IMPORTANCE OF DATA ANALYTICS IN BUSINESS

Natyra Dika-Krluku[1]*

[1]Public Enterprise for State Roads, North Macedonia, e-mail: natyra@t.mk

Check for updates

Abstract: In a world increasingly driven by data, data literacy is as essential as literacy itself, especially in the business sector. Consequently, every enterprise needs to build a foundation of data analytics literacy within their workforce. This means enterprises need more people who understand analytics and the benefits they can provide. By building analytics literacy, an enterprise can convert its data into actionable insights that drive decision-making and actions. This, in turn, can enhance business processes and foster greater innovation. To build analytics literacy, business professionals need to understand the various types of analytics they are likely to encounter.

Therefore, the purpose of this paper is to examine the awareness and readiness of business professionals regarding the importance of analytics in everyday business. Do they truly understand what analyses are? Can they distinguish between the different types of analytics and know when and how to use/perform/interpret them? Are they familiar with analytical tools and methods of conducting analyses? Furthermore, do they grasp the overall process of performing analyses—from collecting data to summarizing and presenting outcomes effectively—as a foundation for setting strategies and developing specific actions or tactics to achieve desired outcomes? The results from a survey conducted with several business professionals across different industries on the previously mentioned topics are used for the purposes of this paper.

Keywords: Analytics, data, business, insights, tools, visualization
Field: Economy

1. INTRODUCTION

Data literacy is the ability to read, write, and effectively communicate with data. Analytics literacy can be similarly defined as the ability to read, write, and communicate with analytics. The two are closely related because data is the raw material of analytics. Most companies are collecting data all the time—but, in its raw form, this data doesn't really mean anything. It's what you do with the data that counts

No matter what industry you're operating in, it's essential to understand what has happened in the past, what's going on now, and to anticipate what might happen in the future. The answer lies in data analytics. Data analytics is the process of **making sense of data**. The process starts with collecting data, finding patterns, and then using those patterns to make predictions. These predictions can be used to set goals or make decisions. In sales, for example, you may want to use data analytics to predict how many of a particular product you will sell next month. Knowing that number helps you set goals for your team and plan inventory.

The kinds of insights you get from your data depend on the type of analysis you perform. In data analytics and data science, there are 4 main types of data analysis: **descriptive**, **diagnostic**, **predictive**, and **prescriptive**. For conducting these types of analyses, appropriate tools and methods should be implemented. That is also depended by type of industry where the analyses should be performed

This research, based on the survey conducted with business professionals from various industries, revealed that most participants recognize the importance of data analytics in business operations. However, a significant number of respondents struggle to distinguish types of analyses. There are also gaps in knowledge about analytical tools and other issues.

This study aims to underscore the importance of these aspects in data analytics. It seeks to enhance the understanding of business professionals regarding data analytics and improve their performance by addressing these knowledge gaps.

2. MATERIALS AND METHODS

The survey consisted of a questionnaire with 15 questions covering various aspects of data analytics and was sent to business professionals and others from multiple industries. The questions aimed to assess the knowledge and awareness of businesses regarding analytics, starting with the importance of analytics, their engagement with analyses, and their understanding of different types of analyses. Additionally, the survey examined familiarity with analytical tools, data capture systems, methods of presenting results (including visualizations and storytelling), and awareness of analytics roles existence

---

[*]Corresponding author: natyra@t.mk

within companies. Most of the questions were multiple-choice or checkboxes, with some requiring short explanations to gather opinions on relevant topics.

The collected sample includes responses from 76 employees across both the private and public sectors, primarily professionals from Telecommunications, Construction, Education, and Public Administration. Various roles from different areas are covered, with the most dominant being in HR, IT, Finance, Consultancy. A summary of the results is provided in the next section.

