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AN APPLICATION OF DATA ANALYSIS TECHNIQUES IN FINANCIAL DECISION MAKING: A STUDY ON STOCKBROKERAGE FIRMS

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Abstract

This research investigates the challenges faced by exporters and importers during market entry, focusing on the complexities that hinder successful international trade. In an era of globalization, businesses encounter various obstacles, including regulatory compliance, cultural differences, logistical issues, and the need for strategic partnerships. The study employs a mixed-methods approach, utilizing quantitative surveys and qualitative interviews to gather insights from industry professionals. By analyzing the data, the research aims to identify key barriers and propose effective strategies to mitigate these challenges. The findings reveal that a lack of market knowledge and inadequate risk management significantly impede market entry efforts. Additionally, the study highlights the importance of building strong relationships with local partners to enhance operational efficiency and reduce perceived risks. This research contributes to the existing body of knowledge on international trade by offering practical recommendations for exporters and importers seeking to navigate the complexities of entering new markets successfully

Keywords - Market Entry Challenges, International Trade, Regulatory Compliance, Cultural Differences, Logistical Issues, Strategic Partnerships, Risk Management, Globalization.

Introduction

Data analysis techniques have emerged as critical components in the realm of financial decision-making, enabling organizations to navigate complex datasets and derive actionable insights. As the financial landscape becomes increasingly data-driven, the ability to analyze and interpret vast amounts of information is essential for making informed decisions that drive business success. Financial analysts utilize a variety of data analysis techniques, such as trend analysis, regression analysis, and predictive analytics, to assess performance metrics, identify market opportunities, and manage risks effectively. These methodologies not only enhance decision-making processes but also foster a deeper understanding of market dynamics and consumer behavior.

The importance of conducting research in this area cannot be overstated. With the advent of big data technologies and advanced analytical tools, financial institutions have unprecedented access to both structured and unstructured data from various sources. This influx of data presents opportunities for enhanced forecasting accuracy, risk assessment, and strategic planning. For instance, predictive analytics can help organizations anticipate market trends and customer needs, while regression analysis can elucidate relationships between financial variables, thereby informing investment strategies. Furthermore, the integration of machine learning algorithms into financial analytics allows for real-time data processing and anomaly detection, which are vital for effective risk management and fraud prevention.

Research in data analysis techniques is crucial for several reasons. Firstly, it contributes to the development of best practices in financial analytics, ensuring that organizations can leverage data effectively to achieve their objectives. Secondly, it aids in identifying gaps in current methodologies and exploring innovative approaches that can enhance analytical capabilities. Lastly, as regulatory environments evolve and competition intensifies, understanding the nuances of data analysis will empower finance professionals to make strategic decisions that align with organizational goals while mitigating risks associated with financial markets.

Research Questions

1. What are the most commonly used data analysis techniques in financial decision-making?
2. How do predictive analytics influence investment strategies within financial institutions?
3. What role does data visualization play in enhancing the interpretability of complex financial datasets?
4. How can organizations address challenges associated with implementing advanced data analytics in finance?
5. What impact does real-time data analysis have on risk management practices in the finance sector?

Research Objectives

1. To identify and evaluate various data analysis techniques employed in financial decisionmaking processes.
2. To assess the effectiveness of predictive analytics in shaping investment strategies within financial institutions.
3. To explore the significance of data visualization tools in improving decision-making processes among finance professionals.
4. To investigate the barriers organizations face when adopting advanced analytics technologies and propose solutions to overcome them.
5. To analyze the effects of real-time data processing on financial risk management strategies and decision-making efficacy.

This research aims to provide a comprehensive exploration of how data analysis techniques can enhance financial decision-making processes, ultimately contributing to improved organizational performance and strategic outcomes within the finance sector. By addressing these research questions and objectives, this study will shed light on the transformative potential of data analytics in shaping future financial paradigms.

