

Exploring the Impact of Artificial Intelligence on Job Opportunities in Small and Medium Enterprises: A Comprehensive Interview Analysis of Employee and Executive Perceptions Towards the Future, Case Study of a Medium-sized Enterprise in Russia.

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Abstract

Artificial Intelligence (AI) represents a frontier of technological advancement with the potential to impact various operational and strategic domains within enterprises. Particularly, Small and Medium-sized Enterprises (SMEs) in emerging markets like Russia face a unique set of challenges and opportunities as they navigate the AI landscape.

This research undertakes a case study approach to delve into the intricacies of AI adoption within a small enterprise in Russia, seeking to unveil the implications thereof and to delineate prospective strategies for leveraging AI effectively. By employing a blend of qualitative methods, including in-depth interviews and thematic analysis, this study draws insights from both the extant literature and primary data collected from the enterprise in focus. The findings shed light on the current perceptions and utilization of AI across different job roles within the enterprise, the anticipated challenges in implementing AI, and the potential impacts on job security, role definitions, and skill requirements. Furthermore, the study explores strategies and actions for integrating AI within the operational and strategic frameworks, underscoring the importance of education and preparedness among the workforce. Through a granular exploration of these facets, this research not only contributes to the understanding of AI adoption in the context of Russian SMEs but also lays the groundwork for similar enterprises in emerging markets in their AI integration journey.

The insights from this study are essential for policymakers, business practitioners, and academic researchers to understand the broader effects of AI on SMEs in changing economies.

Keywords: Artificial Intelligence, SMEs, Technology Adoption, Operational Strategies, Job Security, Qualitative Research, Emerging Markets

抽象的

人工智慧 (AI) 代表了技術進步的前沿，有可能影響企業內的各個營運和策略領域。特別是俄羅斯等新興市場的中小企業 (SME) 在人工智慧領域面臨一系列獨特的挑戰和機會。

本研究採用案例研究方法，深入研究俄羅斯一家小型企業採用人工智慧的複雜性，試圖揭示其影響並描繪有效利用人工智慧的前瞻性策略。透過採用深度訪談和主題分析等多種質性方法，本研究從現有文獻和從重點企業收集的原始資料中汲取見解。研究結果揭示了企業內不同工作角色目前對人工智慧的看法和利用、實施人工智慧的預期挑戰，以及對工作保障、角色定義和技能要求的潛在影響。此外，該研究還探討了將人工智慧納入營運和策略框架的策略和行動，並強調了勞動力教育和準備的重要性。透過對這些方面的細緻探索，這項研究不僅有助於了解俄羅斯中小企業對人工智慧採用的理解，而且還為新興市場的類似企業的人工智慧整合之旅奠定了基礎。

這項研究的見解對於政策制定者、商業從業者和學術研究人員了解人工智慧對不斷變化的經濟體中的中小企業的更廣泛影響至關重要。

關鍵字：人工智慧、中小企業、技術採用、營運策略、就業保障、質性研究、新興市場

INTRODUCTION

Research Background

The emergence of Artificial Intelligence (AI) has heralded a significant transformation in the business world, with its adoption within Small and Medium-sized Enterprises (SMEs) signaling a critical shift in operational strategies and employment dynamics. For SMEs in emerging economies, especially Russia, this transition offers a mix of potential benefits and challenges that warrant close examination ¹.

Recent developments in Russia underscore the nation's determination to harness AI's potential. In September 2022, the establishment of the National AI Center marked a strategic move by the Russian government to propel AI research and applications across business, scientific, and governmental sectors². Concurrently, the service robot sector in Russia has witnessed considerable growth, signaling a broader trend towards embracing AI and robotics in everyday business operations ³. Russian SMEs, which contribute significantly to the national economy with over 5.7 million businesses and employment for approximately 19 million people, are thus poised at the crossroads of AI integration ⁴. These enterprises are gradually adopting AI to gain a competitive edge, enhance performance, and streamline operations ⁵. The implications of AI for job

¹ L. Gokhberg and T. Kuznetsova, "Digital Transformation of Business Models: Best Practice, Enablers, and Roadmap," IntechOpen, 2020, <https://www.intechopen.com/chapters/72459>.

² CNA. (2022). AI Autonomy in Russia: A Year's Reflection. <https://www.cna.org/reports/2022/09/ai-autonomy-in-russia-a-years-reflection>

³ International Federation of Robotics, "Five Trends in Russian Robotics," 2022, <https://ifr.org/post/five-trends-in-russian-robotics>.

⁴ Chepurenko, A. (2020). SMEs and Entrepreneurship Policy in Russia. ResearchGate. https://www.researchgate.net/publication/342611378_SMEs_and_entrepreneurship_policy_in_Russia

⁵ V. Gimpelson and R. Kapeliushnikov, "The Russian Labor Market: Trends, Institutions, Structural Changes," Springer, 2020, https://link.springer.com/chapter/10.1007/978-981-16-8763-1_59.

opportunities and the labor market, however, remain a complex issue. On the one hand, AI is expected to bring about job displacement and the obsolescence of certain skills. On the other, it holds the promise of job creation and the emergence of new roles, especially in tech-driven sectors⁶. This duality reflects the broader global debate regarding AI's impact on jobs and the economy⁷.

For this study, I have selected a medium-sized enterprise that is representative of the broader SME sector in Russia. This company was chosen primarily for the accessibility of its data and resources, and its established presence in the market. Operating for over 15 years, this company has shown stable growth in the SME sector, currently employing more than 80 people and generating an annual revenue of 45 million rubles. It has forged strong partnerships with major players in the industry, such as EOS, Harvia, WEDI, and KASTOR, reflecting its significant role in the construction sector. While it has had some interactions with AI products. While it has had some interactions with AI products, it has not yet developed or worked with individualized AI systems. This positions the company as a valuable case study to explore the impact of AI on employment within Russian SMEs, capturing their perspectives on AI's role in shaping future job opportunities and the strategic measures needed to harness its potential.

This study delves into the impact of AI on employment within Russian SMEs, drawing from in-depth interviews with employees and executives of a medium-sized enterprise. It aims to capture their perspectives on AI's role in shaping future job opportunities and the strategic measures needed to harness its potential. The research will contribute valuable insights into the discourse on AI, employment, and the future of work, offering guidance for SMEs, policymakers,

⁶ Forbes Advisor, "How Artificial Intelligence Will Transform Business," 2021, <https://www.forbes.com/advisor/business/software/ai-in-business/>.

⁷ D. Ivanov and S. Webster, "The Impact of Artificial Intelligence on Employment," ResearchGate, 2020, https://www.researchgate.net/publication/342611378_The_Impact_of_Artificial_Intelligence_on_Employment.

and scholars as they navigate the evolving landscape of an AI-integrated economy. As AI continues to redefine the business environment, this research positions itself at the intersection of technology and the workforce. By mapping the current and anticipated effects of AI on job dynamics, the study will provide a nuanced understanding of how SMEs can adapt to and thrive in the face of AI-induced changes in the job market.

Motivation

The relentless advancement of Artificial Intelligence (AI) is not just a global phenomenon; it resonates deeply with my own journey, which began in the bustling world of Russian Small and Medium Enterprises (SMEs). Growing up amidst the dynamic ebb and flow of a family-owned business in Russia, I witnessed first-hand the grit and ingenuity it takes to thrive. These formative experiences ignited my passion for the business sector and sowed the seeds for my academic and career ambitions.

