Factors Impacting Cloud Computing Adoption in FinTech Companies

A Qualitative study from the perspective of Austria

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Abstract

Cloud computing has emerged as a groundbreaking technology that offers a plenty of benefits to organizations and businesses across various industries. Despite its well-documented advantages, many organizations remain hesitant to fully embrace cloud computing. This reluctance is especially prevalent in Austrian FinTech organizations, where the adoption of cloud technology is still met with caution. The primary objective of this research is to bridge the existing gap in studies concerning the effective adoption of cloud computing within Austrian FinTech organizations. This study seeks to identify and analyze the factors that significantly influence the adoption of cloud technology in this sector. By thoroughly examining these factors, the research aims to establish a ranking based on the magnitude of their impact on cloud adoption decisions. By focusing on these key factors, organizations can ensure that they are adequately prepared to navigate the complexities of cloud adoption, thereby reducing potential risks. Furthermore, this research emphasizes the importance of implementing a robust risk management strategy as a precautionary measure. Such a strategy will help mitigate any negative impacts that may arise during the cloud adoption process. Ultimately, the insights gained from this study are intended to positively influence cloud computing adoption strategies within Austrian FinTech organizations.

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FinTech – Financial Technology

NIST - National Institute of Standards and Technology

IT – Information Technology

IaaS - Infrastructure as a Service

SLA – Service Level Agreement

GDPR - General Data Protection Regulation

1 Introduction

1.1 Background

Cloud computing has emerged as a transformative technology, revolutionizing the internet and business landscapes since its introduction in 2007 (Figure 1 Google Trends, 2023). It represents a significant shift in how IT services are delivered, allowing organizations to leverage computing resources on-demand over the internet. The rapid rise in interest and adoption of cloud computing is evidenced by various studies, including data from Google Trends, which show a substantial increase in search volumes compared to other related technologies such as Grid Computing, Virtualization, and Data Centers (Google Trends, 2023; Vinoth et al., 2022; Wang et al., 2010). This growing interest highlights the potential and importance of cloud computing in modern business environments.

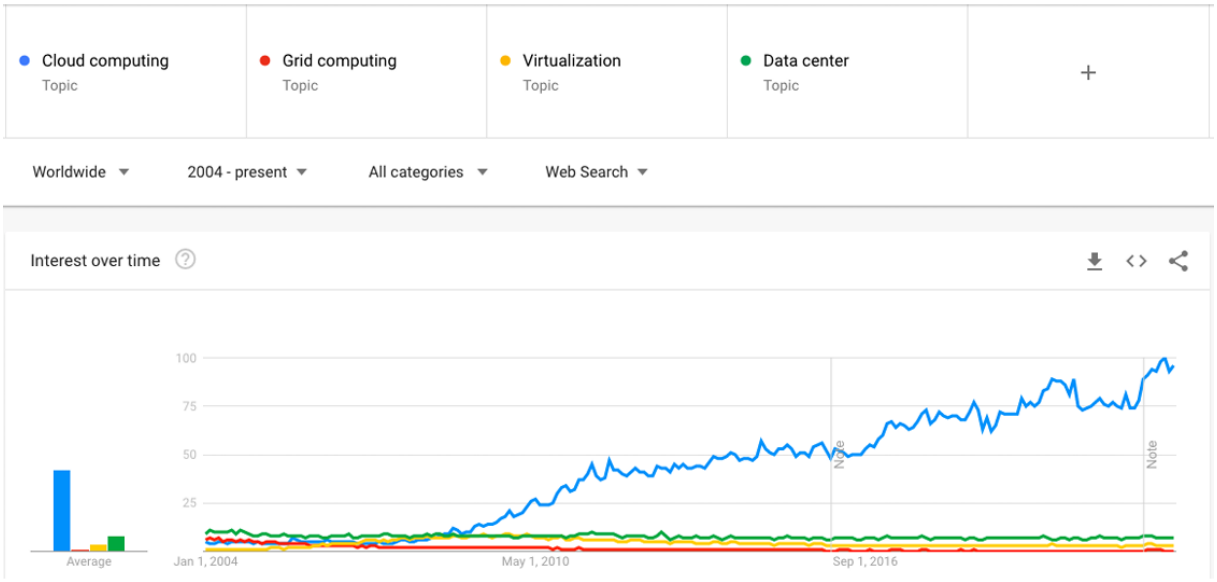

Figure 1 Interest in Cloud Computing Over Time (Google Trends, 2023) (Source: https://www.researchgate.net/figure/Popularity-of-Cloud-Computing-as-reported-by-Google-trends_fig1_267719048)

Cloud computing is characterized by several key features as defined by the U.S. National Institute of Standards and Technology (NIST). These include on-demand self-service, broad network access, resource pooling, rapid elasticity, and measured service (Borgman et al., 2013, p.4425). These features enable businesses to access scalable and flexible IT resources, which can lead to cost savings, enhanced efficiency, and improved business agility. Qian et al. (2009) further describe cloud computing as a computing technique where IT services are provided by low-cost, interconnected computing units via IP networks.

In the financial sector, particularly within FinTech, cloud computing plays a crucial role. FinTech, a term derived from the combination of "financial" and "technology," refers to the application of technology to improve financial activities (https://dictionary.cambridge.org/dictionary/english/fintech).

This industry has gained significant traction by offering innovative solutions that enhance customer experiences through advanced IT applications. However, despite the potential benefits, the adoption of

cloud computing in the FinTech sector, particularly in Austria, remains low compared to other European countries. According to the European Commission (2022), only 46.5% of Austrian enterprises used cloud computing services in 2023, compared to 78.3% in Finland and 71.6% in Sweden.

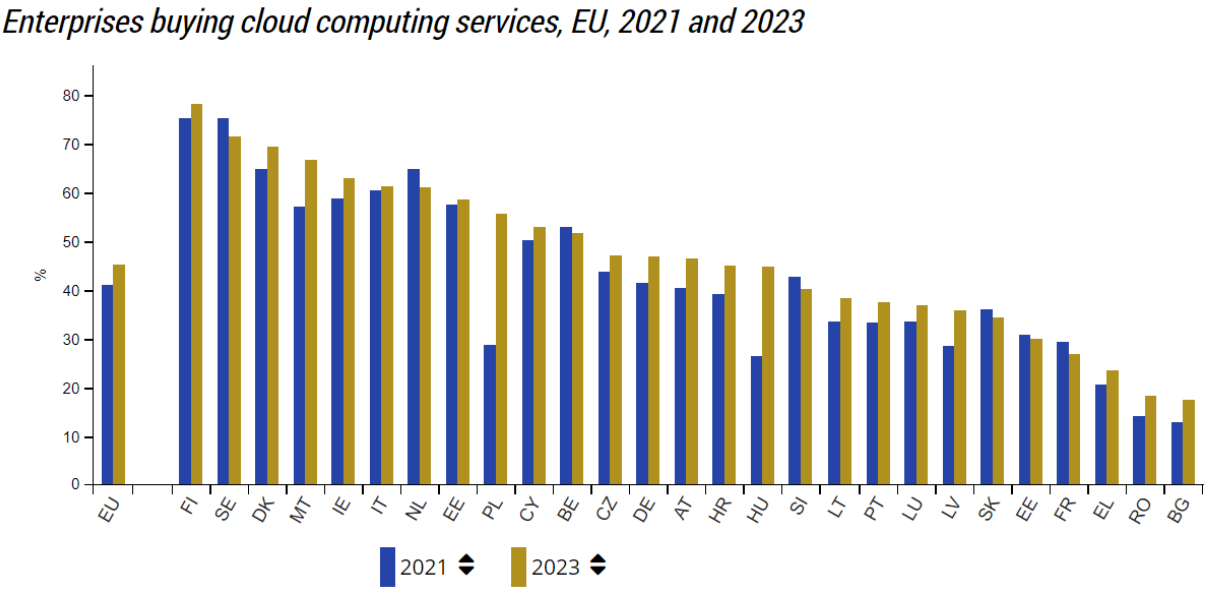

Figure 2 Usage of Cloud Computing in EU countries (Source: https://ec.europa.eu/eurostat/statistics-explained/index.php)

The reluctance to adopt cloud computing in the financial sector, especially among Austrian FinTech organizations, can be attributed to several factors, including concerns over data privacy, security risks, and regulatory challenges (Abolfazli et al., 2015; Vinoth et al., 2022). These concerns are particularly pronounced in heavily regulated industries such as banking, where the sensitivity of data and the complexity of cloud architectures pose significant risks. The literature reveals a notable gap in empirical studies focusing on cloud adoption in FinTech, underscoring the need for more research to understand the factors influencing cloud adoption in this sector (Alizadeh et al., 2020; Stewart, 2022).

To support this research, a conceptual framework will be employed, drawing on existing models and theories related to technology adoption and risk management. This framework will help identify and analyze the factors that impact cloud adoption in Austrian FinTech organizations, providing a structured approach to understanding the challenges and opportunities associated with cloud computing in this specific context.

1.2 Research problem

Despite the recognized advantages of cloud computing, its adoption among Austrian organizations, particularly in the FinTech sector, remains limited. This presents a significant challenge, given the potential of cloud technology to enhance operational efficiency, reduce costs, and drive innovation in financial services. The reluctance to adopt cloud computing in Austria, as compared to other European nations, raises critical questions about the barriers and concerns that are hindering its widespread use.

The problem is of particular interest to the scientific community as it relates to the broader field of Computing, where cloud computing is considered a key technological advancement. The slow adoption of cloud technology in Austrian FinTech organizations is not only a matter of local concern but also a

broader issue within the financial industry, which is traditionally cautious in embracing new technologies due to regulatory constraints and security concerns.

Existing literature highlights several reasons for this hesitation, including data privacy concerns, the complexity of cloud architectures, and the perceived risks associated with multi-tenancy and loss of control over data (Vinoth et al., 2022). Moreover, the financial sector's stringent regulatory environment further complicates the adoption process, making it essential to understand the specific factors that influence cloud adoption decisions in this context (Abolfazli et al., 2015).