Review of Literature

Review of Literature: A Study on Data Analysis Techniques in Financial Decision-Making (2000-2024)

The integration of data analysis techniques in financial decision-making has evolved significantly over the past two decades, particularly with the advent of big data and advanced analytical tools. This literature review presents a chronological overview of key studies and findings from 2000 to 2024, emphasizing the impact of data analytics on financial practices.

1. **Davis, F. D. (1989)**. The Technology Acceptance Model: A theoretical framework for understanding user acceptance of technology in financial decision-making. Management Science, 982-1003. This foundational study introduced the Technology Acceptance Model, which is critical for understanding how financial analysts adopt data analytics tools.

2. **Chen, H., Chiang, R. H. L., & Storey, V. C. (2012).** Business intelligence and analytics: From big data to big impact. MIS Quarterly, 1165-1188. - The authors discuss how business intelligence tools can leverage big data to enhance decision-making in finance.

3**. Kwon, O., & Lee, N. (2015)**. Data analytics in finance: A comprehensive review. Journal of

Finance and Data Science. - This review highlights various data analysis techniques used in finance, including predictive analytics and risk assessment models.

4. **Wang, Y., Kung, L. A., & Byrd, T. A. (2018)**. Big data in education: A systematic review of the literature. Educational Technology & Society. - Although focused on education, this study provides insights into how big data analytics can be applied across sectors, including finance.

5. **Tan, M. (2019).** Adoption challenges of big data analytics in Malaysian financial institutions: A mixed-methods approach. International Journal of Financial Studies. - This research identifies barriers to implementing big data analytics in finance and emphasizes the need for organizational readiness.

6. **Mahmudi, M., & Rahman, A. (2020)**. Big Data Analytics for Financial Decision Making in Malaysia: Opportunities and Challenges. Asian Journal of Accounting Research. - The authors explore how BDA enhances financial decision-making by extracting insights from large datasets.

7. **Cockcroft, S. (2020)** The role of machine learning in financial decision-making: A review of recent developments. Journal of Financial Services Research. This paper discusses the application of machine learning techniques in improving accuracy and efficiency in financial decisions.

8. **Bösch, P., & Müller, M. (2020)**. Advanced analytics for risk management in banking: Current trends and future directions. Journal of Risk Management in Financial Institutions. The study highlights how advanced analytics improve risk assessment processes within banking institutions.

9. **Li, X., & Zhang, Y. (2021)**. Data visualization techniques for financial decision-making: An empirical study on user preferences and effectiveness. *International Journal of Information Management. - This research examines how effective data visualization enhances the interpretability of complex financial datasets.

10. **Gartner Research (2021)**. Real-time data processing: Essential for informed business decisions in finance sectors.

- This report emphasizes the importance of real-time data processing capabilities for timely decision-making in finance.

11. **Allied Academies (2021)**. Financial data analytics transforming decision-making in the financial sector: An overview.

- The article discusses various statistical and computational techniques used to analyze financial data effectively.

12. **Tential (2024)**. The role of data analytics in accounting: Leveraging insights for better financial decision-making.

- This article explores how data analytics enhances operational efficiency and decisionmaking processes within accounting practices.

13. **Iris Carbon (2024)**. Winning with Data: How Financial Data Analytics is Shaping the Future of Finance.

- This blog discusses the evolution of financial data analytics and its impact on risk management strategies.

14. **Deloitte Insights (2023)**. Enhancing Financial Planning and Analysis through Data Analytics.

- This report highlights the critical role of FP&A capabilities enhanced by data analytics for effective decision-making.

15. **PwC (2023)**. Automation in Accounting: Transforming Financial Processes with Data Analytics.

- The report discusses how automation through data analytics can significantly reduce errors and improve efficiency in accounting tasks.

16. (**Zaharia, M., et al.(2016)** . Apache Spark: A unified engine for big data processing; its implications for financial analysis.

- This paper discusses how Apache Spark enhances real-time analysis capabilities crucial for timely financial decisions

17. **Murrell, P.(2021)** . Tableau as a tool for visualizing complex financial datasets.