3. RESULTS

Most of respondents stated that analytics are important in their jobs (Figure 1), and 76% that they conduct analyses in their work.
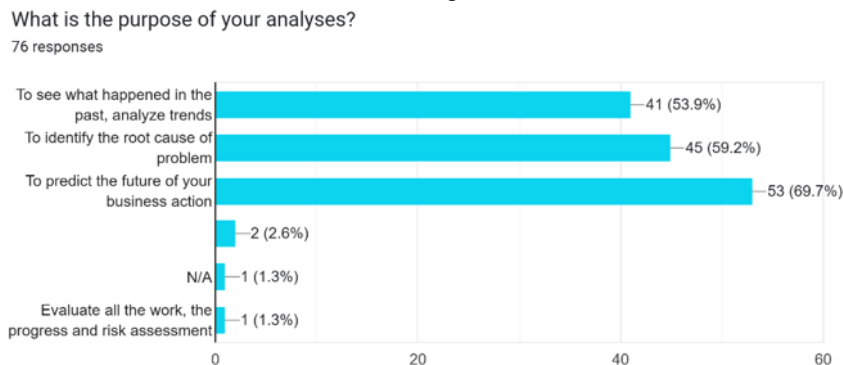
Figure 1
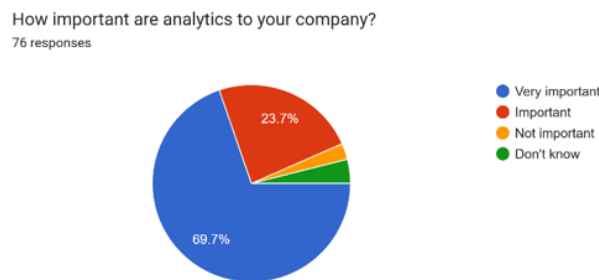
Source: The author

Regarding the question about the purpose of the analyses they conduct (Figure 2), the most frequently chosen response was: "**To predict the future of business actions.**"
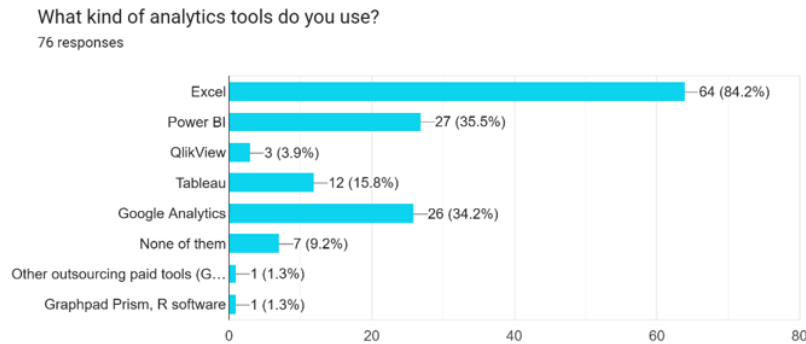
Figure 2

Source: The author

The responses where a short answer was required such as "**What kind of analyses you perform?**" and "**Can you distinguish between quantitative and qualitative analysis?**" where are particularly intriguing and warrant further analysis. The most of responses to the question "What kind of analyses do you perform?" are more like describing job functions. Some examples of provided answer are: "training needs analysis", "KPI performance", "financial analysis", cost-benefit analysis, business cases, market analysis, work tasks, working conditions, etc. Only a few responses (5 from 62) mentioned types of analysis, such as descriptive, prescriptive, or diagnostic.

Regarding the question about the most used tool for conducting analyses, "**Excel**" was the most frequently chosen option (Figure3). Interestingly, despite its widespread use > 30% of respondents were unfamiliar with **Pivot Tables**—Excel feature for summarizing and analyzing data.
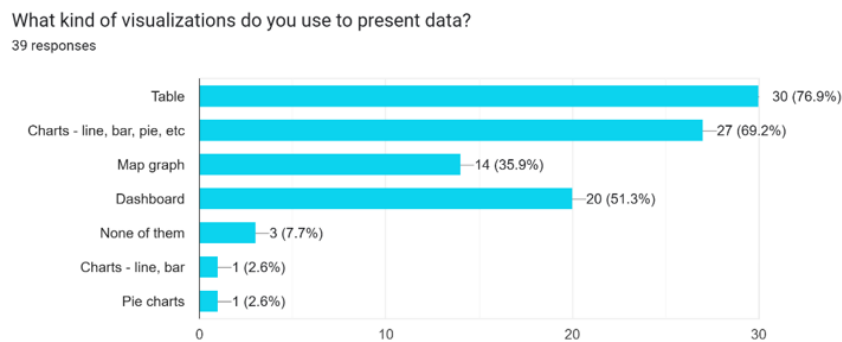
Figure 3

Source: The author

The most used visualizations, according to the survey, were **Tables** and **Charts**.

Figure 4

Source: The author

Regarding awareness of the business analyst role, **one-quarter** of respondents reported that they were not familiar with this role, and another **quarter** indicated that such a role does not exist in their company.