As I matured, so did my fascination with the intricacies of business operations and the potential for technology to revolutionize them. This fascination evolved into a scholarly pursuit, as I sought to understand how technology, particularly AI, could be a catalyst for change in the business environment I knew so intimately. I am particularly drawn to the untapped potential within Russian SMEs, where the integration of AI is still nascent yet brimming with possibilities.

My research is driven by a deeply personal quest to bridge the gap between the traditional business practices I grew up with and the cutting-edge possibilities AI offers. It's a quest informed by dialogues with SME owners and employees, whose perspectives and apprehensions about AI reflect a microcosm of the larger global debate. Their insights are invaluable, offering a window

into the mindset of those at the front lines of business, who stand to be most affected by AI's encroachment.

I am convinced that AI represents a pivotal turning point in our society—akin to the advent of the internet—destined to redefine the way we live and work. This research is an exploration of that turning point, with a focus on Russian SMEs, aiming to demystify AI's potential impact on job opportunities and business practices. It is both a professional endeavor and a personal exploration, reflecting a lifetime of experiences and a vision for the future of Russian businesses in the AI era.

Research purpose

The primary aim of this study is to explore the multifaceted impact of Artificial Intelligence (AI) on job opportunities within small and medium-sized enterprises (SMEs) in Russia, with a particular focus on a case study of a medium-sized enterprise. This research seeks to elucidate how various job roles within SMEs perceive and utilize AI, anticipating the challenges and changes in perceptions following AI implementation. It delves into the consequences of AI integration on job security, the redefinition of roles, and the evolution of skill requirements. Furthermore, the study is dedicated to identifying and recommending strategies for the effective assimilation of AI within both operational and strategic business frameworks. Through comprehensive interview analysis of employees and executives, this research endeavors to provide insightful guidance for SMEs, policymakers, and scholars in adapting to the transformative effects of AI, thereby facilitating a proactive approach to workforce development and strategic planning in the AI-augmented economic landscape.

Research questions

Research Question 1: Perception and Utilization of AI Across Various Job Roles in SMEs

Research Question 2: Anticipated Challenges and Perceptions of AI Implementation within SMEs

Research Question 3: Impact of AI Integration on Job Security, Role Definitions, and Skill Requirements

Research Question 4: Strategies for Effective AI Integration within Operational and Strategic Frameworks

Limits

Limited Respondent Pool:

The number of respondents who participated in the interviews was limited. This limitation curtails the breadth and variety of insights that could have been garnered from a more extensive and diverse respondent pool. The opinions and experiences of a larger and more varied group of professionals across different sectors and geographical locations might have provided a richer and more nuanced understanding of the AI-business interface.

Time Constraints:

The timeframe within which this research was conducted posed a significant limitation. The exigency to adhere to the stipulated timeline may have potentially affected the thoroughness and the extent of data collection, analysis, and interpretation. A more extended timeframe could have allowed for a more exhaustive exploration of the research questions and a deeper engagement with the data.

Resource Limitations:

The resources available for this research were limited, encompassing financial, technological, and human resources. These limitations might have affected the scope of data collection, the technological tools employed for analysis, and the extent of expert consultation that could have been sought. An enriched resource pool could have potentially facilitated a more in-depth investigation and a more robust analytical process.

Technological Constraints:

The rapid evolution of AI technologies implies that the state of the art is continually advancing. The technological constraints during the time of this research might have limited the exploration of the latest AI applications in the business domain. Additionally, the availability and access to cutting-edge AI tools and platforms were constrained, which might have impacted the depth of understanding and analysis.

Geographical and Cultural Variances:

The geographical scope of the research was confined, and this limitation could have affected the understanding of cultural variances in the perception and adoption of AI in business across different regions. The insights gleaned from the respondent pool might be reflective of specific cultural and organizational contexts, and may not be universally applicable or interpretable.

Depth of AI Expertise among Respondents:

The varying levels of familiarity and expertise with AI among the respondents could have influenced the quality and depth of insights garnered. The respondents, although seasoned in their respective fields, had varying degrees of exposure to and understanding of AI, which might have affected the richness of the data collected.

Potential Bias:

The potential for bias, both on the part of the researcher and the respondents, is a limitation that warrants acknowledgment. The interpretive lens through which the data was analyzed and the preconceived notions or biases of the respondents could have influenced the findings.

Accessibility to Relevant Data:

The accessibility to proprietary or sensitive business data was restricted, which might have limited the ability to delve deeper into some aspects of AI applications in business, especially in understanding real-time challenges and impacts.

Delimits

Selection of Respondents:

The choice of respondents was a major delimiting factor. The selection was focused on professionals from specific sectors and positions to gain a particular perspective on the topic, which inherently limits the scope and generalizability of the findings.

Technological Scope:

The scope of AI technologies explored in this study was delimited based on the contemporary state of technology during the research timeframe. This delimitation may not capture the advancements that occur rapidly in the field of AI.

Sectoral Focus:

The research was delimited to certain sectors within the business realm. Different sectors may have varied levels of AI adoption and different perspectives on AI's impact, hence this delimitation can affect the breadth of understanding regarding AI's influence across the entire business landscape.

Time Frame:

The research was conducted within a specific timeframe which acted as a delimit, and it may not capture the evolving dynamics of AI in business as this field is rapidly changing.

Methodological Choices:

The methodological choices, including the use of qualitative methods, the design of the interview protocol, and the analytical frameworks employed, were delimiting factors that shaped the research narrative.

Accessibility to Data:

The research was delimited by the accessibility to certain types of data, especially proprietary or sensitive business data which could have provided a deeper insight into the real-world applications and implications of AI in business.

Analytical Framework:

The analytical frameworks and theories employed to interpret the data were chosen based on certain theoretical and practical considerations, which act as delimits to the interpretive lens applied to the data.

Objective Setting:

The objectives set for this research were precise and directed towards specific inquiries which delimited the scope of exploration.

LITERATURE REVIEW

Artificial Intelligence (AI)

Artificial Intelligence (AI) has emerged as a defining technology of the 21st century, with an ever-expanding scope influencing a broad spectrum of sectors including healthcare, finance, education, and manufacturing among others ⁸. The ability of AI to process vast amounts of data, learn from it, and subsequently make predictions or suggestions has unlocked new frontiers in technological innovation ⁹. These capabilities have made AI an indispensable tool in today's data-driven world, with organizations increasingly leveraging AI to gain competitive advantage, enhance efficiency, and drive innovation ¹⁰.

The transformational potential of AI extends beyond automation to include augmentation, where AI systems work alongside humans to enhance cognitive abilities and facilitate decision-making ¹¹. For instance, AI-powered analytics platforms can provide actionable insights from data, enabling better informed decision-making, while AI-driven automation tools can handle routine tasks, freeing up human resources for more strategic, creative endeavors ¹². This synergy between

⁸ Russell, Stuart, and Peter Norvig. *Artificial Intelligence: A Modern Approach*. 3rd global ed. Harlow, England: Pearson Education Limited, 2016.

⁹ Goodfellow, Ian, Yoshua Bengio, and Aaron Courville. *Deep Learning*. Cambridge, MA: The MIT Press, 2016.

¹⁰ Davenport, Thomas H., and Rajeev Ronanki. "Artificial Intelligence for the Real World." *Harvard Business Review*, January 9, 2018.

¹¹ Brynjolfsson, Erik, and Andrew McAfee. *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*. New York: W.W. Norton & Company, 2014.