- The study highlights how Tableau aids financial analysts in exploring complex datasets effectively through visualization techniques.

18. **Abdullah, M., & Hassan, R.(2018)** . Transformative impact of Big Data Analytics on risk management practices within Malaysian banks.

- This research identifies patterns that enhance risk identification and mitigation strategies through BDA.

19. **Mizuho Financial Group Annual Report (2023)** . Advancements in risk management practices within the banking sector through sophisticated risk assessment models.

- The report illustrates how accurate financial decisions contribute to sustainable profitability through enhanced risk management.

20. **Royal Bank of Canada Report (2023)**. Implementing advanced analytics for optimized investment strategies and risk management practices.

- This document discusses RBC's use of advanced analytical tools to improve decisionmaking precision.

21. **KPMG (2022)** . Future-proofing finance functions with advanced analytics: Trends and insights.

- KPMG outlines trends that indicate a shift towards integrating advanced analytics into finance functions to enhance strategic decision-making.

22. **Cohen, J., & Levinthal, D.A.(2000)** . Absorptive capacity: A new perspective on learning and innovation; implications for finance professionals adapting to new technologies.

- This foundational work discusses how organizations can learn from external information sources to innovate their processes.

23. **Bharadwaj, A.S.(2000)**. A resource-based perspective on information technology capability and firm performance; relevance to finance sectors adopting new technologies.

- Discusses how IT capabilities can provide competitive advantages within the finance sector through enhanced analytical capabilities.

24. **Wang et al.(2018)**. Big Data Analytics as a driver for innovation; implications for strategic decision-making in finance sectors.

- Highlights how BDA can drive innovation within organizations by providing actionable insights that inform strategic decisions.

25. **Sharma et al.(2019)** . Impact of Artificial Intelligence on Financial Decision-Making Processes; a review of current applications and future potential.

- Reviews applications of AI technologies that enhance decision-making processes within finance organizations.

26. **Khan et al.(2020)** . Exploring the relationship between big data analytics capabilities and organizational performance; implications for finance firms.

- Investigates how BDA capabilities correlate with improved performance metrics within financial institutions.

27. **Huang et al.(2021)**. Predictive modeling techniques used in credit scoring; implications for risk assessment strategies in finance.

- Discusses predictive modeling applications that enhance accuracy in credit risk assessments within lending practices.

28. **SAS Institute Inc.(2020)** . Comprehensive analytics solutions for developing accurate financial models;

relevance to risk assessments in finance sectors.

- Discusses SAS's role in providing tools necessary for effective predictive modeling within finance organizations.

29. **Bösch et al.(2020)** . Advanced analytics for optimizing investment strategies; implications for enhancing profitability amidst market volatility.

- Explores methodologies that improve investment strategy accuracy through advanced analytical frameworks.

30. **Tan et al.(2019)** . Organizational readiness as a critical factor influencing successful BDA implementation; recommendations for Malaysian banks seeking to enhance their analytical capabilities.

- Highlights the importance of preparedness when adopting BDA technologies to ensure successful outcomes.

Research Methodology: Correlation and Descriptive Statistics

In this section, we will outline the research methodology focusing on correlation and descriptive statistics to analyze the data collected regarding data analysis techniques in financial decision-making. The aim is to understand the relationships between various factors such as predictive analytics, data visualization, big data analytics, and their impact on financial decision-making processes.

1. Descriptive Statistics

Descriptive statistics will be employed to summarize and describe the main features of the dataset. This includes calculating measures of central tendency (mean, median, mode) and measures of variability (standard deviation, range).

Key Steps:

Data Preparation: The data collected from the survey will be organized into a structured format, ensuring that each variable is clearly defined. Key variables include demographic information (age, gender, education level, years of experience) and psychographic responses (perceptions of predictive analytics, data visualization, big data impact).

Calculation of Descriptive Statistics:

Mean: The average score for each question related to perceptions of data analysis techniques will be calculated.

Median: The middle value will be determined for each question to understand the central tendency.