The research problem, therefore, is to identify and rank the factors that impact cloud adoption in Austrian FinTech organizations. By addressing this gap in the literature, this study aims to provide insights that can guide organizations in effectively navigating the challenges associated with cloud computing adoption. The findings are expected to contribute to the development of more effective cloud adoption strategies and risk management frameworks, ultimately facilitating a smoother transition to cloud-based services in the Austrian FinTech sector.

1.3 Aim and research question

The primary aim of this research is to identify and analyze the factors that influence the adoption of cloud computing in Austrian FinTech organizations. By understanding these factors, the study seeks to provide actionable insights that can help organizations navigate the challenges associated with cloud adoption and enhance their decision-making processes. The research specifically focuses on uncovering both the positive and negative factors that impact cloud adoption, as well as evaluating the magnitude of these impacts.

To achieve this aim, the study is guided by the following research questions:

RQ1: Which factors have a positive impact on cloud adoption in Austrian FinTech companies?

RQ2: Which factors have a negative impact on cloud adoption in these companies?

RQ3: What are the magnitudes of these positive and negative impacts?

These questions are directly aligned with the aim of the research, ensuring a coherent and focused approach to addressing the problem of slow cloud adoption in Austrian FinTech organizations. By answering these questions, the research aims to contribute to the development of effective cloud adoption strategies that can mitigate risks and capitalize on the benefits of cloud technology.

1.4 Delimitations of the study

The scope of this study is deliberately narrowed to ensure a focused and manageable research process, given the constraints of time and resources. While cloud computing adoption is a global phenomenon, this research specifically examines the factors influencing cloud adoption within the unique regulatory and market context of Austrian FinTech companies. The research exclusively targets the FinTech sector, excluding other industries where cloud adoption might follow different dynamics. This focus is intended to provide in-depth insights relevant to financial technology, which operates under stringent regulatory requirements and has distinct security concerns. The study concentrates on identifying and analyzing factors that impact cloud adoption, both positively and negatively. It does not extend to exploring post-

adoption outcomes, such as the long-term operational benefits or challenges faced by companies after adopting cloud services.

These delimitations are intended to maintain a clear focus on the research aim and ensure that the study remains feasible within the constraints of available resources. They also help to ensure that the findings are relevant and applicable to the specific context of Austrian FinTech companies, thereby increasing the study's practical value.

1.5 Use of ChatGPT

ChatGPT, an advanced language model by OpenAI, was extensively utilized in the research and writing process of this report. The tool provided structured content quickly, saving significant time and enhancing the clarity and organization of the report. ChatGPT also assisted in introducing research methodology, generating thematic analysis, summarizing complex ideas, and improving the overall flow of the report.

The primary benefits included increased efficiency, improved structure, and comprehensive insights that enriched the analysis. However, some drawbacks were noted. ChatGPT occasionally lacked deep contextual understanding, necessitating manual revisions to ensure the content was accurate and relevant. Additionally, there is a risk of over-reliance on AI-generated content, which might limit the researcher’s critical thinking and original contributions.

Overall, while ChatGPT proved to be a valuable tool in the research and writing process, its use required careful oversight to ensure that the content was both accurate and aligned with the specific research context.

2 Method

2.1 Research strategy

Given the objective of this research—to thoroughly identify and analyze the factors impacting cloud computing adoption within Austrian FinTech organizations—a case study strategy has been chosen as the most appropriate research approach. The case study method is particularly well-suited for this research because it enables an in-depth investigation of complex phenomena within their real-world context, allowing for a nuanced understanding of the specific factors influencing cloud adoption in a targeted sector and geographical area.

The case study strategy facilitates a detailed examination of particular instances, or "cases," which, in this research, involves conducting expert interviews with key stakeholders in cloud security and deployment within the Austrian FinTech industry. This qualitative approach is advantageous as it allows for the collection of rich, contextualized data, enabling the exploration of the multifaceted and interrelated factors that influence cloud adoption decisions. By focusing on a small, carefully selected sample of cases—specifically, four subject matter experts—the research can delve deeply into the specific challenges, opportunities, and considerations faced by these professionals, offering insights that might be overlooked in a broader study.

Alternative research strategies, such as surveys or experimental methods, were considered but deemed less suitable for this study's aims. Surveys, while capable of capturing a wide range of data, often lack the depth necessary to uncover the intricate, context-dependent factors influencing cloud adoption in a particular setting. Experimental approaches, on the other hand, are less practical in this context as they typically focus on testing predefined hypotheses under controlled conditions, which may not adequately capture the real-world complexities and situational specifics critical to understanding cloud adoption in the FinTech sector.

Thus, the case study strategy is preferred for this research because it aligns with the study's aim to provide detailed, context-rich insights into the factors impacting cloud computing adoption in Austrian FinTech companies. This approach ensures that the research can offer meaningful and actionable conclusions tailored to the specific challenges and dynamics of the sector.

2.2 Data Collection Method

To effectively answer the research questions related to the factors impacting cloud computing adoption in Austrian FinTech companies, this study will rely on qualitative data obtained through semi-structured expert interviews**.** The selection of this data collection method is aligned with the case study research strategy chosen for the study, which emphasizes a deep exploration of complex phenomena within their real-world contexts.

In qualitative research, interviews are a powerful method for gaining insights into the experiences, opinions, and perspectives of individuals who are directly involved with the subject matter. In this study, the research questions—focusing on identifying both positive and negative factors affecting cloud adoption and their respective magnitudes—require detailed, nuanced data that can only be provided through direct interaction with experts in the field.

Several data collection methods were considered, including surveys, focus groups, and document analysis. However, surveys were deemed less appropriate because they generally yield quantitative data, which would not sufficiently capture the depth of insights required for this study. Focus groups were also considered but were ultimately not chosen due to the geographical dispersion of the experts and the logistical challenges of coordinating a group discussion across different locations.

Given the nature of the research questions and the specific context of cloud computing in the Austrian FinTech sector, semi-structured interviews were identified as the most suitable method. This approach allows for flexibility in exploring different aspects of the topic while ensuring that key themes relevant to the research questions are covered. Semi-structured interviews also provide the opportunity to probe deeper into specific areas of interest, making it possible to uncover insights that might not emerge in a more structured format.

The interviews will be conducted online via Zoom, a web-based video conferencing tool licensed by Stockholm University. This platform was selected due to the geographical dispersion of the participants, who are experts located in various parts of Austria. While face-to-face interviews could have provided richer non-verbal data, the logistical constraints and the ease of recording and transcribing Zoom interviews made the web-based option the most practical and efficient.

The semi-structured nature of the interviews means that a set of core questions will guide the discussion, but the interviewer will have the flexibility to explore topics as they arise. This approach is essential for capturing the full range of factors influencing cloud adoption in Austrian FinTech companies, as it allows for a more organic flow of conversation and the emergence of unexpected but relevant insights.

The questions for the interviews have been carefully crafted to align with the research questions. They are designed to explore the experts' views on the drivers and barriers to cloud adoption, as well as their perspectives on the magnitude of these factors. The interview questions will be listed in Appendix C, along with a detailed description of the interview protocol.

This interview base qualitative data collection method is consistent with almost similar research in the field. For instance, Alizadeh et al. (2020) utilized this type of data collection method to identify factors influencing cloud adoption in the Iranian e-banking sector, while Stewart (2022) employed a similar approach to develop the "IaaS Adoption" model for the German financial sector. Stieninger & Nedbal, (2014) did empirical study based on interviews with 9 experts from Austria.

Given the expertise of the participants, the interviews are expected to yield rich qualitative data that will be analyzed using thematic inductive analysis. The insights gathered will be instrumental in understanding the complexities of cloud adoption in the Austrian FinTech sector and will contribute to the development of practical recommendations for the industry.

2.3 Participants Selection Strategy

The participants for this study are selected using a purposive sampling strategy, which is appropriate given the need for specialized knowledge in the area of cloud computing and cybersecurity within the FinTech sector. Purposive sampling involves selecting individuals who are particularly knowledgeable about or experienced with the research topic, ensuring that the data collected is rich and relevant.

The participants chosen for this research include:

1. **Sangita Bhattacharjee** - An expert from the Austrian Government's Cloud-native cybersecurity sector.
2. **Dr. Sadek Ferdous Ripul** - An academic researcher from Vienna University specializing in Cloud-native cybersecurity.
3. **Adnan Mahmud** - CTO of an Austrian cloud security provider company.
4. **Rubaiyyaat Aakbar** - A consultant and cybersecurity expert in the financial sector.

These individuals were selected based on their expertise and their roles within the industry, which position them as key informants capable of providing deep insights into the factors affecting cloud adoption.

This selection strategy is justified by the need to gather data from those with direct experience and expertise in the specific challenges and considerations relevant to cloud adoption in Austrian FinTech companies. The use of expert interviews mitigates the risk of gathering superficial or irrelevant data, as the selected participants can speak authoritatively on the topic. However, this selection strategy may introduce biases related to the perspectives of these specific experts, as they may emphasize certain factors over others based on their professional backgrounds. These potential biases will be acknowledged and considered during the analysis phase to ensure a balanced interpretation of the data.

2.4 Data Analysis Method

The data collected from the semi-structured expert interviews will be analyzed using thematic inductive analysis. This qualitative data analysis method is particularly well-suited for this study as it allows for the identification of patterns and themes directly from the data.

Thematic inductive analysis was chosen because it is a systematic and flexible approach that enables the researcher to generate rich and detailed insights. This method involves coding the data without trying to fit it into a pre-existing coding frame or the researcher's analytic preconceptions, making it ideal for uncovering the complexities surrounding cloud adoption in the specific context of Austrian FinTech companies. The inductive approach ensures that the themes emerge from the data itself, allowing for a more nuanced understanding of the factors at play.