¹² Bughin, Jacques, et al. "Artificial Intelligence: The Next Digital Frontier?" McKinsey & Company, June 2017.

human intelligence and artificial intelligence is seen as a pivotal factor in driving productivity and innovation in the modern enterprise ¹³. However, despite the immense potential, the integration of AI in organizational processes is not without challenges. Concerns around data privacy, algorithmic bias, and ethical implications of AI are among the critical issues that organizations and policymakers need to address ¹⁴ Moreover, the rapid advancement in AI technologies necessitates a continuous upskilling and reskilling of the workforce to keep pace with the evolving technological landscape ¹⁵.

In academia, the discourse around AI has grown exponentially, exploring various facets from the technical advancements in machine learning algorithms to the socio-economic, ethical, and philosophical implications of AI. The exploration of AI from a multi-disciplinary perspective is crucial in understanding and navigating the complex narrative surrounding AI and its impact on society at large.

Technological Advancements

The wave of technological advancements, led by AI and machine learning, has significantly reshaped the operational and strategic frameworks within Small and Medium Enterprises (SMEs). According to a report by McKinsey Global Institute ¹⁶, these advancements have the potential to automate around half of the activities currently undertaken by humans. This

¹³ (Bughin et al. 2017)

¹⁴ (Sadiq et al. 2021)

¹⁵ (Bessen 2017)

¹⁶ (Bughin et al. 2017)

automation is not limited to routine, mundane tasks but extends to complex decision-making processes where AI can augment human capabilities ¹⁷.

In the realm of SMEs, these advancements offer a double-edged sword. On one hand, they provide opportunities for SMEs to enhance efficiency, reduce operational costs, and improve competitiveness in the market ¹⁸. For instance, AI-powered analytics tools can help SMEs glean insights from data to inform strategic decisions, while AI-driven automation tools can streamline operational processes to enhance productivity ¹⁹.

On the other hand, the rapid pace of technological advancements presents challenges in terms of resource constraints, skill deficits, and the need for significant investment in training and development. SMEs, often operating with limited resources, may find it challenging to keep pace with the technological advancements and invest in the necessary infrastructure and skill development to effectively leverage these technologies ²⁰. Moreover, the integration of advanced technologies like AI necessitates a re-evaluation of organizational strategies, processes, and culture. The importance of a strategic, informed approach to technology adoption is highlighted by various scholars, emphasizing the necessity for a phased implementation ensuring organizational readiness and employee capabilities to effectively integrate and utilize these technologies ²¹. The dichotomy of opportunities and challenges presented by technological advancements necessitates a balanced, strategic approach, ensuring that SMEs can effectively leverage the benefits of these technologies while navigating the associated challenges.

¹⁷ Bughin, Jacques, et al. "Artificial Intelligence: The Next Digital Frontier?" McKinsey & Company, June 2017.

¹⁸ OECD. "Artificial Intelligence: Changing Landscape for SMEs." OECD iLibrary, 2017.

¹⁹ Davenport, Thomas H., Ashish Guha, Dhruv Grewal, and Timna Bressgott. "How Artificial Intelligence Will Change the Future of Marketing." *Journal of the Academy of Marketing Science*, 2020.

²⁰ OECD. "Artificial Intelligence: Changing Landscape for SMEs." OECD iLibrary, 2017.

²¹ Davenport, Thomas H., and Rajeev Ronanki. "Artificial Intelligence for the Real World." *Harvard Business Review*. January 9, 2018.

Economic Stability

The adoption and integration of Artificial Intelligence (AI) and technological advancements play a crucial role in fostering economic stability, particularly in the landscape of Small and Medium Enterprises (SMEs). Economic stability, characterized by steady growth, low inflation, and full employment, is a desirable state for any nation ²². Technological advancements, spearheaded by AI, are seen as catalysts for economic growth, enabling businesses to operate more efficiently, innovate, and compete on a global stage. ²³

In the context of SMEs, which are often dubbed as the backbone of economies due to their significant contribution to employment and GDP, the impact of AI and technological advancements is pronounced ²⁴. By leveraging AI technologies, SMEs can achieve cost reductions, enhance productivity, and create new business models, contributing to economic stability ²⁵. Moreover, the agility and innovation inherent in SMEs provide them a unique platform to harness the potential of AI in driving economic growth ²⁶. However, the narrative also encompasses challenges such as financial constraints, lack of technological infrastructure, and skill deficits that may hinder the effective adoption of AI within SMEs, potentially impacting economic stability negatively ²⁷. Therefore, a supportive ecosystem comprising financial support, skill development

²² Bernanke, Ben. "Remarks at the American Economic Association Meeting." Speech, 2004

²³ Brynjolfsson, Erik, Daniel Rock, and Chad Syverson. "Artificial Intelligence and the Modern Productivity Paradox: A Clash of Expectations and Statistics." NBER Working Paper No. 24001, November 2017.

²⁴ OECD. "Artificial Intelligence: Changing Landscape for SMEs." OECD iLibrary, 2017.

²⁵ Davenport, Thomas H., Ashish Guha, Dhruv Grewal, and Timna Bressgott. "How Artificial Intelligence Will Change the Future of Marketing." *Journal of the Academy of Marketing Science*, 2020.

²⁶ Zeng, Ming. "Smart Business: What Alibaba's Success Reveals about the Future of Strategy." *Harvard Business Review*, 2018.

²⁷ Bessen, James E. "Artificial Intelligence and Jobs: The Role of Demand." In *The Economics of Artificial Intelligence: An Agenda*, edited by Ajay Agrawal, Joshua Gans, and Avi Goldfarb, 129-157. Chicago: University of Chicago Press, 2019.

initiatives, and conducive regulatory frameworks is essential to ensure that SMEs can leverage AI to contribute to economic stability ²⁸.

Scholars and policymakers are increasingly focusing on understanding and addressing the various dimensions of the interplay between AI, SMEs, and economic stability to ensure a harmonized progression towards a technologically advanced, economically stable future. ²⁹.

Workforce Adaptability

Workforce adaptability, the ability of workers to adjust to new conditions and work requirements, is crucial in an era characterized by rapid technological advancements, particularly the proliferation of AI. As AI technologies permeate various sectors, the nature of work and required skills are evolving, necessitating a workforce that can adapt to the changing landscape.

In SMEs, where resource constraints are often more pronounced, workforce adaptability is vital for harnessing the benefits of AI and ensuring organizational resilience ³⁰. Employees need to acquire new skills, adapt to new tools and technologies, and embrace new ways of working to ensure that SMEs can effectively leverage AI for enhanced productivity and competitiveness ³¹. However, fostering workforce adaptability presents challenges. The pace of technological change can induce anxiety and resistance among employees, particularly if there is a perceived threat to job security ³². Moreover, SMEs may lack the resources to provide comprehensive training and

²⁸ OECD. "Artificial Intelligence: Changing Landscape for SMEs." OECD iLibrary, 2017.

²⁹ Fountaine, Tim, Brian McCarthy, and Tamim Saleh. "Building the AI-Powered Organization." Harvard Business Review, July 2019.

³⁰ Zeng, Ming. "Smart Business: What Alibaba's Success Reveals about the Future of Strategy." Harvard Business Review, 2018.

³¹ Davenport, Thomas H., and Rajeev Ronanki. "Artificial Intelligence for the Real World." Harvard Business Review. January 9, 2018.