Half of the participants work in large companies, which was expected, since most respondents came from the Telecommunications and Construction industries.

4. DISCUSSIONS

Even though majority of participants have claimed that analytics are important for their companies and most of them are doing analyses for job purposes, the rest of responses suggest that understanding of how to perform and interpret analyses is limited among the respondents.

Obviously, there is a gap not only in understanding analyses and their purpose, but also in the usage of tools for doing analyses, systems that are used for data capture, visualization forms and their linkage with storytelling.

Although most of the participants declared that they use the analyzes for prediction of future, it was expected that this would be reflected in the rest of answers about analyses meaning, difference among them and used tools.

Regarding tools, logically it was expected that familiarity with Pivot tables, built-in features in Excel to be in the same, high level as usage of Excel as a most used tool by respondents of the survey. But that was not the case.

To ensure an effective and efficient analytical process, it's essential to understand the purpose of the analysis. Knowing what you aim to achieve and how it will influence decision-making is crucial. In today's business environment, professionals must be familiar with the 4 types of analytics, each serving a specific purpose and method.

Descriptive analytics the most basic type, which answers the question, "WHAT happened?" This type of analysis provides insight into past events, offering a comprehensive picture of how those events

unfolded. Descriptive analytics use visualizations to represent the data in an easily interpretable way, and producing hindsight. It is mostly used for: understanding past events; reporting metrics; identifying patterns and trends; providing information for business decisions; Benchmarking; Auditing and regulatory compliance.

Common tools for descriptive analytics include **Excel, Tableau, Power BI, QlikView, SAS, Google Analytics, etc.** It is widely used in: Retail Industry, Healthcare, Finance, etc

Diagnostic analytics, which answers the question 'WHY happened.' This type of analysis helps companies understand not only what happened but also why it happened and how they can prevent it from recurring. Also known as root cause analysis, it delves deeper to identify the root cause of events, providing insights into the underlying reasons.

Tools commonly used for diagnostic analytics include **Tableau, Power BI, QlikView, SAS, KNIME**. It is particularly useful in industries such as retail, marketing, finance, operations, healthcare, cybersecurity.

To extract actionable insights from large amounts of data, techniques such as machine learning and artificial intelligence come into play. These advanced techniques enable the next 2 types of analytics to be performed.

Predictive analytics answers the question "WHAT will happen next?" It uses existing data to determine future outcomes or trends. Companies often use this method when developing new products or services, as it provides insights into future customer preferences based on past behavior, producing foresight.

Common tools for predictive analytics include **R, Python, Tableau, Hadoop, RapidMiner, and KNIME**. It is widely applied across various sectors, including retail, finance, transportation and logistics, energy, telecommunications, cybersecurity, and manufacturing.

Prescriptive analytics is an advanced form of analytics that answers the question, "*WHAT SHOULD be done?*" or "*WHAT CAN WE DO to make it happen?*" It goes beyond predictive analytics by using past trends and data to recommend future actions.

Tools commonly used for this type of analysis include **SAS Optimization, IBM Decision Optimization, RapidMiner, Alteryx**. Prescriptive analytics has a wide range of applications across various industries, helping businesses optimize their decisions and operations in supply chain management, retail, finance, transportation and logistics, energy and utilities, telecommunications, and manufacturing.

Knowing the purpose of analysis also determines which type of analysis should be used, how to perform it, and where to apply it. According to Forbes, the top-rated analytical tools in 2024 are:
- **Microsoft Power BI** - for data visualization
- **Tableau** - for business intelligence (BI)
- **Qlik Sense** - for machine learning (ML)
- **Looker** - for data exploration
- **Klipfolio** - for instant metrics
- **Zoho Analytics** - for robust insights
- **Domo** - for streamlining workflows
- **Google Analytics** - for web traffic insight
- **SAP Analytics Cloud** - for enterprise performance management.

Here are some common use cases where analytics prove to be highly useful across various functions:

✓ **Marketing & Sales**: Analytics enables more accurate decision-making for marketing managers and enhances sales effectiveness. It helps in optimizing campaigns and refining sales strategies.

✓ **Operations and Supply Chain Management**: Analytics is applied in supplier selection, performance evaluation, predictive maintenance, location optimization, and inventory management.