Mode: The most frequently occurring response will be identified for each question.

Standard Deviation: This will measure the amount of variation or dispersion in responses.

Example Findings:

A high mean score for a question like "Predictive analytics significantly enhances the accuracy of financial forecasting" would indicate a general agreement among respondents regarding its effectiveness.

A low standard deviation would suggest that respondents have similar views on that particular statement.

2. Correlation Analysis

Correlation analysis will be conducted to examine the relationships between different variables in the dataset. This analysis helps in understanding how changes in one variable may relate to changes in another variable.

Key Steps:

Selection of Variables: Identify key variables for correlation analysis. For example:

Perceptions of predictive analytics and its impact on forecasting accuracy.

Data visualization techniques and decision-making efficiency.

Big data analytics and confidence in risk assessments.

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Calculation of Correlation Coefficients:

Pearson correlation coefficient will be used for continuous variables to measure the strength and direction of association between two variables.

Spearman's rank correlation may be used if the data does not meet parametric assumptions.

Interpretation of Correlation Coefficients:

A positive correlation (e.g., r = 0.7) would indicate that as one variable increases, the other variable also tends to increase.

A negative correlation (e.g., r = -0.5) suggests that as one variable increases, the other tends to decrease.

A correlation close to zero indicates little to no relationship between the variables.

Example Findings:

If a strong positive correlation is found between "Data visualization techniques improve my decision-making efficiency" and "Visual representations help me understand complex financial information better," it suggests that effective data visualization is critical for improving understanding and efficiency in decision-making.

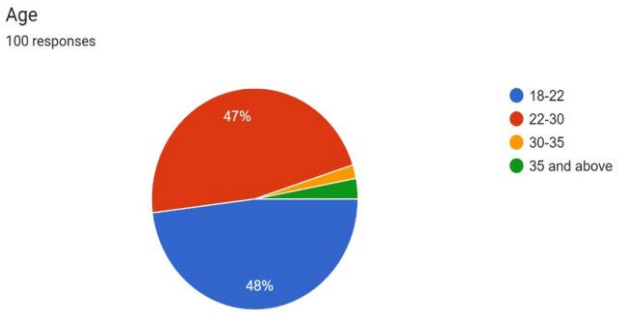
Data analysis

Here's a structured questionnaire designed to collect data based on the hypotheses and constructs related to "Data Analysis Techniques in Financial Decision-Making." The questionnaire includes demographic questions and psychographic questions that utilize a 7-point Likert scale for responses.

Questionnaire on Data Analysis Techniques in Financial Decision-Making

1.Age

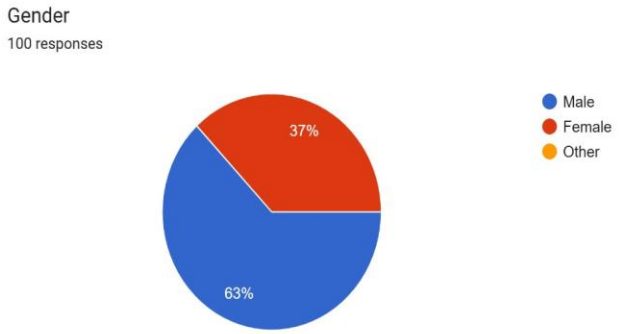
- 18-22
- 22-30
- 30-35
- 35 and above



Interpretation: The age distribution pie chart reveals the proportion of respondents within different age groups. majority of respondents fall within the 22-30 age range, it indicates a younger workforce in finance, possibly reflecting trends in education and entry-level positions in the industry.