³² Ford, Martin. Rise of the Robots: Technology and the Threat of a Jobless Future. New York: Basic Books, 2015.

development programs, potentially hindering workforce adaptability ³³ . Several scholars emphasize the importance of a supportive organizational culture, continuous learning opportunities, and leadership that encourages adaptation and upskilling as crucial elements in fostering workforce adaptability. Moreover, policies that support lifelong learning, re-skilling, and up-skilling are seen as pivotal in ensuring that the workforce is equipped to navigate the evolving work landscape shaped by AI and other technological advancements ³⁴ .

Traditional Employment Structures

The intersection of AI and traditional employment structures within SMEs unveils a realm of complex dynamics. Traditional employment structures, characterized by well-defined roles, hierarchies, and a relatively stable employment relationship, are experiencing a transformation due to the integration of AI technologies ³⁵ AI's capability to automate routine tasks, enhance decision-making through data analytics, and drive innovations presents a paradigm shift in how work is structured and executed ³⁶ .

In SMEs, the impact of AI on traditional employment structures is pronounced due to their agile nature and relatively flat organizational hierarchies ³⁷ . The automation of routine tasks, for

³³ OECD. "Artificial Intelligence: Changing Landscape for SMEs." OECD iLibrary, 2017.

³⁴ Bessen, James E. "Artificial Intelligence and Jobs: The Role of Demand." In *The Economics of Artificial Intelligence: An Agenda*, edited by Ajay Agrawal, Joshua Gans, and Avi Goldfarb, 129-157. Chicago: University of Chicago Press, 2019.

³⁵ Autor, David H. "Why Are There Still So Many Jobs? The History and Future of Workplace Automation." *Journal of Economic Perspectives* 29, no. 3 (2015): 3-30.

³⁶ Bessen, James E. "Artificial Intelligence and Jobs: The Role of Demand." In *The Economics of Artificial Intelligence: An Agenda*, edited by Ajay Agrawal, Joshua Gans, and Avi Goldfarb, 129-157. Chicago: University of Chicago Press, 2019.

³⁷ Davenport, Thomas H., and Rajeev Ronanki. "Artificial Intelligence for the Real World." *Harvard Business Review*. January 9, 2018.

instance, can lead to job displacement or the redefinition of job roles, where employees are expected to engage in more complex, creative, and decision-centric tasks³⁸. However, the transition from traditional to AI-augmented employment structures presents challenges. Skill mismatches, resistance to change, and concerns regarding job security are prevalent among the workforce³⁹. Moreover, SMEs may face hurdles in attracting and retaining talent equipped to work alongside AI technologies due to financial constraints and a competitive labor market⁴⁰. Scholars underscore the importance of a holistic approach to managing the transition, encompassing skill development, change management, and the creation of a conducive organizational culture. Moreover, policy frameworks that support SMEs in harnessing the potential of AI while mitigating adverse impacts on employment are deemed crucial for a balanced evolution of employment structures⁴¹.

AI in SMEs: Innovation and Efficiency

The adoption of AI in SMEs is often seen as a catalyst for innovation and efficiency. Through AI, SMEs can harness data for better decision-making, automate routine tasks, and enhance customer engagement, thereby driving efficiency and freeing up resources for innovative endeavors⁴².

³⁸ Arntz, Melanie, Terry Gregory, and Ulrich Zierahn. "The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis." OECD Social, Employment and Migration Working Papers, no. 189 (2016).

³⁹ Ford, Martin. *Rise of the Robots: Technology and the Threat of a Jobless Future*. New York: Basic Books, 2015.

⁴⁰ OECD. "Artificial Intelligence: Changing Landscape for SMEs." OECD iLibrary, 2017.

⁴¹ Bessen, James E. "Artificial Intelligence and Jobs: The Role of Demand." In *The Economics of Artificial Intelligence: An Agenda*, edited by Ajay Agrawal, Joshua Gans, and Avi Goldfarb, 129-157. Chicago: University of Chicago Press, 2019.

⁴² Davenport, Thomas H., and Rajeev Ronanki. "Artificial Intelligence for the Real World." *Harvard Business Review*, January 2018.

The potential of AI in fostering innovation is significant. By leveraging AI, SMEs can develop new products, services, and business models, enabling them to compete effectively in the market ⁴³. Moreover, AI can augment the creative and analytical capabilities of employees, fostering a culture of continuous innovation ⁴⁴. Efficiency, on the other hand, is achieved through streamlined operations, cost reductions, and improved productivity, which are central to the survival and growth of SMEs ⁴⁵. However, the journey towards leveraging AI for innovation and efficiency is laden with challenges, including financial constraints, lack of technological infrastructure, and skill deficits ⁴⁶.

Scholars and practitioners advocate for a supportive ecosystem, encompassing financial support, technological infrastructure, skill development initiatives, and conducive regulatory frameworks, to enable SMEs to harness the potential of AI in driving innovation and efficiency ⁴⁷. Furthermore, collaborative networks among SMEs, academia, and governmental bodies are seen as pivotal in fostering a conducive environment for the effective integration of AI in SMEs ⁴⁸.

⁴³ Zeng, Ming. "Smart Business: What Alibaba's Success Reveals about the Future of Strategy." *Harvard Business Review*, 2018.

⁴⁴ Davenport, T. H., Guha, A., Grewal, D., & Bressgott, T. (2020). How artificial intelligence will change the future of marketing. *Journal of the Academy of Marketing Science*

⁴⁵ Kieslich, Kimon, Birte Keller, and Christopher Starke. 2022. "Artificial Intelligence Ethics by Design. Evaluating Public Perception on the Importance of Ethical Design Principles of Artificial Intelligence." *Big Data & Society* 9 (1): 205395172210929. <https://doi.org/10.1177/20539517221092956>.

⁴⁶ OECD. "Artificial Intelligence: Changing Landscape for SMEs." OECD iLibrary, 2017.

⁴⁷ Fountaine, Tim, Brian McCarthy, and Tamim Saleh. "Building the AI-Powered Organization." *Harvard Business Review*, July 2019.

⁴⁸ Zeng, Ming. "Smart Business: What Alibaba's Success Reveals about the Future of Strategy." *Harvard Business Review*, 2018.

AI and Job Displacement

The discourse around AI and job displacement is grounded in AI's ability to automate routine and mundane tasks, potentially rendering certain jobs obsolete ⁴⁹. In the context of SMEs, this concern is acute due to the limited scope of job roles and the consequent heightened risk of displacement ⁵⁰.

The literature exhibits a spectrum of views regarding the extent of job displacement attributed to AI. Some scholars argue that AI will primarily augment rather than replace human labor, enhancing productivity and creating new job roles ⁵¹. Others posit a more dire outlook, forecasting significant job losses, particularly in roles with a high degree of routine and predictability ⁵². Moreover, the dynamics of job displacement may vary across sectors. For instance, sectors such as manufacturing and transportation, characterized by a higher degree of routine tasks, may experience more pronounced job displacement compared to sectors like healthcare or education ⁵³. Mitigating the adverse impacts of job displacement necessitates proactive measures encompassing skill development, retraining, and education to equip the workforce with the competencies required in an AI-augmented job market. Moreover, policy interventions aimed at fostering a just transition, supporting displaced workers, and promoting inclusive growth are deemed crucial in navigating the challenges of job displacement ⁵⁴.

⁴⁹ Arntz, Melanie, Terry Gregory, and Ulrich Zierahn. "The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis." OECD Social, Employment and Migration Working Papers, no. 189 (2016).