✓ **Human Resources**: Analytics is used to improve talent management, with 84% of HR executives investing in it. Many companies plan to increase their analytics budgets over the next two years.

✓ **Customer Service**: By using data analytics and AI, businesses gain deeper insights into customer behavior, preferences, and satisfaction, beyond just tracking metrics.

✓ **Finance**: Analytics supports financial performance analysis, pricing strategy optimization, fraud reduction by identifying unusual patterns, cash flow forecasting, budget management, and revenue predictions.

Finally, communicating results to decision-makers is essential. After drawing conclusions from the analysis, the next step is to interpret and present the findings effectively. This involves using storytelling to convey insights to executives or leaders, helping them make informed decisions.

Data storytelling combines narratives and visualizations to present insights from data clearly. Visualization uses graphs, tables, maps, and other formats to make results easily understandable and

create a coherent story, usually delivered through presentations or reports. The right visualization can align understanding across diverse levels of expertise.

The storytelling should communicate a message grounded in the analysis's facts. When preparing a narrative, 2 key aspects must be considered: the **purpose of the analysis** and **the audience**. Understanding what the analysis aims and knowing the audience's expectations are essential. The story must align with the goal and be tailored to the audience to maintain their interest and focus.

5. CONCLUSIONS

It's clear that conducting analysis requires significant effort and preparation. Being an analyst is a responsibility that demands both extensive knowledge and experience. Effective analysts understand how things work and can bring clarity out of chaos. Therefore, it's essential to grasp the entire analytics process, understand what is needed for meaningful analysis, and determine the appropriate types and methods to apply.

Integrating data analytics into business operations has become essential for remaining competitive and achieving sustained success. Utilizing data analytics enables businesses to improve decision-making, streamline operations, enhance customer experiences, manage risks, and boost revenue growth. Therefore, investing in data analytics capabilities is crucial for any organization seeking to excel in today's data-driven market.

Given this, a strategic investment in analytics tools and employee training will empower businesses to harness the full potential of their data, driving informed decisions and fostering innovation.

Investing in appropriate analytical applications will empower employees to solve problems and uncover insights more swiftly. Implementing advanced analytics, including intuitive AI tools like predictive analytics, can help employees drive better decisions now and for the future.

This also necessitates investing in workforce development through internal training, third-party programs, and more.

REFERENCES

Amadebai, E. (2021, February 28). The 4 types of analytics explained (with examples). Analytics for Decisions. https://www.analyticsfordecisions.com/types-of-analytics/

Baumeier, H. (2021, October 5). Data literacy: Why is it needed? Camelot Management Consultants. https://www.camelot-mc.com/blog/data-literacy-why-is-it-needed-and-how-can-visualization-help/

Book downloads —. (n.d.). Storytelling with Data. Retrieved August 5, 2024, from https://www.storytellingwithdata.com/book/downloads

Data visualization: Definition, benefits, and examples. (2022, November 21). Coursera. https://www.coursera.org/articles/data-visualization

Haan, K. (2022, May 17). The best data analytics tools of 2024. Forbes Advisor; Forbes. https://www.forbes.com/advisor/business/software/best-data-analytics-tools/

Hassan, M. (2024a, March 25). Descriptive analytics - methods, tools and examples. Research Method. https://researchmethod.net/descriptive-analytics/

Hassan, M. (2024b, March 26). Diagnostic analytics - methods, tools and examples. Research Method. https://researchmethod.net/diagnostic-analytics/

Murguia, J. (2022, March 10). 5 ways to grow business value through analytics. Forbes. https://www.forbes.com/sites/tableau/2022/03/10/5-ways-to-grow-business-value-through-analytics/

Stevens, E. (2021, January 28). The 4 types of data analysis [ultimate guide]. CareerFoundry. https://careerfoundry.com/en/blog/data-analytics/different-types-of-data-analysis/

Velázquez, A. (2021, April 16). Data analysis: Definition, types and examples. QuestionPro. https://www.questionpro.com/blog/what-is-data-analysis/

Vivek, J. (2022, May 30). How is data analytics used in business? Zuci Systems; Zuci Systems Inc. https://www.zucisystems.com/blog/how-is-data-analytics-used-in-business/

(N.d.-a). Gartner.com. Retrieved August 5, 2024, from https://www.gartner.com/smarterwithgartner/a-data-and-analytics-leaders-guide-to-data-literacy