In this study, Braun and Clarke's (2006) six-phase framework for thematic analysis will be employed. This approach is widely used in qualitative research and provides a clear, structured process for analyzing qualitative data. The six steps are as follows:

1. **Familiarization with the Data**: This step involves transcribing the interviews and reading through the transcripts multiple times to become thoroughly familiar with the content. Initial thoughts and ideas will be noted during this process.
2. **Generating Initial Codes**: In this phase, the transcripts will be systematically coded. Codes represent interesting features of the data relevant to the research questions. MAXQDA software will be used to assist with this process by helping to manage and organize the large amounts of qualitative data.
3. **Searching for Themes**: The codes will be reviewed to identify potential themes. A theme represents a coherent and meaningful pattern in the data related to the research questions. Codes will be grouped into categories that reflect different aspects of cloud adoption factors.
4. **Reviewing Themes**: In this step, the themes will be reviewed and refined. Some themes may be merged, discarded, or broken down into sub-themes, depending on the extent to which they capture the data accurately and comprehensively.
5. **Defining and Naming Themes**: After finalizing the themes, each theme will be clearly defined and named. This involves formulating a detailed analysis for each theme and identifying how it relates to the overall research questions and objectives.

6. **Producing the Report**: The final step involves writing up the analysis in a coherent and logical manner, with examples from the data to illustrate each theme. The report will tie the themes back to the research questions and discuss their implications for cloud adoption in the Austrian FinTech sector.

The data analysis will be structured into three coding levels:

Codes: These are the initial labels assigned to segments of data that appear relevant to the research questions.

Categories/Sub-themes: Codes that are similar in meaning or context will be grouped into broader categories or sub-themes.

Themes: These are overarching patterns that emerge from the categories, representing the main findings of the study.

A table summarizing these coding levels will be provided, highlighting how the initial codes were grouped into categories and how these categories were synthesized into final themes. This structure will allow for a clear and systematic presentation of the data, making it easier to draw conclusions and make comparisons across different themes.

The software tool **MAXQDA** will be utilized to facilitate the coding process and manage the data. MAXQDA is well-suited for thematic analysis as it provides features for organizing, coding, and visualizing qualitative data.

This thematic analysis approach is consistent with similar research in the field. For instance, Alizadeh et al. (2020) utilized thematic analysis to identify factors influencing cloud adoption in the Iranian e-banking sector, while Stewart (2022) employed a similar approach to develop the "IaaS Adoption" model for the German financial sector. These studies underscore the effectiveness of thematic analysis in uncovering detailed insights into cloud adoption factors within specific contexts, validating the choice of this method for the current research.

2.5 Research Ethics

Ethical considerations are paramount in this study, particularly because it involves the collection of qualitative data through expert interviews. The primary ethical issues addressed include informed consent, confidentiality, and the secure handling of data.

Before conducting the interviews, all participants will be provided with a detailed information sheet outlining the purpose of the study, the nature of their involvement, and the use of the data collected. The study does not involve any vulnerable populations, and the participants, as experts in their field, are fully capable of providing informed consent.

The interviews will be recorded and transcribed, with all recordings and transcripts stored securely on an encrypted local drive. No data will be stored on cloud services to prevent unauthorized access. Access to the raw data will be restricted to the researcher, and the data will be deleted upon the completion of the study and the final approval of the thesis.

Given the sensitive nature of the information discussed in the interviews, particularly regarding cybersecurity in the financial sector, special attention will be given to data security. All digital files,

including audio-video recordings and transcripts, will be encrypted and stored on a secure, password-protected device. No personal or sensitive information beyond the interview content will be collected.

In conclusion, this study has been carefully designed to ensure that ethical considerations are fully addressed, minimizing any potential risks to participants while ensuring the integrity and confidentiality of the data collected. These ethical measures align with the standards of ethical research practice and have been implemented to protect the participants and the validity of the research findings.

3 Results

3.1 Data Collection and Analysis

The data collection process for this research was designed meticulously to ensure that the study could be replicated with precision. This study focused on the factors impacting cloud computing adoption in FinTech companies in Austria. Given the qualitative nature of the research, we employed a case study strategy to deeply explore the perspectives of industry experts. The data collection was primarily conducted through semi-structured interviews with four carefully selected subject matter experts, each contributing unique insights from different sectors relevant to cloud computing and cybersecurity in FinTech organizations.

Interviews were conducted via web-based Zoom meetings, a platform licensed by Stockholm University, ensuring a secure and stable environment for data collection. The decision to conduct interviews online was driven by the geographical distribution of the experts, which made face-to-face interviews impractical.

The interviews were semi-structured, allowing for both guided questioning and open-ended responses. This format was chosen to balance the need for consistency across interviews with the flexibility to explore topics in greater depth based on the expertise of each participant. The interviews were conducted in Bangla (our own mother language) and lasted between 60 to 90 minutes each.

A set of interview questions (Appendix C) were prepared in advance, focusing on three main research questions:

RQ1: Which factors have a positive impact on cloud adoption in Austrian FinTech companies?

RQ2: Which factors have a negative impact on cloud adoption in these companies?

RQ3: What are the magnitudes of these positive and negative impacts?

The questions were designed to elicit detailed responses that would provide insight into the technical, organizational, external, regulatory, and human factors influencing cloud adoption.

Each interview was recorded with the consent of the participants to ensure accuracy in capturing their responses. The recordings were subsequently converted to English to facilitate detailed analysis. The analysis of the interview data was carried out using Thematic Inductive Analysis, a method well-suited for identifying patterns and themes within qualitative data. This approach allowed us to derive insights directly from the data, without imposing preconceived categories or theories.

Step 1: Familiarization with the Data

The first step in the analysis process involved thoroughly reading and re-reading the interview transcripts to become deeply familiar with the data. During this stage, initial notes and impressions were recorded, highlighting potential codes and themes that appeared relevant to the research questions.

Step 2: Generating Initial Codes

Using the software tool MAXQDA, which is commonly employed in qualitative research for organizing and analyzing textual data, we systematically coded the transcripts. Coding involved identifying significant phrases, sentences, or paragraphs that directly addressed the research questions. The codes

were derived inductively, meaning they were based on the content of the data rather than predefined categories.

For example, codes related to Technical and Security Factors included "Data Encryption Standards," "System Integration Complexity," and "Uptime and Service Availability." These codes were associated with responses concerning the technical challenges and benefits of cloud adoption.

Step 3: Searching for Themes

After coding the data, we began the process of identifying themes. Themes are broader patterns that encompass multiple codes. In this study, we organized the codes into four main themes, each with its own sub-themes:

Theme	Sub-theme	Codes
Technical and Security Factors	Data Privacy and Security	Data Encryption Standards, Data Breach Concerns, Multi-tenancy Risks, Loss of Data Control, Trust in Cloud Providers
	System Integration and Compatibility	Compatibility with Existing IT Infrastructure, Integration Complexity, Interoperability with Legacy Systems, Scalability of Cloud Solutions
	Performance and Reliability	Uptime and Service Availability, Performance Optimization, Disaster Recovery Capabilities, Latency Issues
Organisational Factors	Organizational Culture and Readiness	Innovation Culture, Change Management, Leadership Support, Organizational Agility
	Decision-Making Processes	Strategic Alignment with Business Goals, Stakeholder Involvement, Decision-Making Hierarchy, Resource Allocation
	Cost and Resource Management	Initial Investment Costs, Operational Cost Savings, Budget Constraints, Resource Availability
External and Regulatory Factors	Regulatory Compliance	Adherence to GDPR, Industry-Specific Regulations, Compliance Costs, Regulatory Uncertainty
	Market Dynamics and Competition	Competitive Advantage, Market Pressure to Innovate, Customer Expectations, Vendor Relationships
	Legal and Contractual Considerations	Service Level Agreements (SLAs), Data Ownership Rights, Liability and Risk Sharing, Legal Obligations
Human Factors	Skillsets and Expertise	Availability of Skilled IT Personnel, Training and Development Needs, Expertise in Cloud Technologies, Knowledge Gaps
	User Acceptance and Resistance	Employee Resistance to Change, Perceived Ease of Use, User Training and Support, Adoption Incentives
	Collaboration and Communication	Cross-Departmental Collaboration, Communication Channels, Knowledge Sharing Practices, Team Dynamics

Table1 Codes, Sub-themes, Themes from the interviews

Step 4: Reviewing Themes

The identified themes were reviewed and refined to ensure that they accurately reflected the data. This involved checking for coherence within themes and ensuring that the themes captured the most significant aspects of the data. During this stage, some codes were reclassified, and some themes were further divided or merged as necessary.

Step 5: Defining and Naming Themes

Once the themes were finalized, each theme and sub-theme was clearly defined and named. The names were chosen to reflect the essence of the data contained within each theme. For example, the theme 'Human Factors' encompassed all codes related to the skills, resistance, and collaboration of the personnel involved in cloud adoption.

Step 6: Producing the Report

The final step in the data analysis involved synthesizing the themes into a coherent narrative that addressed the research questions. This report was structured to provide clear insights into the factors that positively or negatively impact cloud adoption in Austrian FinTech companies, as well as the magnitude of these impacts.