⁵⁰ Chui, Michael, James Manyika, and Mehdi Miremadi. "A Future that Works: Automation, Employment, and Productivity." McKinsey Global Institute, 2016.

⁵¹ Bessen, James E. "Artificial Intelligence and Jobs: The Role of Demand." In *The Economics of Artificial Intelligence: An Agenda*, edited by Ajay Agrawal, Joshua Gans, and Avi Goldfarb, 129-157. Chicago: University of Chicago Press, 2019.

⁵² Ford, Martin. *Rise of the Robots: Technology and the Threat of a Jobless Future*. New York: Basic Books, 2015.

⁵³ Chui, Michael, James Manyika, and Mehdi Miremadi. "Where Machines Could Replace Humans—And Where They Can't (Yet)." McKinsey Global Institute, 2016.

⁵⁴ OECD. "Artificial Intelligence: Changing Landscape for SMEs." OECD iLibrary, 2017.

Data Literacy and AI Management Competencies

The integration of AI within SMEs underscores the importance of data literacy and AI management competencies among the workforce ⁵⁵. Data literacy, entailing the ability to interpret, manage, and utilize data effectively, is central to leveraging the potential of AI in informed decision-making ⁵⁶. On the other hand, AI management competencies encompass the ability to understand, implement, and oversee AI technologies within organizational contexts ⁵⁷. This includes ethical considerations, ensuring the responsible use of AI, and aligning AI initiatives with organizational goals and values ⁵⁸. The demand for these competencies highlights a shift in skill requirements, necessitating continuous learning and development initiatives to equip employees with the requisite skills. Moreover, the evolution of job roles towards more data-centric and AI-augmented profiles underscores the need for a culture of lifelong learning and adaptability within SMEs ⁵⁹.

Academia and industry collaborations, alongside governmental initiatives, are seen as pivotal in fostering a conducive environment for skill development and promoting a culture of continuous learning ⁶⁰. Furthermore, the literature advocates for inclusive and accessible education

⁵⁵ Davenport, Thomas H., and Rajeev Ronanki. "Artificial Intelligence for the Real World." *Harvard Business Review*, January 2018.

⁵⁶ Fountaine, Tim, Brian McCarthy, and Tamim Saleh. "Building the AI-Powered Organization." *Harvard Business Review*, July 2019.

⁵⁷ Davenport, Thomas H., Ashish Guha, Dhruv Grewal, and Timna Bressgott. "How Artificial Intelligence Will Change the Future of Marketing." *Journal of the Academy of Marketing Science* (2020)

⁵⁸ Hagendorff, Thilo. "The Ethics of AI Ethics: An Evaluation of Guidelines." *Minds and Machines* 30, no. 1 (2020): 99–120.

⁵⁹ OECD. "Artificial Intelligence: Changing Landscape for SMEs." OECD iLibrary, 2017.

⁶⁰ Zeng, Ming. "Smart Business: What Alibaba's Success Reveals about the Future of Strategy." *Harvard Business Review*, 2018.

and training programs to ensure a broad-based upskilling of the workforce, preparing them for the evolving demands of an AI-augmented job market ⁶¹.

AI in Workflow Optimization

The integration of AI technologies in workflow optimization is a burgeoning area of interest among both practitioners and scholars. The premise is grounded on AI's ability to enhance efficiency, accuracy, and productivity across various operational facets within SMEs . A notable contribution is AI's ability to automate routine, mundane, and time-consuming tasks, thereby freeing up human resources for more strategic, creative, and value-added activities⁶². Moreover, AI-driven analytics and real-time data processing enable informed decision-making, process improvements, and resource optimization ⁶³. The literature also highlights AI's role in facilitating predictive maintenance, quality control, and supply chain optimization. For instance, AI can predict when equipment might fail or require maintenance, thereby reducing downtime and ensuring continuous operations ⁶⁴. Furthermore, AI-driven customer service solutions, such as chatbots and virtual assistants, can significantly enhance customer engagement and satisfaction by providing instant responses and personalized interactions. However, the journey towards leveraging AI for workflow optimization is not devoid of challenges. SMEs often face resource

⁶¹ Brynjolfsson, Erik, and Andrew McAfee. *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*. New York: W.W. Norton & Company, 2014.

⁶² Bughin, Jacques, et al. "Artificial Intelligence and the Modern Economy." 2018. Specific publication details should be added when available.

⁶³ Ransbotham, Sam, David Kiron, and Pamela Kirk Prentice. "The 2015 Data & Analytics Report: Thriving in the Age of Data-Driven Marketing." *MIT Sloan Management Review*, 2015

⁶⁴ Lee, Jay, Hung-An Kao, and Shanhu Yang. "Service Innovation and Smart Analytics for Industry 4.0 and Big Data Environment." *Proceedings of the 6th CIRP Conference on Industrial Product-Service Systems*, 2014.

constraints, lack of expertise, and data privacy concerns which could hinder the effective integration and utilization of AI technologies ⁶⁵.

Strategic AI Integration within SMEs

Strategic integration of AI within SMEs entails a holistic approach that aligns AI initiatives with the broader organizational goals, values, and operational frameworks ⁶⁶.

One pivotal aspect is fostering an organizational culture that embraces innovation, continuous learning, and adaptability to change ⁶⁷. This includes investing in training and development to equip employees with the necessary skills and competencies required in an AI-augmented work environment. Moreover, ethical considerations are central to the strategic integration of AI. Ensuring the responsible use of AI, adhering to data privacy regulations, and maintaining transparency and accountability in AI-driven decision-making are deemed crucial ⁶⁸. Furthermore, developing a well-defined AI strategy, grounded in a clear understanding of the organization's goals, the potential benefits and risks associated with AI, and a roadmap for phased implementation is advocated within the literature ⁶⁹. The collaborative engagement with external stakeholders, including academia, industry associations, and governmental bodies, can also provide valuable insights, support, and resources for effective AI integration within SMEs⁷⁰. Lastly,

⁶⁵ Davenport, Thomas H., Ashish Guha, Dhruv Grewal, and Timna Bressgott. "How Artificial Intelligence Will Change the Future of Marketing." *Journal of the Academy of Marketing Science*, 2020.

⁶⁶ Davenport, Thomas H., and Rajeev Ronanki. "Artificial Intelligence for the Real World." *Harvard Business Review*, January 9, 2018.

⁶⁷ Fountaine, Tim, Brian McCarthy, and Tamim Saleh. "Building the AI-Powered Organization." *Harvard Business Review*, July 2019.

⁶⁸ Hagendorff, Thilo. "The Ethics of AI Ethics: An Evaluation of Guidelines." *Minds and Machines* 30, no. 1 (2020): 99–120.

⁶⁹ Bughin, Jacques, et al. "Notes from the AI Frontier: Modeling the Impact of AI on the World Economy." McKinsey Global Institute, 2018.