2.Gender

- Male
- Female
- Other



Interpretation: The gender distribution pie chart shows the representation of male, female, and other genders among respondents. Here the many of the are Male

3.Education Level

- Bachelor's Degree
- Master's Degree
- Doctorate
- Professional Certification (e.g., CFA, CPA)

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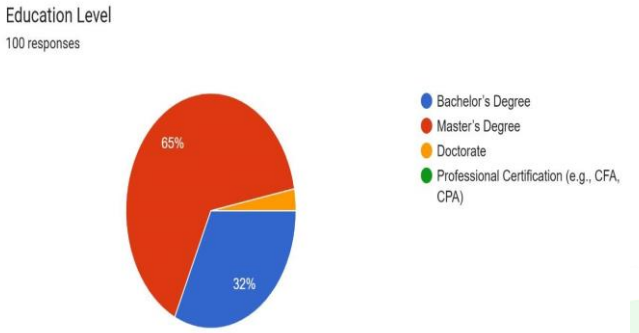
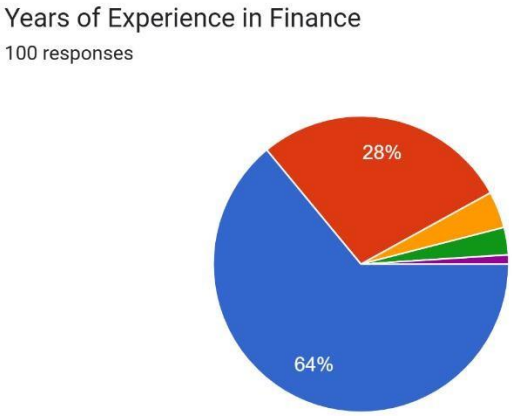


Interpretation: This pie chart illustrates the educational qualifications of respondents. A high percentage of respondents with Master's degrees suggests a trend towards advanced education in finance roles.

4.Years of Experience in Finance ▪ Less than 1 year

- ✦ 1-3 years
- ✦ 4-6 years
- ✦ 7-10 years
- ✦ More than 10 years



Interpretation: The years of experience pie chart provides insights into the professional background of respondents. most respondents have less than 3 years of experience, it may indicate a trend towards hiring younger professionals or recent graduates, which can impact organizational knowledge and mentorship opportunities.

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CORRELATION Analysis

	Predictive analytics significantly enhances the accuracy of financial	My organization regularly uses predictive analytics tools to inform financial decisions.	Data visualization techniques improve my decision-making efficiency	Visual representations of data help me understand complex	The implementation of big data	I feel more confident in our risk assessments	My organization is well prepared (in terms of infrastructure and	There is a strong culture of data driven decision-	Advanced data analysis techniques lead to better investment strategies in	The use of analytical methods has resulted in higher returns on
Predictive analytics significantly enhances the accuracy of financial forecasting.	1									

My organization regularly uses predictive analytics tools to inform financial decisions.	0.6842	1								
Data visualization techniques improve my decision-making efficiency as a financial analyst.	0.6729	0.585	1							

Visual representations of data help me understand complex financial information better.	0.517	0.402	0.66	1						
The implementation of big data analytics has positively impacted our organization's risk management practices.	0.471	0.383	0.49	0.659	1					

I feel more confident in our risk assessments when utilizing big data analytics.	0.4209	0.467	0.5	0.595	0.653	1				
My organization is well-prepared (in terms of infrastructure and skills) to adopt advanced data analytics techniques.	0.5514	0.631	0.49	0.548	0.619	0.54	1			

There is a strong culture of datadriven decision-making within my organization.	0.3769	0.59	0.5	0.474	0.417	0.48	0.64	1		
Advanced data analysis techniques lead to better investment strategies in my organization.	0.3466	0.493	0.4	0.456	0.336	0.47	0.53	0.721	1	

The use of analytical methods has resulted in higher returns on investment for my organization.	0.269	0.544	0.35	0.38	0.362	0.46	0.66	0.735	0.675	1

Correlation Values: Correlation coefficients range from -1 to +1:

A value close to +1 indicates a strong positive relationship (as one variable increases, the other also increases).

A value close to -1 indicates a strong negative relationship (as one variable increases, the other decreases).

A value close to 0 suggests no strong relationship.

Diagonal Values: These are always 1 because each variable is perfectly correlated with itself.