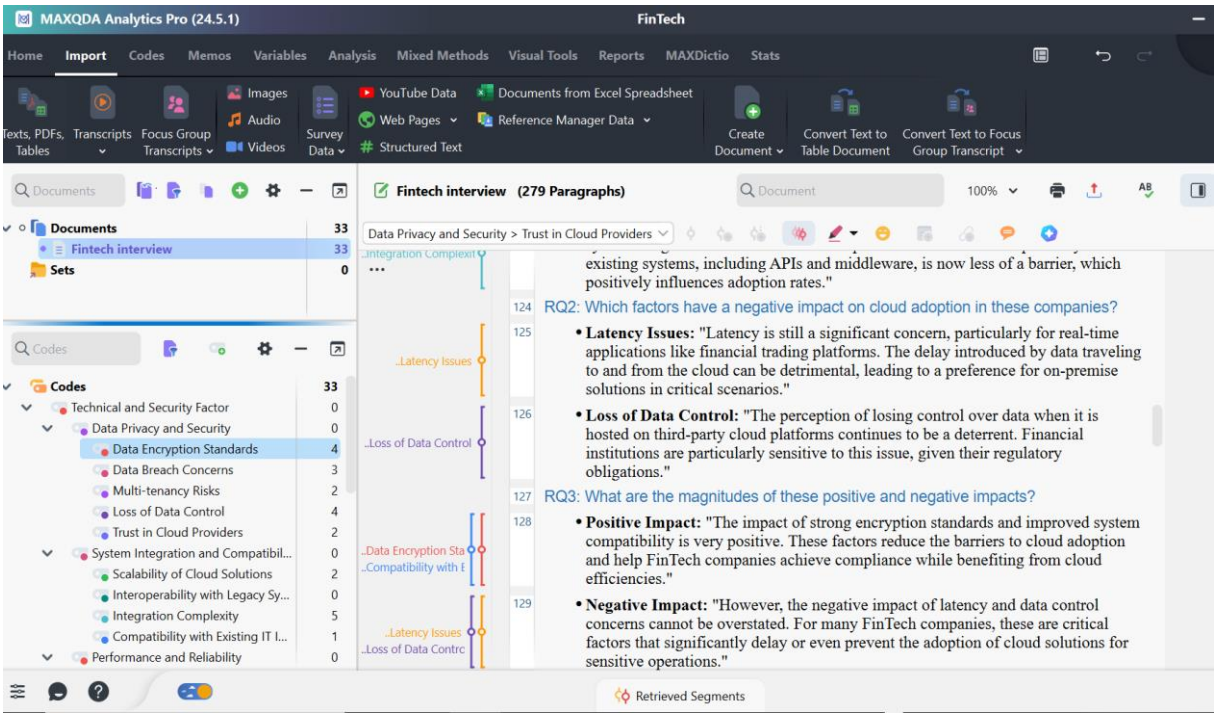

Figure 3 MAXQDA window panel for interview to code generation phase

To provide transparency in our analysis, we included screenshots from the MAXQDA software that illustrate how codes were linked to specific themes and sub-themes. These visuals demonstrate the systematic approach taken to organize and interpret the data, ensuring that the study's findings are grounded in the data collected.

3.2 Findings

The findings of this study provide a comprehensive overview of the factors impacting cloud computing adoption in Austrian FinTech companies, as identified through thematic analysis of expert interviews. The data collected from these interviews were organized into four main themes: Technical and Security Factors, Organizational Factors, External and Regulatory Factors, and Human Factors. Each theme is supported by sub-themes and codes that offer a detailed understanding of the various influences on cloud adoption. The findings are presented in a structured format, integrating quotes from the interviews to illustrate key points and providing tables and figures to visualize the relationships between themes.

1. Technical and Security Factors

Sub-theme 1.1: Data Privacy and Security

One of the most significant findings is the impact of data privacy and security on cloud adoption. The experts mostly highlighted negative aspects of this factor.

Positive Impact:

Data Encryption Standards: Sangita Bhattacharjee emphasized, "The adoption of robust data encryption standards has greatly enhanced trust in cloud computing within the FinTech sector."

Scalability of Cloud Solutions: Adnan Mahmud noted, "Cloud services offer robust disaster recovery options, which are critical for financial institutions."

Negative Impact:

Data Breach Concerns: Bhattacharjee also warned, "Data breaches remain a significant concern, especially when sensitive financial data is involved."

Integration Complexity: The challenge of integrating cloud services with legacy systems was another key concern. Mahmud remarked, "The complexity of integrating cloud solutions with existing systems is often underestimated."

Sub-theme 1.2: System Integration and Compatibility

System integration emerged as a critical barrier to cloud adoption, particularly concerning the compatibility of cloud services with existing IT infrastructure.

Positive Impact:

System Integration and Compatibility: Rubaiyyaat Aakbar observed, "Improved tools and technologies for system integration have made cloud adoption more feasible."

Negative Impact:

Latency Issues: Both Dr. Sadek Ferdous Ripul and Rubaiyyaat Aakbar identified latency issues as a significant drawback, particularly for real-time applications like financial trading platforms.

Sub-theme 1.3: Performance and Reliability

Performance and reliability, including uptime and disaster recovery capabilities, were highlighted as crucial factors.

Positive Impact:

Uptime and Service Availability: Ripul emphasized, "FinTech companies are increasingly attracted to the high uptime guarantees provided by leading cloud providers."

Negative Impact:

Loss of Data Control: The perceived loss of control over data stored in the cloud was a recurring concern, particularly regarding regulatory compliance.

2. Organizational Factors

Sub-theme 2.1: Organizational Culture and Readiness

Organizational readiness and culture, particularly the support from leadership and the agility of the organization, were seen as significant enablers of cloud adoption.

Positive Impact:

Leadership Support: Bhattacharjee stated, "Strong leadership support is crucial for successful cloud adoption."

Organizational Agility: Dr. Ripul added, "Organizational agility plays a key role in facilitating cloud adoption."

Negative Impact:

Change Management: Bhattacharjee pointed out, "Effective change management is often lacking, which can impede cloud adoption."

Sub-theme 2.2: Decision-Making Processes

Strategic alignment with business goals and the involvement of stakeholders in the decision-making process were identified as critical factors.

Positive Impact:

Strategic Alignment with Business Goals: Dr. Ripul noted, "When cloud adoption is strategically aligned with the company's business goals, it ensures that the technology implementation supports overall objectives."

Negative Impact:

Resource Allocation: Inadequate allocation of resources was seen as a major barrier, with Ripul mentioning, "Without sufficient allocation of both financial and human resources, cloud adoption initiatives may struggle."

Sub-theme 2.3: Cost and Resource Management

The financial aspects of cloud adoption, particularly initial investment costs and ongoing operational savings, were also discussed.

Positive Impact:

Operational Cost Savings: Bhattacharjee mentioned, "One of the most compelling positive factors is the potential for operational cost savings."

Negative Impact:

Initial Investment Costs: Mahmud observed, "The high initial costs associated with cloud migration can be prohibitive, especially for startups and smaller FinTech firms."

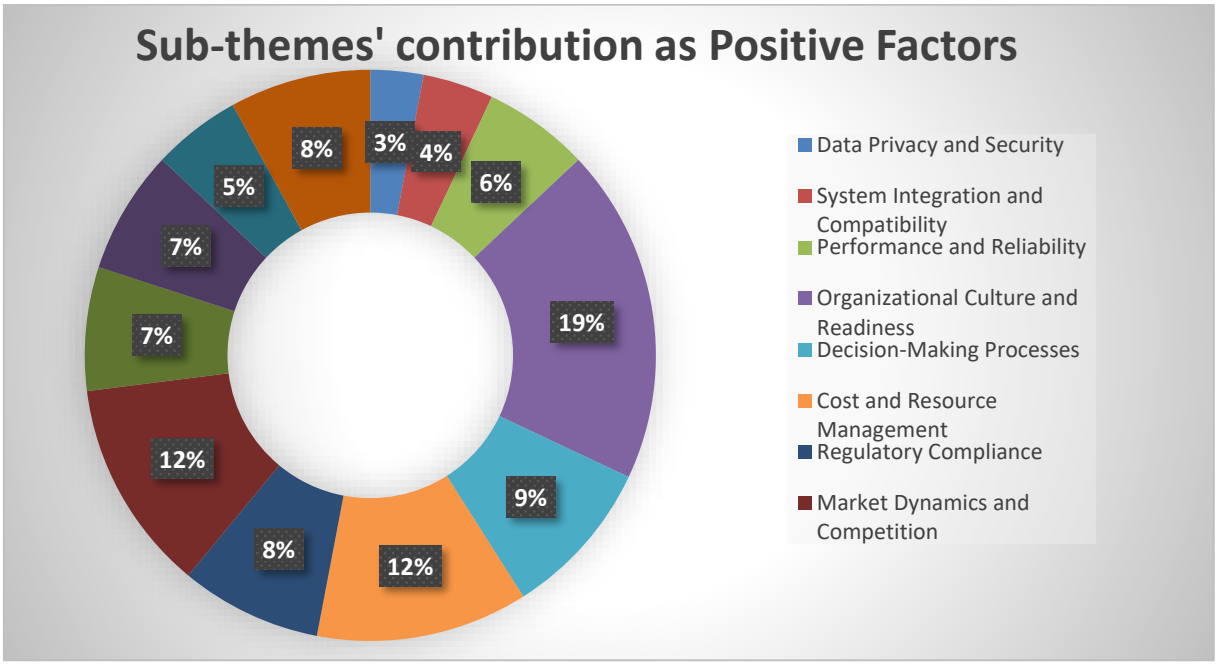

Figure 4 Over all Sub-themes' contribution as Positive factors with percentile magnitude for Cloud adoption

3. External and Regulatory Factors

Sub-theme 3.1: Regulatory Compliance

Regulatory compliance, especially adherence to GDPR, was seen as both a driver and a barrier to cloud adoption.

Positive Impact:

Adherence to GDPR: Bhattacharjee stated, "Compliance with GDPR has actually driven cloud adoption in many cases."

Negative Impact:

Regulatory Uncertainty: Bhattacharjee also noted, "Regulatory uncertainty is a significant barrier, making it difficult for FinTech companies to commit fully to cloud adoption."

Sub-theme 3.2: Market Dynamics and Competition

Market pressure to innovate and competitive advantage were highlighted as key drivers for adopting cloud technologies.

Positive Impact:

Competitive Advantage: Dr. Ripul remarked, "The ability to gain a competitive advantage through cloud adoption is a key positive factor."

Negative Impact:

Compliance Costs: The high costs associated with regulatory compliance were identified as a significant deterrent except Operational cost savings, especially for smaller companies.

Sub-theme 3.3: Legal and Contractual Considerations

Legal obligations and concerns about data ownership rights emerged as significant barriers.

Positive Impact:

Service Level Agreements (SLAs): Dr. Ripul mentioned, "Well-structured SLAs with cloud providers can enhance trust and ensure that the company's critical needs are met."

Negative Impact:

Data Ownership Rights: Concerns over data ownership rights were frequently mentioned, with Dr. Ripul stating, "Concerns over data ownership rights can negatively impact cloud adoption."

4. Human Factors

Sub-theme 4.1: Skillsets and Expertise

The availability of skilled personnel and the need for continuous training were seen as crucial to the successful adoption of cloud technologies.

Positive Impact:

Availability of Skilled IT Personnel: Mahmud stated, "Having team members who are already experts in cloud technologies is a strong positive factor."