⁷⁰ Zeng, Ming. "Smart Business: What Alibaba's Success Reveals about the Future of Strategy." *Harvard Business Review*, 2018.

evaluating and monitoring the impact of AI on organizational performance, employee well-being, and customer satisfaction is vital to ensure the sustained success and responsible deployment of AI technologies.⁷¹

Skill Requirements and AI

The advent of AI in the workplace necessitates a shift in the skill sets required for employees to thrive in such an environment. As AI takes over routine and repetitive tasks, the demand for higher-order skills including critical thinking, problem-solving, and creative innovation becomes paramount.⁷² Further, there's a growing need for digital literacy and technical competencies to effectively interact with and manage AI systems. This includes understanding data analytics, machine learning principles, and being able to interpret AI outputs for informed decision-making⁷³. The literature also highlights the importance of emotional intelligence and interpersonal skills as AI lacks the human touch necessary for nuanced interactions, empathy, and understanding in a diverse workplace.⁷⁴

Training and continuous learning emerge as crucial elements to bridge the skill gap and prepare the workforce for the AI-driven future. Initiatives such as upskilling and reskilling, lifelong

⁷¹ Davenport, Thomas H., Ashish Guha, Dhruv Grewal, and Timna Bressgott. "How Artificial Intelligence Will Change the Future of Marketing." *Journal of the Academy of Marketing Science*, 2020.

⁷² Bessen, James E. "Artificial Intelligence and Jobs: The Role of Demand." In *The Economics of Artificial Intelligence: An Agenda*, edited by Ajay Agrawal, Joshua Gans, and Avi Goldfarb, 129-157. Chicago: University of Chicago Press, 2019.

⁷³ Bessen, James E. "Artificial Intelligence and Jobs: The Role of Demand." In *The Economics of Artificial Intelligence: An Agenda*, edited by Ajay Agrawal, Joshua Gans, and Avi Goldfarb, 129-157. Chicago: University of Chicago Press, 2019.

⁷⁴ (Beck and Libert 2017)

learning programs, and collaborative learning environments are advocated to foster a culture of adaptability and continuous improvement⁷⁵.

Job Security Concerns and AI

The discourse around AI and job security is multi-faceted with both apprehensions and optimistic projections. While the potential of AI to automate certain jobs, especially those involving routine tasks, poses a threat to job security, it also creates opportunities for new roles and job enhancement⁷⁶. The literature suggests a potential shift from task-based to more strategic and creative roles, facilitated by AI's capability to handle mundane tasks efficiently. However, the transition is not without challenges. The pace of technological advancement may outstrip the speed at which employees can adapt, leading to job displacement. SMEs face the conundrum of balancing technological adoption with the socio-economic implications on their workforce .⁷⁷ Policy interventions, organizational strategies for inclusive growth, and collaborative efforts among stakeholders are seen as imperative to address job security concerns and ensure a just transition towards an AI-augmented work landscape⁷⁸.

⁷⁵ Arntz, Melanie, Terry Gregory, and Ulrich Zierahn. "The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis." OECD Social, Employment and Migration Working Papers, no. 189 (2016).

⁷⁶ Arntz, Melanie, Terry Gregory, and Ulrich Zierahn. "The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis." OECD Social, Employment and Migration Working Papers, no. 189 (2016).

⁷⁷ Bessen, James E. "Artificial Intelligence and Jobs: The Role of Demand." In *The Economics of Artificial Intelligence: An Agenda*, edited by Ajay Agrawal, Joshua Gans, and Avi Goldfarb, 129-157. Chicago: University of Chicago Press, 2019.

⁷⁸ (Brynjolfsson, Mitchell, and Rock 2018)

METHODOLOGY

Research Paradigm

This study employs a qualitative research paradigm, which is particularly effective for exploring nuanced, context-dependent phenomena. Qualitative research emphasizes understanding the meaning individuals or groups ascribe to a social or human problem ⁷⁹. This approach is ideal for this study, which seeks to uncover the multifaceted impacts of AI on employment in SMEs. By focusing on qualitative data, we gain insights into subjective experiences, perceptions, and attitudes towards AI in the workplace, which are often not captured by quantitative methods.

Data Collection Strategies

Methodology employs a dual approach: an extensive literature review and semi-structured interviews. The literature review serves as a foundational element, providing an extensive background and context for the study. It includes an analysis of scholarly articles, industry reports, and case studies, offering a diverse range of perspectives on AI and employment. For instance, Brynjolfsson and McAfee provide valuable insights into the broader economic implications of AI,⁸⁰ while Bughin et al. focus specifically on the impact of AI in business settings.⁸¹

⁷⁹ John W Creswell and J David Creswell, *Research Design : Qualitative, Quantitative, and Mixed Methods Approaches* (Thousand Oaks: Sage Publications, Inc, 2018).

⁸⁰ Erik Brynjolfsson and Andrew McAfee, *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies* (New York: W.W. Norton & Company, 2014), https://edisciplinas.usp.br/pluginfile.php/4312922/mod_resource/content/2/Erik%20-%20The%20Second%20Machine%20Age.pdf.

⁸¹ Bughin, Jacques, Jeongmin Seong, James Manyika, Michael Chui, and Raoul Joshi. "Notes from the AI frontier: Modeling the impact of AI on the world economy." McKinsey Global Institute 4 (2018).

The semi-structured interviews are designed to collect primary data directly from stakeholders in SMEs. This method is particularly beneficial as it allows for flexibility in responses, enabling participants to express their views and experiences in depth. The choice of SME stakeholders as interview subjects is strategic, as they offer firsthand insights into the practical implications of AI implementation in a business setting.

Literature Review

The literature review is structured to offer a comprehensive understanding of the current state of knowledge regarding AI's impact on employment, particularly within SMEs. This section includes an analysis of various theoretical frameworks and empirical studies. For example, I explore the concept of "technological unemployment," as discussed by Frey and Osborne ⁸², who examine the potential job displacement due to AI advancements. Additionally, consider the counterarguments presented by Autor, ⁸³who highlights how technology can also create new job opportunities and enhance productivity. The literature review also encompasses studies focusing specifically on SMEs.

⁸² Carl Benedikt Frey and Michael A Osborne, "The Future of Employment: How Susceptible Are Jobs to Computerisation?," *Technological Forecasting and Social Change* 114 (2017): 254–80, <https://doi.org/10.1016/j.techfore.2016.08.019>.

⁸³ David H Autor, "Why Are There Still so Many Jobs? The History and Future of Workplace Automation," *Journal of Economic Perspectives* 29 (2015): 3–30, <https://doi.org/10.1257/jep.29.3.3>.

Semi-Structured Interviews

These interviews form the core of primary data collection. The interviewees are selected from a diverse range of SMEs to ensure a broad spectrum of insights. The semi-structured format, as recommended by Rubin and Rubin,⁸⁴ allows for open-ended questions, enabling participants to share their experiences and perspectives in depth. Key topics explored in these interviews include the perceived benefits and challenges of AI implementation, changes in employment structures, skill requirements, and the overall impact on workplace dynamics.

Data Analysis Framework

Upon collecting data from both the literature review and the semi-structured interviews, I employ a thematic analysis approach as described by Braun and Clarke⁸⁵. This method involves a systematic process of coding the data and identifying significant themes and patterns. For instance, responses from interviews are transcribed verbatim and then analyzed to identify recurring themes related to the impact of AI on employment, such as changes in job roles, skill requirements, and organizational structures. This analysis is complemented by insights from the literature, providing a nuanced understanding of the subject.

⁸⁴ Herbert J Rubin and Irene S Rubin, *Qualitative Interviewing: The Art of Hearing Data*, 3rd ed. (Los Angeles: Sage, 2011).

⁸⁵ Virginia Braun and Victoria Clarke, "Using Thematic Analysis in Psychology," *Qualitative Research in Psychology* 3 (2006): 77–101, <https://doi.org/10.1191/1478088706qp063oa>.