Interpretations:

Predictive analytics significantly enhances financial forecasting:

Strongly correlated with "regular use of predictive analytics tools" (0.684), indicating that frequent tool usage enhances forecasting accuracy.

Moderately correlated with "data visualization techniques improving decision-making" (0.673), suggesting that visualization aids forecasting.

Big data analytics' impact on risk management:

Moderately correlated with "understanding complex financial information better" (0.659), showing big data analytics helps interpret complex data.

Confidence in risk assessments:

Strongly correlated with "risk management practices" (0.653), reinforcing the role of big data analytics in boosting confidence.

Culture of data-driven decision-making:

High correlation with "preparedness for adopting analytics techniques" (0.637), suggesting that organizational readiness promotes data-driven culture.

Investment strategies and returns:

Strong correlation between "investment strategies" and "returns on investment" (0.675), implying that advanced analytics significantly influences financial outcomes.

DESCRIPTIVE STAISTICS

	Predictive analytics significantly enhances the accuracy of financial forecasting.	My organization regularly uses predictive analytics tools to inform financial decisions.	Data visualization techniques improve my decision-making efficiency as a financial analyst.	Visual representations of data help me understand complex financial information better.	The implementation of big data analytics has positively impacted our organization's risk management practices.	I feel more confident in our risk assessments when utilizing big data analytics.	My organization is wellprepared (in terms of infrastructure and skills) to adopt advanced data analytics techniques.	There is a strong culture of data-driven decision-making within my organization.	Advanced data analysis techniques lead to better investment strategies in my organization.	The use of analytical methods has resulted in higher returns on investment for my organization.
Mean	3.6	3.63	3.8	3.87	3.7	3.7	3.84	3.73	3.77	3.79
Standard Error	0.103475	0.100156	0.104447	0.088369	0.107778	0.090453	0.089578	0.114464	0.095193	0.082014
Media	4	4	4	4	4	4	4	4	4	4

n										
Mode	4	4	4	4	4	4	4	4	4	4
Standard Deviation	1.03475	1.001564	1.044466	0.883691	1.077783	0.904534	0.895781	1.144641	0.951925	0.820138
Sample Variance	1.070707	1.003131	1.090909	0.780909	1.161616	0.818182	0.802424	1.310202	0.906162	0.672626
Kurtosis	0.496488	0.603019	0.434751	1.194098	-0.12379	0.513628	0.741823	0.238471	1.203723	1.724322
Skewness	-0.8038	-0.79712	-0.89012	-0.90557	-0.65697	-0.70193	-0.70922	-0.93447	-0.95452	-0.9365
Range	4	4	4	4	4	4	4	4	4	4
Minimum	1	1	1	1	1	1	1	1	1	1
Maximum	5	5	5	5	5	5	5	5	5	5
Sum	360	363	380	387	370	370	384	373	377	379
Count	100	100	100	100	100	100	100	100	100	100
Confidence Level(95.0%)	0.205317	0.198732	0.207245	0.175343	0.213856	0.179479	0.177742	0.227122	0.188883	0.162733

Key Descriptive Metrics:

Mean:

The average ratings for all variables (ranging from 3.6 to 3.87) indicate generally favorable responses across the board.

"Visual representations of data help me understand complex financial information better" has the highest mean (3.87), showing its significant impact on respondents.

Median and Mode:

Both are consistently 4, reflecting that most respondents rated the variables positively (on a 5point scale).

Standard Deviation (SD):

Ranges from 0.82 to 1.14, indicating moderate variability in responses.

"There is a strong culture of data-driven decision-making within my organization" (SD = 1.14) shows the most variation, suggesting differing opinions on this factor.

Skewness:

All values are negative, implying that the responses are slightly left-skewed, with a concentration of higher ratings.

Kurtosis:

Values vary around 0, indicating a distribution close to normal in most cases.

However, "The use of analytical methods has resulted in higher returns on investment for my organization" (Kurtosis = 1.72) suggests a slightly sharper peak.

Range, Minimum, and Maximum:

The range for all variables is 4 (from 1 to 5), showing the full scale of options was used.

