunities presented by the incorporation of RPA into IA. We explore questions around the scalability, security, and cost implications of adopting RPA and provide an analytical framework for IA departments considering this monumental transition. The ultimate goal is to furnish IA professionals and decision-makers with the insights and tools necessary for successful RPA integration, ensuring that the IA function not only adapts to but thrives in the evolving business landscape.

Decoding Robotic Process Automation and Its Revolutionary Impact on Internal Audit

RPA, a form of automation technology, utilizes software robots or 'bots' to perform rule-based tasks within business processes, including those in IA functions [4]. These bots are designed to mimic human actions, such as extracting data, processing transactions, and generating reports. While the concept of automation isn't novel, what sets RPA apart is its remarkable capability for adaptability, learning, and integration with existing technologies [2]. To illustrate the multi-dimensional impact that RPA has on IA, the following Figure 1: The Three Pillars of RPA’s Impact on IA highlights three key areas where this technology is revolutionizing the field.

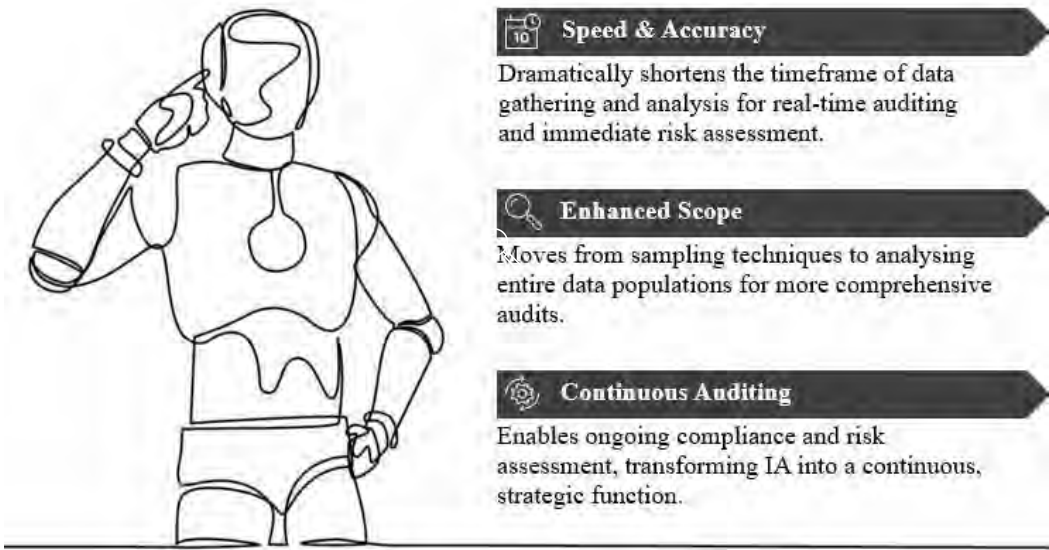


Figure 1: The Three Pillars of RPA’s Impact on IA [2][6][9][10][12]

Catalysing a Paradigm Shift: How RPA Transforms the Internal Audit Landscape

The integration of RPA into IA is not just an incremental improvement but a paradigm shift. Beyond mere process acceleration, RPA allows for a rethinking of what auditing can accomplish. By automating routine, repetitive tasks, auditors are liberated to focus on more complex, judgment-based aspects of their work. This shift allows for a more profound engagement with the audit subject matter, thereby elevating the role of IA to that of strategic advisors in organizational governance [2]. The concept of 'audit by exception' gains new relevance in this landscape. With bots managing the grunt work of data collection and basic analysis, auditors can focus on anomalies or 'exceptions' that may indicate irregularities or risks. The IA function thus becomes more proactive rather than reactive, equipped to anticipate issues before they escalate into significant problems [12]. Moreover, the continuous auditing made possible by RPA enriches the audit data pool, enabling more sophisticated data analytics. The IA function can then move from descriptive analytics, merely detailing what has happened, to predictive and even prescriptive analytics, outlining what could happen in the future and how to mitigate potential risks [10].

Critical Pathways: Navigating the Financial, Technical, and Governance Challenges in Merging RPA with Internal Audit

While the adoption of RPA offers transformative potential for IA functions, it's critical to recognize the broader challenges that accompany this technological shift. According to an EY Global Internal Audit survey published in December 2020, 50% of the 647 respondents had no digital strategy, 47% were in the early or partial stages of implementation, and only 3% had fully implemented a digital strategy [1]. These figures accentuate the need for cautious and strategic planning when integrating RPA as part of a broader digitalization effort within IA functions. To provide a comprehensive understanding of these challenges, the following Figure 2: The Triad of Challenges in Merging RPA with IA categorizes them into financial, technical, and governance-related obstacles.