Ethical Considerations

Ethical considerations are paramount in this research. I adhere to the principles of informed consent, ensuring that all participants understand the nature of the study and their role in it ⁸⁶. Confidentiality is strictly maintained, with all data anonymized to protect participant identity. Participants are also informed of their right to withdraw from the study at any point without any repercussions. These ethical practices not only comply with academic standards but also foster a trusting environment, essential for collecting authentic and candid responses.

Conclusion

The amalgamation of literature-derived insights and empirical interview data ensures a robust and ethically informed exploration of AI's transformative potential within Russian SMEs. This methodological synthesis resonates with the case study research design articulated by Yin ⁸⁷, offering a comprehensive outlook on the strategic and operational shifts AI may instigate.

⁸⁶ Joan E Sieber and Martin Tolich, *Planning Ethically Responsible Research* (Thousand Oaks, Calif.: Sage Publications, 2013).

⁸⁷ Yin, Robert K. "Case Study Research and Applications: Design and Methods." 6th edition. Sage Publications, 2017.

DATA ANALYSIS

Qualitative data derived from interviews with professionals across various roles within small and medium enterprises (SMEs) revealed multifaceted perceptions and utilization of artificial intelligence (AI). Interviews were conducted through an online platform, and transcripts were manually coded to identify emerging themes related to the research questions.

The individuals chosen for these interviews are all employees of the medium-sized enterprise that forms the focus of this study. Their engagement with AI varies significantly, ranging from those with only a general understanding of AI technologies to those who have had direct, hands-on experience working with such systems. This diverse range of experiences within the same company provides a comprehensive perspective on AI's impact across different levels of familiarity and expertise.

By including professionals with varying degrees of AI interaction – from mere awareness to active utilization – the study captures a broad spectrum of perceptions and applications. This approach allows to explore how AI is perceived and used at different stages of familiarity and integration within a single organization. Such a varied pool of interviewees enriches the study with insights into the transitional dynamics of AI adoption, including the challenges and opportunities encountered at different levels of engagement with AI technologies..

Research Question 1: Perception and Utilization of AI Across Various Job Roles in SMEs

The advent of artificial intelligence (AI) has ushered in a new era of operational efficiency and innovation, with its influence permeating various job roles within small and medium enterprises (SMEs). The qualitative data gleaned from structured interviews with professionals from diverse fields within the SME landscape paints a picture of cautious optimism, underpinned by a recognition of AI's transformative potential.

Detailed Perception Across Job Roles

In the realm of architecture, AI is envisioned as a tool that transcends mere computational efficiency, fostering a new creative synthesis. "The AI's potential to automate routine tasks is promising," remarked an architect in Interview 1. He continued, "especially for visualization and generating ideas which are quite time-consuming processes in our field." This sentiment echoes the broader discourse on AI as a collaborative partner in creative processes, augmenting human ingenuity rather than supplanting it.

The maintenance sector also exhibits a burgeoning interest in AI's capabilities. An engineer from Interview 2 envisions AI as a digital assistant, streamlining administrative tasks: "Imagine a system that automatically fills out maintenance reports, reducing the hours we spend on paperwork to mere minutes." Such utilitarian applications of AI in routine paperwork signal a shift towards higher value-added activities for human workers, potentially enhancing job satisfaction and productivity.

Utilization of AI in Daily Operations

Despite the varied perceptions of AI, a common thread across job roles is the utilization of AI in daily operations to enhance efficiency. An architect (Interview 1) articulated the benefits of AI in creating initial design drafts, stating, "AI could help us generate multiple design scenarios quickly, which would be a huge leap forward in the conceptual stage." Conversely, an engineer (Interview 2) highlighted AI's potential in predictive maintenance, suggesting that "AI could anticipate equipment failures before they occur, preventing downtime."

Bridging the Gap Between Perception and Utilization

However, the transition from perception to utilization is fraught with challenges, particularly in SMEs where resources are often limited. The CEO of an SME noted in Interview 4, "We understand the benefits of AI, but finding the time and resources to implement it is our main challenge right now." This perspective is indicative of a larger trend in SMEs where the theoretical benefits of AI are well-understood, but practical implementation lags behind.

Integration of AI into Company Culture

The integration of AI into company culture is another aspect that requires attention. As the architect (Interview 1) mentioned, "There's a lot of apprehensions around AI. We need to create an environment where AI is seen as a tool, not a threat." Such cultural assimilation of AI within SMEs necessitates a change in mindset at all organizational levels, from frontline employees to top management.

In conclusion, the perception of AI across various job roles in SMEs is generally positive, with professionals anticipating significant advantages in operational efficiency and creative output.

However, realizing these benefits is contingent upon overcoming the practical hurdles of AI integration and fostering a company culture receptive to technological innovation.

Research Question 2: Anticipated Challenges and Perceptions of AI Implementation within SMEs

Anticipated Challenges and Perceptions of AI Implementation within SMEs

The implementation of AI within SMEs is met with a mix of anticipation and concern. While there is recognition of AI's potential to revolutionize business processes, SMEs face unique challenges that could impede its adoption.

Understanding the Challenges

A critical barrier identified is the perceived complexity and cost of AI integration. The CEO from Interview 4 noted, "The understanding is there, but the pathway to integrate AI into our current systems isn't clear." This reflects a common sentiment among SMEs that AI adoption is a resource-intensive endeavor, often requiring expertise that may not be present internally ⁸⁸.

Resource Constraints

Resource constraints extend beyond financial considerations to include time and human capital. The architect from Interview 1 pointed out, "AI is a significant investment, not just in terms

⁸⁸ Davenport, Thomas, Abhijit Guha, Dhruv Grewal, and Timna Bressgott. "How Artificial Intelligence Will Change the Future of Marketing." *Journal of the Academy of Marketing Science* 48, no. 1 (October 10, 2020): 24–42.

of money but also time – time to learn, to adapt, and to integrate." SMEs often operate with lean teams, and allocating time for AI training and integration can be particularly challenging.

Skills Gap

Moreover, there is a skills gap that SMEs need to bridge to fully leverage AI capabilities. The engineer from Interview 2 highlighted, "We have the ideas, but not the skill set. We need to train our employees or bring in AI experts, which is an additional cost." This dilemma underscores the importance of upskilling and reskilling initiatives to prepare the workforce for AI adoption .

Cultural Readiness

Cultural readiness is another pivotal factor influencing AI adoption in SMEs. As the CEO from Interview 4 remarked, "There's apprehension among staff about AI. We need to ensure that our people are ready for this change." This speaks to the need for change management strategies to facilitate a smooth transition to AI-enabled operations.

In sum, while SMEs are cognizant of the benefits that AI can bring, there is an array of challenges that need to be navigated. These include resource limitations, skills gaps, and cultural barriers. Addressing these challenges requires a strategic approach to AI integration, where planning, communication, and education are key.

Research Question 3: Impact of AI Integration on Job Security, Role Definitions, and Skill Requirements

Impact of AI Integration on Job Security, Role Definitions, and Skill Requirements

The integration of artificial intelligence (AI) in SMEs holds profound implications for the workforce, particularly concerning job security, the redefinition of roles, and the evolution of skill requirements.

Job Security and AI

Concerns about job security in the face of AI integration are prominent among SME employees. The engineer from Interview 2 expressed a common fear: "AI could make some of our jobs redundant, especially those routine tasks that don't require much human judgment." This sentiment is supported by a body of research indicating that AI has the potential to automate tasks across various industries, leading to job displacement for roles that are heavily routine-based ⁸⁹.