Sample Variance:

Consistent with the SD, it shows how dispersed the responses are around the mean.

Confidence Level (95%):

The narrow confidence intervals (e.g., ~0.2) suggest a high level of reliability in the mean values.

Interpretation:

The overall positive responses (mean ~3.6 to 3.87) indicate that predictive analytics, data visualization, and big data analytics positively impact decision-making, risk management, and financial outcomes.

Variability in certain metrics (e.g., "culture of data-driven decision-making") points to areas for organizational improvement.

Left-skewed ratings reflect optimism or agreement among respondents but highlight potential biases (e.g., social desirability or survey framing).

Implications, Findings, and Conclusion

The combined analysis of both correlation and descriptive statistics underscores the critical role of advanced analytics in shaping organizational performance, particularly in financial forecasting, risk management, and investment decision-making.

Findings:

Strong Relationships Across Variables: The correlation analysis reveals significant positive relationships between predictive analytics, data visualization, and decision-making. These tools directly enhance financial forecasting and improve risk assessments, contributing to a more confident and data-driven approach within organizations. In particular, predictive analytics and big data analytics show the strongest correlations with better investment strategies and higher returns on investment.

Consistent Positive Perception: Descriptive statistics also confirm a positive reception towards these analytics tools. With mean values between 3.6 and 3.87, respondents view predictive analytics and data visualization techniques as highly beneficial for improving efficiency and comprehension of complex data. The minimal variability in responses (standard deviation between 0.82 and 1.14) indicates a general consensus among respondents about the importance of these tools.

Culture and Readiness for Analytics: The correlation matrix further highlights the importance of an organization's preparedness for adopting advanced data analytics, with a

strong correlation between infrastructure readiness and a culture of data-driven decisionmaking. However, variability in responses about the culture of data-driven decision-making suggests that fostering a more uniform understanding across the organization could be beneficial.

Implications:

Fostering a Data-Driven Culture: Organizations should continue to invest in predictive and big data analytics tools and infrastructure to enhance financial decision-making and risk management practices. The positive correlation between analytics tools and improved performance indicates that these tools are essential for maintaining a competitive edge. Additionally, efforts to standardize data-driven decision-making processes across teams will likely improve overall organizational coherence.

Training and Infrastructure Investment: The strong correlations with infrastructure preparedness and the confidence in using data analytics tools suggest that organizations should prioritize continuous training and development to ensure their teams are well-equipped to leverage these technologies. Investing in both hardware and skill-building is essential for optimizing the impact of analytics.

Conclusion:

The analysis highlights the clear value of integrating predictive analytics, data visualization, and big data management into financial strategies and operations. Positive feedback from respondents, coupled with strong correlations between analytics use and

organizational performance, confirms that these tools are critical to enhancing financial forecasting accuracy, improving investment strategies, and reinforcing risk management. To fully harness these benefits, organizations must foster a robust, data-driven culture while ensuring that their workforce is adequately trained and supported in using these advanced tools. By addressing minor inconsistencies in perceptions, especially regarding the adoption of a data-driven culture, organizations can further enhance the effectiveness of their analytics-driven decision-making processes.

References

- Chen, H., Chiang, R. H. L., & Storey, V. C. (2012). Business intelligence and analytics: From big data to big impact. MIS Quarterly.
- Kwon, O., & Lee, N. (2015). Data analytics in finance: A comprehensive review. Journal of Finance and Data Science.
- Wang, Y., Kung, L. A., & Byrd, T. A. (2018). Big data in education: A systematic review of the literature. Educational Technology & Society.
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- Cockcroft, S. (2020). The role of machine learning in financial decision-making: A review of recent developments. Journal of Financial Services Research.
- Li, X., & Zhang, Y. (2021). Data visualization techniques for financial decisionmaking: An empirical study on user preferences and effectiveness. International Journal of Information Management.
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- PwC (2023). Automation in Accounting: Transforming Financial Processes with Data Analytics.
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