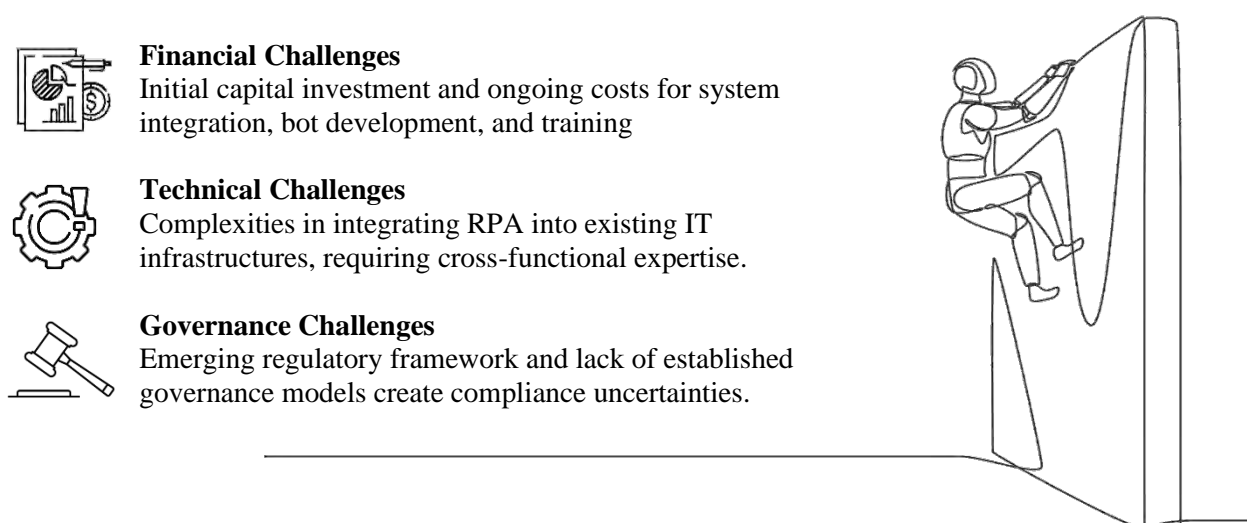


Figure 2: The Triad of Challenges in Merging RPA with IA [8]

To navigate these challenges, IA functions must engage in comprehensive due diligence, incorporating insights from both technological and governance standpoints. Leadership should actively collaborate with IT and compliance departments to draft an integrative roadmap for RPA adoption. This strategy should aim to mitigate risks while harnessing the full potential of RPA to transform the audit landscape.

2.0 CONCLUSION AND RECOMMENDATIONS

As we steer through the intricacies of IA in an era marked by unprecedented technological advances, the crossroads we find ourselves at are both daunting and promising. The rapid shifts in technology and escalating compliance requirements necessitate a reimagining of traditional audit frameworks. RPA, although not a panacea, presents itself as a game-changing element capable of catalyzing a paradigm shift in the IA landscape. The sweeping changes brought by RPA in enhancing productivity, efficiency, and accuracy in audit processes are compelling. By automating mundane and repetitive tasks, RPA not only accelerates the audit cycle but also significantly reduces human errors, thereby boosting the reliability and integrity of audit results. However, the technological marvel that is RPA does not come without its caveats.

Financial constraints, technical complexities, and governance challenges are the critical pathways that organizations must navigate cautiously. While the initial financial investment may deter SMEs, the long-term ROI and efficiency gains provide a compelling counter-narrative. Technically, the integration of RPA within existing IT infrastructure calls for a meticulous, cross-disciplinary approach to ensure seamless operational congruity. Governance, perhaps the most nebulous of the challenges, requires a proactive stance, given the still-evolving regulatory landscape. Therefore, as organizations consider incorporating RPA into their IA functions, a multi-faceted, strategically orchestrated approach is indispensable. By acknowledging and addressing the multifaceted challenges head-on, firms can unlock the full potential of RPA. They need to enact a comprehensive due diligence process, involve multiple stakeholders including IT and compliance units, and continually update their strategies in light of new developments and best practices.

The integration of RPA into IA is not just an operational change; it is a transformative shift affecting every facet of the audit process, from planning and execution to reporting and compliance. This paper has attempted to provide a scholarly inquiry into this transformative shift, enriched by authoritative perspectives from industry leaders like KPMG, PwC, and Deloitte. In doing so, it has laid down a foundation for future research and practical applications, advocating for a nuanced, vigilant, and proactive approach to RPA adoption in IA. In conclusion, the road ahead is complex but navigable, challenging yet rewarding. The key lies in acknowledging the transformative potential of RPA while exercising due diligence to navigate the labyrinthine complexities it brings along. A balanced, informed, and forward-thinking approach will be the cornerstone of successful RPA integration into IA, ultimately redefining what efficiency, compliance, and excellence mean in the audit world of tomorrow.

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CONCLUDING REMARKS

As we conclude the AHIBS International Action Conference 2023 (AHIBS-ACT-2023) Proceedings, we reflect on the rich tapestry of knowledge that has been woven across diverse domains, culminating in the insightful theme of Marketing and Human Resources. This final section has highlighted the critical importance of adaptability and innovation in these rapidly evolving fields, offering a lens into the future of business practices. The papers in this theme have adeptly tackled a range of topics, from mental health support in healthcare to the transformative power of digital marketing and social media in today's business landscape. They have provided invaluable insights into customer relationship management, the role of new media technologies, and strategies for enhancing resilience in marginalized communities. These contributions not only showcase cutting-edge strategies in marketing and HR but also exemplify the dynamic nature of contemporary business challenges and solutions.

This compilation stands as a testament to the scholarly excellence and collaborative spirit that characterized AHIBS-ACT-2023. The diverse perspectives and innovative discussions present in these proceedings have made significant contributions to the fields of business and economics, setting a new benchmark for academic inquiry and professional practice. We express our profound gratitude to all contributors for their exemplary scholarship and dedication. Their work has enriched the academic dialogue and set the stage for future exploration and impact. As this publication marks the end of AHIBS-ACT-2023, it also signifies a beginning – a beacon guiding ongoing research, inspiring change, and influencing the global academic and business spheres.