Negative Impact:

Knowledge Gaps: Bhattacharjee highlighted, "Knowledge gaps in cloud technologies among existing staff are another challenge."

Sub-theme 4.2: User Acceptance and Resistance

Employee resistance to change and the perceived ease of use of cloud technologies were identified as significant barriers.

Positive Impact:

Adoption Incentives: Dr. Ripul suggested, "Providing incentives for employees to adopt new technologies can be very effective."

Negative Impact:

Employee Resistance to Change: Mahmud noted, "One of the biggest barriers is employee resistance to change."

Sub-theme 4.3: Collaboration and Communication

Effective collaboration and communication within organizations were seen as essential for successful cloud adoption.

Positive Impact:

Collaboration Channels: Aakbar emphasized, "Strong collaboration channels, especially between IT and other departments, play a significant role in the success of cloud adoption."

Negative Impact:

Communication Channels: Mahmud also pointed out, "Inadequate communication channels can be a significant obstacle."

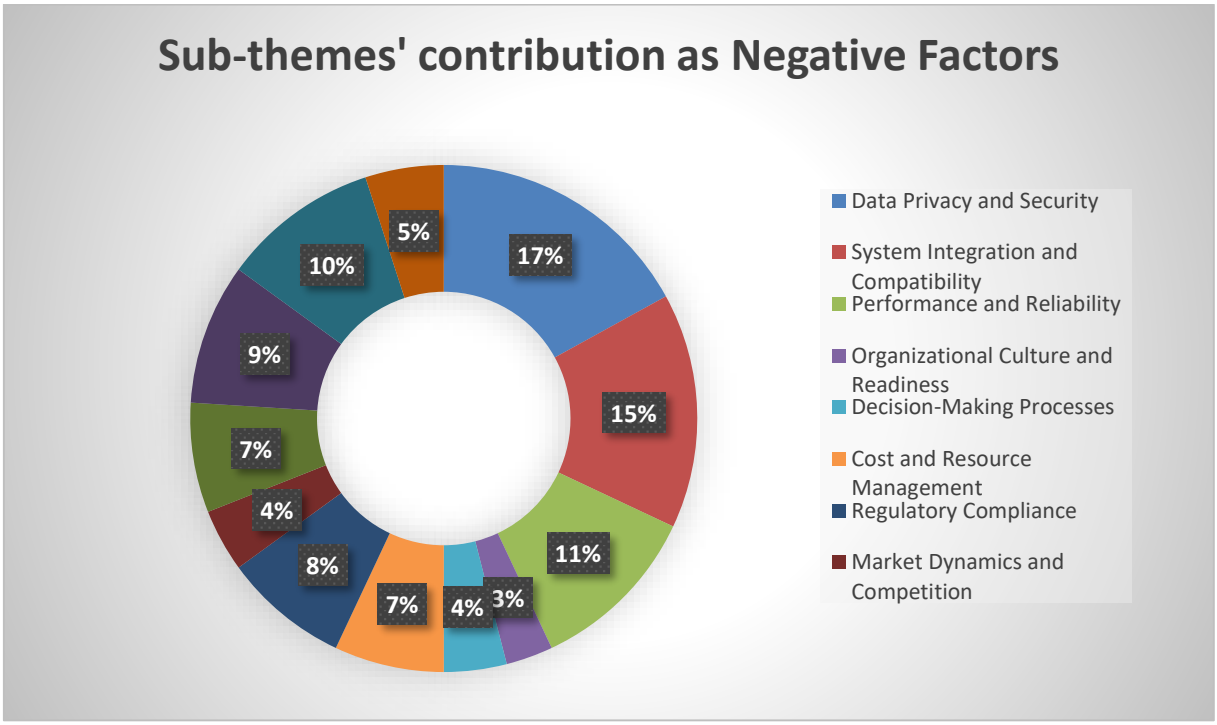

Figure 5 Over all Sub-themes' contribution as Negative factors with percentile magnitude for Cloud adoption

The findings from this research provide a detailed understanding of the factors influencing cloud computing adoption in Austrian FinTech companies. The identified themes and sub-themes offer insights into both the enablers and barriers to adoption, answering the research questions comprehensively. The integration of expert quotes highlights the complexity of cloud adoption, emphasizing the need for strategic alignment, strong leadership, and effective management of technical, organizational, regulatory, and human factors. These insights are crucial for FinTech companies seeking to navigate the challenges and opportunities associated with cloud adoption.

4 Discussion

4.1 Analysis of the results

The central aim of this research was to identify and analyze the factors impacting cloud computing adoption in Austrian FinTech companies. The three research questions focused on identifying positive and negative factors and assessing their magnitudes.

RQ1: Which factors have a positive impact on cloud adoption in Austrian FinTech companies?

The findings revealed several factors that positively influence cloud adoption, primarily within the themes of Organizational Factors and External and Regulatory Factors. The key positive drivers include a strong innovation culture, leadership support, the alignment of cloud adoption with business strategy, and the perceived competitive advantage that cloud technologies offer.

Innovation Culture and Leadership Support: The data indicates that organizations with a robust culture of innovation, operational cost savings, competitiveness advantage and proactive leadership are more inclined to adopt cloud solutions.

Strategic Alignment and Competitive Advantage: The strategic alignment of cloud adoption with business objectives, coupled with the need to maintain a competitive edge, were also identified as critical factors.

RQ2: Which factors have a negative impact on cloud adoption in these companies?

Several barriers to cloud adoption were identified, particularly within the themes of Technical and Security Factors, and Human Factors. The most significant negative factors include concerns over data privacy and security, the complexity of integrating cloud solutions with legacy systems, and resistance to change among employees.

Data Privacy and Security Concerns: Data privacy and security were the most frequently cited concerns.

Integration Complexity and Employee Resistance: The challenges of integrating cloud services with existing IT infrastructure and overcoming employee resistance to change were also highlighted as significant barriers.

RQ3: What are the magnitudes of these positive and negative impacts?

The magnitude of the identified factors varies significantly. The positive factors, particularly those related to organizational readiness and competitive pressure, were found to have a substantial impact on the decision to adopt cloud technologies. Conversely, the negative factors, especially those related to security concerns and integration challenges, were perceived as major impediments that could potentially outweigh the benefits of cloud adoption.

Magnitude of Positive Factors: The influence of organizational culture and strategic alignment on cloud adoption was perceived as strong, suggesting that companies with these attributes are more likely to overcome the barriers to cloud adoption.

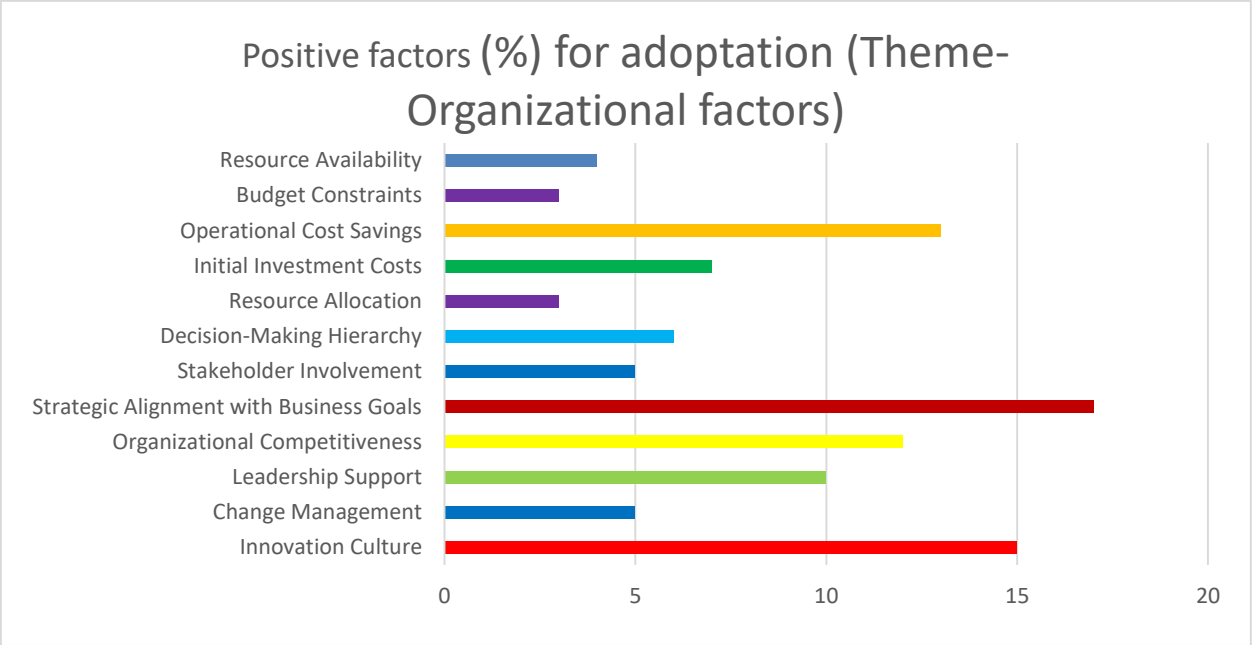

Figure 6 Organizational Factors (Theme-2) in Code Matrix contributes most as a Positive factor in Cloud adoption

Magnitude of Negative Factors: The impact of data privacy and security concerns, as well as integration complexity, was also significant. These factors were seen as potential deal-breakers, particularly for organizations with stringent regulatory requirements and complex legacy systems.