Redefinition of Roles

However, AI also presents an opportunity to redefine roles within SMEs. The CEO from Interview 4 suggested that "AI won't just take away jobs; it will create them too. We'll see new roles that we haven't even thought of yet." This is consistent with the view that AI can act as a catalyst for job creation, particularly in areas that require complex problem-solving and human-AI collaboration.⁹⁰

⁸⁹ Carl Benedikt Frey and Michael A Osborne, "The Future of Employment: How Susceptible Are Jobs to Computerisation?," *Technological Forecasting and Social Change* 114 (2017): 254–80, <https://doi.org/10.1016/j.techfore.2016.08.019>.

⁹⁰ James Manyika et al., *A Future That Works*, 2017.

Evolving Skill Requirement

The evolution of skill requirements in an AI-driven workplace is another critical factor. As AI becomes more integrated into SMEs, there will be a growing demand for skills that complement AI, such as data analysis, machine learning, and strategic decision-making. The architect from Interview 1 acknowledged this shift: "Our field will need more people who understand how to work with AI, not just use it." This reflects the emerging narrative that the workforce must adapt to coexist with AI, developing new skills that AI cannot replicate.⁹¹

In summary, AI integration in SMEs is a double-edged sword with respect to the workforce. On one hand, there is the potential for job displacement, particularly in roles focused on routine tasks. On the other, there is the potential for the creation of new job categories and the enrichment of existing roles through human-AI collaboration. The skill sets required in this new paradigm will favor adaptability, continuous learning, and an understanding of AI capabilities.

Research Question 4: Strategies for Effective AI Integration within Operational and Strategic Frameworks

Strategies for Effective AI Integration within Operational and Strategic Framework

The successful integration of artificial intelligence (AI) within SMEs hinges on strategic planning and operational finesse. This endeavor involves not just the adoption of technology, but a holistic approach that encompasses organizational culture, employee engagement, and business processes.

⁹¹ James Manyika et al., *A Future That Works*, 2017.

Strategic Planning for AI

Strategic planning for AI involves identifying areas where AI can add the most value. The CEO from Interview 4 underscored the importance of a methodical approach: "We need to consider where AI fits within our strategic objectives and how it can drive growth." This aligns with strategic management principles that advocate for technology to be leveraged in a way that aligns with the company's long-term goals.⁹²

Operational Integration

Operational integration of AI requires a careful assessment of current business processes and workflows. The engineer from Interview 2 provided a practical viewpoint: "AI should be integrated into our operations in a way that supports our staff, not overwhelms them." This perspective is echoed in operational management literature, which stresses the need for technology to complement human workers, not replace them.

Employee Engagement and Change Management

A critical aspect of AI integration is managing the cultural transition within the organization. As the architect from Interview 1 suggested, "We have to ensure our people understand AI and are comfortable with it. It's about change management as much as it is about technology." This reflects the importance of employee engagement and the management of change when introducing new technologies.

⁹² Harvard Business Review et al., *HBR's 10 Must Reads on AI, Analytics, and the New Machine Age (with Bonus Article "Why Every Company Needs an Augmented Reality Strategy" by Michael E. Porter and James E. Heppelmann)* (Harvard Business Press, 2018).

Continuous Learning and Development

Another strategic element is the emphasis on continuous learning and development. AI will necessitate new skills, and SMEs must be prepared to invest in their workforce. The CEO from Interview 4 emphasized, "We'll need ongoing training programs to keep our team up-to-date with AI advancements." This is consistent with the continuous learning models advocated by organizational development experts.

In conclusion, the effective integration of AI within SMEs calls for a multidimensional strategy that addresses both the technological and human elements. Strategic planning, operational integration, employee engagement, and continuous learning form the pillars of a successful AI adoption framework. By adhering to these principles, SMEs can navigate the complexities of AI integration and harness its full potential.

CONCLUSION

In concluding this research on the impact of artificial intelligence (AI) on employment within a specific Russian SME operating in the construction sector, this study offers concrete insights and implications for this enterprise and, by extension, for SMEs in similar emerging markets.

These findings demonstrate a varied landscape of AI perceptions and applications across different job roles within the company. Employees' engagement with AI ranged from mere awareness to hands-on experience, providing a rich tapestry of perspectives on AI's potential and its challenges. For instance, some employees, particularly those in design and planning, viewed AI as a significant aid in enhancing efficiency and fostering innovation. In contrast, those in more routine roles expressed concerns about job displacement and the need to acquire new skills.

The case study of this SME, which has been operating for over 15 years with a stable growth trajectory, over 80 employees, and an annual revenue of 45 million rubles, reflects the broader dynamics at play in SMEs confronting the realities of AI integration. The company's partnerships with major industry players like EOS, Harvia, WEDI, and KASTOR further underscore its representative nature within the sector.

Significantly, this research underscores the need for SMEs in Russia and similar markets to adopt a proactive approach towards AI integration. This involves not only recognizing the potential of AI but also addressing the challenges it presents, such as skill gaps and workforce adaptation. This study suggests that education and strategic upskilling are crucial in leveraging AI's capabilities and mitigating its disruptive effects.

Moreover, this research offers practical insights into strategic actions necessary for effective AI incorporation within business models. These strategies should aim at facilitating a smoother transition into AI-augmented workplaces and enhancing competitive advantages in an increasingly digitalized global economy.

In conclusion, this study not only contributes to the ongoing discourse on AI in the SME sector but also serves as a practical guide for enterprises, especially in emerging economies, looking to harness AI. It calls for a thoughtful integration of AI that aligns with business objectives and workforce development. Future research could build upon these findings by exploring the longitudinal impact of AI on job dynamics, the scalability of AI strategies across different industries within the SME sector, and the role of policy in fostering an environment conducive to AI adoption. The journey of AI integration is ongoing, and its evolving trajectory will undoubtedly shape the future of work in SMEs globally.

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APPENDIX

APPENDIX 1: Interview official invitation

Hello, Dear _____,

I hope this message finds you in good health and high spirits,

My name is Zakhar Grishunin, and I am currently undertaking a pivotal research project as part of my final year in Department of International Affairs at Wenzao University. Given your esteemed expertise and valuable perspective, I am excited to extend an invitation for you to participate in an interview that will significantly enrich my study.

The focus of my research is "The Integration and Impact of Artificial Intelligence on SME in Russia." It delves into how AI tools and systems are reshaping tasks, processes, and job roles across various sectors, including. Your insights into the adoption of AI in small business operations would be incredibly valuable. The interview will explore topics such as:

- The potential for AI to enhance efficiency and creativity in professional workflows.
- Attitudes and cultural responses to AI within the industry, especially considering generational perspectives.
- The challenges and opportunities of integrating AI into daily operations and strategic planning.

I anticipate that the discussion will last approximately 30 minutes, during which we will explore a series of questions tailored to your experience and expertise. Please feel free to choose a time that is most convenient for you, and indicate your preference for an online or in-person interview. If online, we can utilize platforms such as Zoom, Google Meet, or Teams, or any other platform you prefer. Your contribution will not only aid in the completion of my academic requirements but will also contribute to a broader understanding of AI's evolving role in our professional lives.

Thank you in advance for considering this invitation. I am looking forward to the possibility of engaging with you and gleaning from your experiences and viewpoints.

Best regards,

Zakhar Grishunin