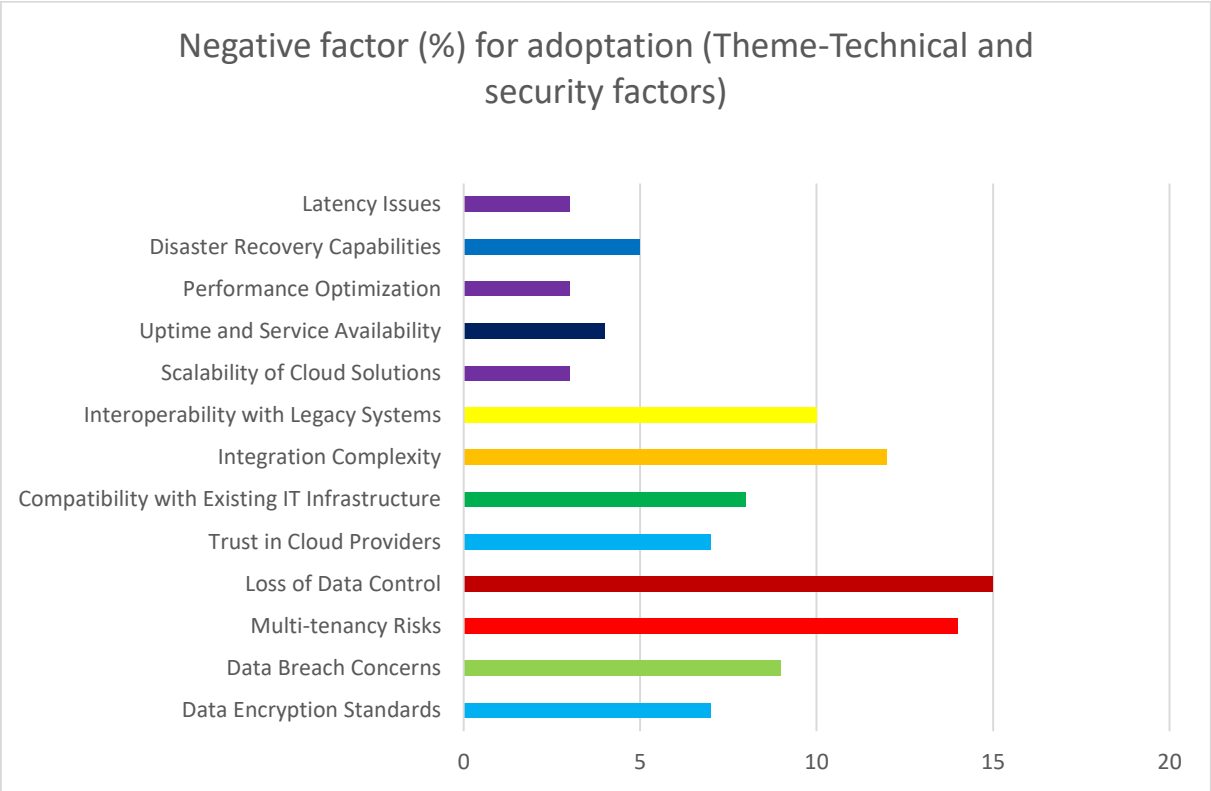

Figure 7 Technical and Security Factors (Theme-1) in Code Matrix contributes most as a Negative factor in Cloud adoption

The results of this study both align with and expand upon existing research on cloud adoption in FinTech and other industries. The findings regarding the importance of organizational culture and strategic alignment are consistent with the broader literature on technology adoption. However, this study contributes new insights into the specific challenges faced by Austrian FinTech companies, particularly in the context of regulatory compliance and the complexities of integrating cloud solutions with legacy systems.

While this study provides valuable insights into the factors influencing cloud adoption in Austrian FinTech companies, several limitations and potential biases must be acknowledged.

Sampling Bias: The selection of experts, while ensuring depth of knowledge, may introduce a sampling bias. The perspectives of the four experts, though highly relevant, may not fully capture the diversity of experiences within the broader FinTech sector. This limits the generalizability of the findings.

Methodological Limitations: The reliance on qualitative methods, while suitable for exploratory research, means that the findings are context-specific and may not be directly transferable to other settings. Additionally, the use of semi-structured interviews, while allowing for in-depth exploration, may introduce interviewer bias, where the phrasing of questions or the interviewer's demeanor influences responses.

Reliability and Credibility: To enhance the reliability and credibility of the findings, multiple coding rounds were conducted, and the themes were cross-checked for consistency. However, the subjective nature of qualitative analysis means that some degree of interpretation is unavoidable. Future studies could enhance credibility by incorporating a larger sample of experts or using triangulation methods to validate the findings.

4.2 Future research

While this study provides important insights into the factors influencing cloud computing adoption in Austrian FinTech companies, it is subject to several limitations that future research could address. To build on the findings and overcome these limitations, the following suggestions and research agenda are proposed:

1. Expanding the Sample Size and Diversity

One of the primary limitations of this study is the relatively small and homogenous sample size, which consisted of only four experts from specific sectors within Austria. Future research could benefit from expanding the sample size to include a broader range of stakeholders, such as representatives from various levels of management within different FinTech companies, regulatory bodies, and cloud service providers. This would enhance the generalizability of the findings and provide a more comprehensive understanding of the factors influencing cloud adoption.

2. Incorporating Quantitative Methods

While the qualitative case study approach used in this research provided deep insights, it also limited the ability to quantify the magnitude of the identified factors. Future research could employ a mixed-methods approach, combining qualitative interviews with quantitative surveys to measure the prevalence and impact of specific factors across a larger population.

3. Exploring Cross-Country Comparisons

While this study focused on the Austrian context, future research could explore cloud adoption in FinTech companies across different countries or regions. A comparative study would help identify whether the factors influencing cloud adoption are context-specific or if there are universal trends that apply across different regulatory and cultural environments.

4.3 Conclusion

This research set out to explore the factors impacting cloud computing adoption in Austrian FinTech companies through a qualitative case study approach, employing semi-structured expert interviews. The study successfully identified a range of positive and negative factors, categorized under Organizational Factors, External and Regulatory Factors, Technical and Security Factors, and Human Factors. The findings revealed that while factors such as innovation culture, strategic alignment, and competitive advantage drive cloud adoption, significant barriers remain, particularly concerning data privacy and security, integration challenges, and employee resistance.

The use of Thematic Inductive Analysis, supported by MAXQDA, allowed for a systematic and nuanced exploration of these factors, providing insights that align with and extend existing literature on cloud adoption. However, the study's limitations, including its small sample size, cross-sectional design, and focus on the Austrian context, suggest that further research is needed to validate and expand these findings.

The implications of this study are significant for both the academic community and industry practitioners. For academics, this research contributes to the growing body of knowledge on cloud adoption in the FinTech sector, particularly within the European regulatory environment. For practitioners, the insights provided can guide strategic decision-making, helping organizations navigate the complexities of cloud adoption.

In conclusion, while this study has made important contributions to understanding cloud adoption in Austrian FinTech companies, the proposed future research agenda offers a path forward for addressing its limitations and further advancing the field. By expanding the scope of research and employing more robust methodologies, future studies can provide deeper, more generalizable insights into the factors influencing cloud adoption in FinTech and beyond.

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Appendix A - Glossary of terms

IaaS: Infrastructure as a Service, is a cloud computing model that provides on-demand access to computing resources such as servers, storage, networking, and virtualization.

IaaS is attractive because acquiring computing resources to run applications or store data the traditional way requires time and capital. Organizations must purchase equipment through procurement processes that can take months. They must invest in physical spaces, typically specialized rooms with power and cooling. And after deploying the systems, they need IT professionals to manage and maintain them.

GDPR: The General Data Protection Regulation (GDPR) is the toughest privacy and security law in the world. Though it was drafted and passed by the European Union (EU), it imposes obligations onto organizations anywhere, so long as they target or collect data related to people in the EU. The regulation was put into effect on May 25, 2018. The GDPR will levy harsh fines against those who violate its privacy and security standards, with penalties reaching into the tens of millions of euros.

With the GDPR, Europe is signaling its firm stance on data privacy and security at a time when more people are entrusting their personal data with cloud services and breaches are a daily occurrence. The regulation itself is large, far-reaching, and fairly light on specifics, making GDPR compliance a daunting prospect, particularly for small and medium-sized enterprises (SMEs).

SLA: A service-level agreement (SLA) is an agreement between a service provider and a customer. Particular aspects of the service – quality, availability, responsibilities – are agreed between the service provider and the service user. The most common component of an SLA is that the services should be provided to the customer as agreed upon in the contract. As an example, Internet service providers and telecoms will commonly include service level agreements within the terms of their contracts with customers to define the level(s) of service being sold in plain language terms.

Appendix B - Informed Consent Form

Consent form

I hope you are willing to take part in the study investigating user experience in relation to GDPR. The study aims to investigate the opinions of users who process personal data as part of their daily job and that need to comply to GDPR. The implications of the study are to fill a gap in the current study field of useable security. In order to carry out the study I need to perform interviews with personnel who process personal data as part of their daily job. The result of the interviews will be analyzed to understand the opinions of the subjects in regards to the questions asked.

The study forms part of the compulsory program curriculum and is supervised by one of the assigned supervisors of Dept. of Education at Stockholm University, who will ensure that students adhere to all the necessary rules. The resulting thesis is assessed and graded by an examiner at the end of the course.

I ask for your approval to use the data collected for the study. Participation is always voluntary. In order to collect data for the study, I need your signed consent on the second page of this form. Even in the case that you sign the form at this point, it is still possible for you to withdraw from participation at any time without giving a motivation why.

During the course of the student working on the study your personal data are protected and will not be disclosed to unauthorized persons. I will store recordings and other details in a safeguarded manner. Any photographic/video/sound collected in the first phase will be anonymized, coded and transcribed as text. This will be done immediately upon transmission in order to disable any potential for detecting that you have participated. The consent forms will be kept in locked storage at Stockholm University so that they may not be linked to our recording. When the study is completed and the thesis has passed assessment, I will destroy the original data that has been collected (e.g. film/sound files or digital survey). The results of the study will be published in the thesis in a manner that will not reveal the participant's identity. The study adheres to the guidelines on research ethics and common laws.

In order to complete the study, it is very valuable for us to receive your consent. Please contact me in case you need further information.

Khondaker Refai Arafat

Email: khar1482@student.su.se

Telephone: 0733329723

Date: 22-Sept-2024

Signature ……

Appendix C - Data Collection Protocols Used

Semi-Structured Interview Guide

This appendix provides the structure and key questions used in the semi-structured interviews conducted as part of the research titled "Factors Impacting Cloud Computing Adoption in FinTech Companies: A Qualitative study from the perspective of Austria." The interviews were designed to explore the factors influencing cloud adoption in the FinTech sector, with a focus on Austrian companies.

Introduction and Warm-up:

Introduction to the Research:

Briefly explain the purpose of the research.

Outline the structure of the interview and what to expect.

Ensure confidentiality and obtain consent for recording the interview.

Background Information:

Could you please describe your role in your organization?

How long have you been working in the FinTech sector, specifically in relation to cloud computing or cybersecurity?

Research Questions:

RQ1: Which factors have a positive impact on cloud adoption in Austrian FinTech companies?

RQ2: Which factors have a negative impact on cloud adoption in these companies?

RQ3: What are the magnitudes of these positive and negative impacts?

Related to Main Research Questions:

How important is data privacy and security in your decision-making process when considering cloud adoption?

What specific security concerns have influenced your organization’s stance on cloud adoption?

How does your organization assess the trustworthiness of cloud providers?

What challenges, if any, have you faced in integrating cloud solutions with your existing IT infrastructure?

Can you describe your experience with the interoperability of cloud services and legacy systems?

How do you evaluate the performance and reliability of cloud services compared to traditional on-premise solutions?

What role do disaster recovery capabilities play in your decision to adopt cloud computing?

How would you describe your organization’s culture towards innovation and new technologies like cloud computing?

What level of support does cloud adoption have from your organization's leadership?

How does your organization align cloud adoption with its overall business goals?

Can you describe the involvement of stakeholders in the cloud adoption decision-making process?

What financial considerations have influenced your decision to adopt or not adopt cloud computing?

How does your organization manage the costs associated with cloud adoption, both initial and ongoing?

How do regulatory requirements like GDPR impact your organization's cloud adoption strategy?

What challenges do you face in ensuring compliance when using cloud services?

How important is cloud adoption for maintaining a competitive advantage in the FinTech market?

How does market pressure influence your organization's approach to cloud adoption?

What legal considerations are most critical when negotiating contracts with cloud providers?

How does your organization handle issues related to data ownership and service level agreements (SLAs)?

How does the availability of skilled IT personnel affect your organization's ability to adopt cloud technologies?

What are the training and development needs associated with cloud adoption?

How has your organization addressed employee resistance to the adoption of cloud technologies?

What strategies have been most effective in encouraging user acceptance of cloud computing?

How does your organization facilitate collaboration between different departments during cloud adoption?

What communication channels are in place to ensure smooth adoption and integration of cloud solutions?

Wrap-Up:

Is there anything else you would like to add that we haven't covered?

Do you have any questions about the research or the interview process?

Thank You:

Thank the participant for their time and valuable insights.

Appendix D - Parts of the data collected (Transcript used for the qualitative study)

Expert 1: Sangita Bhattacharjee (Austrian Government Cloud-native Cybersecurity Sector)

RQ1: Which factors have a positive impact on cloud adoption in Austrian FinTech companies?

"In my experience, the adoption of robust data encryption standards has greatly enhanced the trust in cloud computing within the FinTech sector. Government-backed encryption protocols are seen as a strong positive driver, ensuring that data remains secure both at rest and in transit."

"The ability of cloud solutions to scale based on demand is particularly appealing. FinTech companies benefit from the flexibility to scale resources up or down depending on transaction volumes, which is crucial during peak times like Black Friday or during financial market fluctuations."

"Strong leadership support is crucial for successful cloud adoption. When the top management is committed and actively promotes cloud initiatives, it sets a clear direction and motivates the entire organization to embrace the change."

"One of the most compelling positive factors is the potential for operational cost savings. By migrating to the cloud, FinTech companies can reduce their expenditures on maintaining physical infrastructure, which allows for reallocating resources to more strategic areas."

"Compliance with GDPR has actually driven cloud adoption in many cases. Cloud providers often offer robust data protection measures that help FinTech companies comply with GDPR, thus making cloud solutions attractive."

"The intense market pressure to innovate acts as a positive driver for cloud adoption. FinTech companies in Austria are compelled to adopt cloud solutions to remain competitive and meet the rapidly evolving demands of their customers."

"The availability of skilled IT professionals with expertise in cloud technologies is a major positive factor. When FinTech companies have access to a workforce that understands cloud architecture and security, it greatly facilitates the adoption process."

"Strong collaboration across departments is also crucial. When IT teams, security professionals, and business units work together seamlessly, it significantly enhances the likelihood of successful cloud adoption."

RQ2: Which factors have a negative impact on cloud adoption in these companies?

"Data breaches remain a significant concern, especially when sensitive financial data is involved. Even with advanced encryption, the potential for breaches—whether through sophisticated cyber-attacks or insider threats—can deter companies from fully embracing cloud solutions."

"Another challenge is the complexity of integrating cloud services with existing IT infrastructure. Legacy systems in many financial institutions are not always cloud-compatible, leading to significant time and resource investments to achieve smooth integration."

"Budget constraints are a significant barrier. Initial investment costs for migrating to the cloud can be substantial, and not all FinTech companies have the financial flexibility to undertake such investments without impacting other critical areas."

"Effective change management is often lacking, which can impede cloud adoption. Without a structured approach to managing the transition, organizations may face resistance from employees and disruptions in their operations."

"Regulatory uncertainty is a significant barrier. The ambiguity around future regulations and their potential impact on cloud services makes it difficult for FinTech companies to commit fully to cloud adoption."

"The cost of ensuring regulatory compliance, especially with multiple overlapping regulations, can be prohibitive. These costs often deter smaller FinTech companies from adopting cloud solutions as they struggle to manage these financial burdens."

"Employee resistance to change can be a significant hurdle. If the workforce is not on board with moving to cloud-based systems, it can slow down or even derail adoption efforts."

"Knowledge gaps in cloud technologies among existing staff are another challenge. Without sufficient expertise, companies may face difficulties in managing cloud infrastructure, leading to potential security risks and inefficiencies."

RQ3: What are the magnitudes of these positive and negative impacts?

"The impact of strong encryption and scalability on cloud adoption is substantial. Companies that have implemented these successfully report a significant boost in both operational efficiency and customer trust, which is crucial in the financial sector."

"On the other hand, the fear of data breaches and integration challenges can severely hinder cloud adoption. For some institutions, these concerns are deal-breakers, causing them to delay or even abandon their cloud initiatives despite the evident benefits."

"Adherence to GDPR and the pressure to innovate have a strong positive impact. These factors push companies toward cloud adoption as a means of staying compliant and competitive in the market."

"Regulatory uncertainty and high compliance costs have a substantial negative impact. They introduce risk and financial strain, making cloud adoption a more challenging proposition for many FinTech companies."

"The presence of skilled IT personnel and effective cross-departmental collaboration have a high positive impact. They are often the key differentiators between successful and unsuccessful cloud adoption efforts."

"Employee resistance and knowledge gaps have a significant negative impact. These factors can create substantial delays and increase the costs associated with cloud adoption, as companies may need to invest heavily in training and change management programs."

Expert 2: Dr. Sadek Ferdous Ripul (Vienna University's Academic Research on Cloud-native Cybersecurity)

RQ1: Which factors have a positive impact on cloud adoption in Austrian FinTech companies?

"FinTech companies are increasingly attracted to the high uptime guarantees provided by leading cloud providers. The promise of near-constant availability, backed by robust Service Level Agreements (SLAs), is a significant positive factor encouraging cloud adoption."

"Cloud platforms offer performance optimization features that are particularly beneficial for FinTech companies. These include automated load balancing and resource allocation, which ensure that financial transactions are processed quickly and efficiently."

"Organizational agility plays a key role in facilitating cloud adoption. FinTech companies that are agile and can quickly adapt to new technologies are better positioned to leverage the benefits of cloud computing effectively."

"When cloud adoption is strategically aligned with the company's business goals, it ensures that the technology implementation supports overall objectives, enhancing its positive impact on the organization."

"The ability to gain a competitive advantage through cloud adoption is a key positive factor. By leveraging cloud technologies, FinTech companies can offer innovative services more quickly than their competitors."

"Well-structured SLAs with cloud providers can enhance trust and ensure that the company's critical needs are met, which encourages cloud adoption. These agreements provide a clear framework for performance, uptime, and accountability."

"When companies invest in training and development for their staff, it positively impacts cloud adoption. Continuous learning programs ensure that employees are equipped with the latest knowledge in cloud technologies, which is critical for successful implementation."

"Providing incentives for employees to adopt new technologies can also be very effective. When staff see clear benefits from using cloud solutions, such as improved efficiency or career growth opportunities, they are more likely to embrace the change."

RQ2: Which factors have a negative impact on cloud adoption in these companies?

"A major concern is the perceived loss of control over data when it is stored in the cloud. Financial institutions are particularly wary of this because they are obligated to comply with stringent data protection regulations, which mandate strict control over customer data."

"Latency can be a critical issue in financial services, where milliseconds can affect trading outcomes. Despite advancements in cloud technology, latency remains a concern, particularly for high-frequency trading operations."

"Inadequate resource allocation can be a major impediment. Without sufficient allocation of both financial and human resources, cloud adoption initiatives may struggle to gain the necessary momentum and support."

"Lack of stakeholder involvement is another critical negative factor. If key stakeholders are not engaged or do not see the value in cloud adoption, it can lead to a lack of support and hinder the implementation process."

"Concerns over data ownership rights can negatively impact cloud adoption. FinTech companies are wary of losing control over their data when it resides on external servers, which can lead to hesitation in adopting cloud solutions."

"Legal obligations, particularly those related to cross-border data transfers, can be a significant deterrent. Navigating the complex legal landscape of cloud services can discourage companies from moving their operations to the cloud."

"A lack of adequate user training and support can severely hamper cloud adoption. If employees do not feel confident in their ability to use new cloud-based tools, they may resist or underutilize these technologies."

"Poor team dynamics, especially when it comes to communication and collaboration, can negatively impact cloud adoption. If teams are not aligned or if there is a lack of trust between departments, it can lead to implementation challenges."

RQ3: What are the magnitudes of these positive and negative impacts?

"The impact of high availability and performance optimization on cloud adoption is quite significant. These factors enable FinTech companies to offer more reliable and faster services to their customers, which directly translates into competitive advantage."

"Conversely, the impact of data control concerns and latency issues can be quite severe, particularly for companies involved in high-stakes financial transactions. These issues can lead to reluctance or even refusal to migrate critical operations to the cloud."

"Organizational agility and strategic alignment have a significant positive impact. These factors not only facilitate smoother transitions but also ensure that cloud adoption delivers tangible benefits aligned with business objectives."

"Resource allocation and stakeholder involvement have considerable negative impacts when they are insufficient. These issues can create bottlenecks and reduce the overall effectiveness of cloud adoption efforts, leading to incomplete or failed implementations."

"Competitive advantage and strong SLAs have a considerable positive impact. These factors directly support business growth and operational efficiency, making cloud adoption more attractive."

"Data ownership concerns and legal obligations have a major negative impact. They can stall or completely halt cloud adoption processes due to the potential risks and legal complexities involved."

"Investing in training and offering incentives can have a moderate to high positive impact. These factors help build a knowledgeable and motivated workforce, which is essential for successful cloud adoption."

"Inadequate user training and poor team dynamics can have a substantial negative impact. These issues can lead to low adoption rates and may require additional time and resources to address, slowing down the overall process."

Expert 3: Adnan Mahmud (CTO of an Austrian Cloud Security Provider Company)

RQ1: Which factors have a positive impact on cloud adoption in Austrian FinTech companies?

"Trust in cloud providers has been steadily increasing as these companies continue to invest in security and compliance. Certifications such as ISO 27001 and regular third-party audits have been pivotal in building this trust, making cloud adoption a more viable option for FinTech companies."

"Cloud services offer robust disaster recovery options, which are critical for financial institutions. The ability to quickly recover from outages or data loss incidents without significant downtime is a strong incentive for cloud adoption."

"An innovation-driven culture encourages experimentation and the adoption of new technologies like cloud computing. FinTech companies that foster an environment where innovation is valued are more likely to successfully integrate cloud solutions."

"Having the necessary resources available, including skilled personnel and financial support, significantly boosts cloud adoption. It ensures that the company can effectively manage and sustain cloud initiatives."

"Meeting customer expectations, particularly in terms of service availability and security, is a significant positive factor. Customers are increasingly demanding cloud-based services, which drives FinTech companies to adopt cloud solutions."

"Strong relationships with cloud vendors can facilitate easier adoption. When FinTech companies trust their cloud providers and have negotiated favorable terms, they are more likely to transition their operations to the cloud."

"Having team members who are already experts in cloud technologies is a strong positive factor. This expertise allows companies to implement cloud solutions more efficiently and with fewer risks."

"Effective knowledge sharing practices within the organization can also greatly facilitate cloud adoption. When employees freely share their insights and experiences, it creates a culture of learning and innovation that supports cloud initiatives."

RQ2: Which factors have a negative impact on cloud adoption in these companies?

"Multi-tenancy is a double-edged sword. While it allows for cost savings, it also introduces risks, such as data leakage between tenants. This is a particularly sensitive issue for FinTech companies that handle confidential financial data."

"Another significant hurdle is the complexity of integrating cloud solutions with existing systems, especially when those systems are outdated or highly customized. This integration often requires extensive re-engineering, which can be costly and time-consuming."

"The high initial costs associated with cloud migration can be prohibitive, especially for startups and smaller FinTech firms. These costs include not only the financial investment but also the time and effort required to transition systems."

"A rigid decision-making hierarchy can slow down the adoption process. When decisions require multiple approvals from various levels of management, it can delay the implementation of cloud solutions."

"Unclear liability and risk-sharing terms in contracts can deter cloud adoption. FinTech companies are cautious about potential legal disputes and financial liabilities that might arise from cloud service failures."

"Regulatory uncertainty remains a significant concern. The lack of clear, consistent regulations across jurisdictions creates a challenging environment for cloud adoption, particularly for companies operating internationally."

"One of the biggest barriers is employee resistance to change. This resistance often stems from a lack of understanding or fear of the unknown, which can be mitigated with proper communication and training."

"Inadequate communication channels can also be a significant obstacle. If there is poor communication between departments or from leadership, it can lead to misunderstandings and a lack of alignment on cloud adoption strategies."

RQ3: What are the magnitudes of these positive and negative impacts?

"Trust in cloud providers and the availability of disaster recovery solutions have a profound positive impact. These factors significantly lower the perceived risk of cloud adoption, leading to broader acceptance in the financial sector."

"The negative impact of multi-tenancy risks and integration challenges can be substantial. These concerns often lead to hesitancy in fully embracing cloud solutions, particularly for core banking operations where the stakes are highest."

"Innovation culture and resource availability have a substantial positive impact. These factors enable FinTech companies to adopt cloud technologies more seamlessly and leverage them to drive business growth and innovation."

"Initial investment costs and a rigid decision-making hierarchy can have a major negative impact, particularly in fast-paced environments where agility is essential. These barriers can prevent timely adoption and limit the scalability benefits of cloud computing."

"Customer expectations and strong vendor relationships have a high positive impact on cloud adoption. These factors ensure that cloud solutions meet the operational and security needs of FinTech companies, aligning with their strategic goals."

"Liability concerns and regulatory uncertainty have a severe negative impact. These issues can cause significant delays in cloud adoption as companies attempt to mitigate potential risks."

"Expertise in cloud technologies and strong knowledge-sharing practices have a high positive impact. They create an environment where cloud adoption is not only possible but is also seen as a strategic advantage."

"Employee resistance and poor communication have a considerable negative impact. These factors can cause delays and create friction within the organization, making the cloud adoption process more difficult and resource-intensive."

Expert 4: Rubaiyyaat Aakbar (Consultant of Financial Institute's Cybersecurity Expert)

RQ1: Which factors have a positive impact on cloud adoption in Austrian FinTech companies?

"The availability of advanced encryption technologies is a critical positive factor. FinTech companies are increasingly confident that their data remains secure when encrypted, both during transmission and while at rest in the cloud."

"Improved tools and technologies for system integration have made cloud adoption more feasible. Compatibility with existing systems, including APIs and middleware, is now less of a barrier, which positively influences adoption rates."

"Effective change management strategies are essential for cloud adoption. When organizations have robust processes in place to manage change, it reduces resistance and facilitates smoother transitions to cloud-based systems."

"Leadership support is critical. When leaders are proactive in advocating for cloud adoption and providing the necessary resources and encouragement, it greatly enhances the likelihood of successful implementation."

"Adopting cloud solutions that comply with industry-specific regulations, such as those in the financial sector, is seen as a positive step. These solutions are often designed to meet stringent regulatory requirements, making them an attractive option for FinTech companies."

"Market pressure to stay ahead of competitors by offering innovative services is a key driver of cloud adoption. The cloud allows FinTech companies to develop and deploy new services more rapidly, which is crucial in a competitive market."

"The perceived ease of use of cloud technologies is a critical positive factor. When employees find cloud solutions intuitive and user-friendly, they are more likely to adopt them quickly and efficiently."

"Strong collaboration channels, especially between IT and other departments, play a significant role in the success of cloud adoption. These channels ensure that everyone is on the same page and that potential issues are addressed promptly."

RQ2: Which factors have a negative impact on cloud adoption in these companies?

"Latency is still a significant concern, particularly for real-time applications like financial trading platforms. The delay introduced by data traveling to and from the cloud can be detrimental, leading to a preference for on-premise solutions in critical scenarios."

"The perception of losing control over data when it is hosted on third-party cloud platforms continues to be a deterrent. Financial institutions are particularly sensitive to this issue, given their regulatory obligations."

"Budget constraints are a significant barrier. Limited financial resources can restrict the ability of FinTech companies to invest in cloud technologies, hindering their ability to fully leverage cloud benefits."

"Sometimes, cloud adoption initiatives are not well-aligned with the company's strategic goals. This misalignment can lead to ineffective implementation and underutilization of cloud resources, ultimately negating potential benefits."

"The costs associated with compliance, particularly when dealing with multiple regulatory bodies, can be a significant deterrent. These expenses can be substantial, especially for smaller companies, making cloud adoption less financially viable."

"Legal obligations, especially concerning data privacy and cross-border data transfers, pose serious challenges. These obligations can be difficult to navigate and may lead companies to delay or avoid cloud adoption."

"Knowledge gaps, especially in understanding the nuances of cloud security, can be a significant barrier. Without sufficient knowledge, employees may make mistakes that compromise the security and efficiency of cloud operations."

"Improper resource allocation, where not enough time or budget is dedicated to training and support, can severely impact cloud adoption. Companies that underestimate the resources required for a successful transition to the cloud often struggle with implementation."

RQ3: What are the magnitudes of these positive and negative impacts?

"The impact of strong encryption standards and improved system compatibility is very positive. These factors reduce the barriers to cloud adoption and help FinTech companies achieve compliance while benefiting from cloud efficiencies."

"However, the negative impact of latency and data control concerns cannot be overstated. For many FinTech companies, these are critical factors that significantly delay or even prevent the adoption of cloud solutions for sensitive operations."

"Change management and leadership support have a strong positive impact on cloud adoption. These factors ensure that the transition is well-coordinated and that the organization is fully committed to leveraging cloud technologies for strategic advantage."

"Budget constraints and poor strategic alignment can have a severe negative impact. These factors can prevent organizations from making the necessary investments and ensure that cloud adoption efforts do not contribute meaningfully to business objectives."

"Industry-specific regulations and market innovation pressures have a strong positive impact, driving FinTech companies to adopt cloud solutions that are compliant and enable them to remain competitive."

"Compliance costs and legal obligations have a significant negative impact. These factors increase the complexity and cost of cloud adoption, particularly for companies that must adhere to multiple regulatory frameworks."

"Perceived ease of use and effective collaboration channels have a strong positive impact. These factors directly contribute to smoother transitions and higher user acceptance of cloud technologies."

"Knowledge gaps and poor resource allocation have a high negative impact. These issues can lead to security vulnerabilities, operational inefficiencies, and ultimately, a failure to fully realize the benefits of cloud adoption."