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Data Storytelling

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2024 Ebenezer Quansah

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Theses guidelines

The aim of the work is to characterize the aspects and principles of the concept of Data Storytelling. Appropriate visualization tools will be used in the work.

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- Basic concepts related to the processed issues.
- Concept of Data Storytelling.
- Data visualization.

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Dykes, B. (2020). *Effective data storytelling: How to drive change with data, narrative, and visuals.* John Wiley & Sons, Inc.

Knaflic, C. N. (2015). *Storytelling with data: A Data Visualization Guide for Business Professionals.* John Wiley & Sons, Inc.

Nguyen, V. T., Jung, K., & Gupta, V. (2021). Examining Data Visualization pitfalls in scientific publications. *Visual Computing for Industry, Biomedicine, and Art*, 4(1). https://doi.org/10.1186/s42492-021-00092-y.

Team, D. (2021). *Telling effective data stories with data, narrative, and visuals.* https://www.datacamp.com/blog/telling-effective-data-stories-with-data-narrative-and-visuals.

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Declaration

I declare:

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I thank Almighty God for His mercy, grace and guidance showered on me throughout my journey to this thesis.

I would like to express my sincere gratitude to my supervisor Simonova Stanislava for her valuable and helpful recommendation during planning stage and analysis of my research potentials for further discoveries. It wouldn't have been possible for this work if not her support.

I am grateful to my parents for their endless support and faith in me. It was they who gave me an opportunity to work on a research project.

I dedicated this thesis work to my sister Barbara Quansah for her selfless and loving heart, even though she is not here with me, yet she kept on checking and pushed me through this stage. I really appreciate what she has done for me.

Not forgotten Mr. and Mrs. Quansah for their support and guidance throughout my course.

ANNOTATION

The thesis titled "Data Storytelling" by Ebenezer Quansah aims to explore the concept of data storytelling and it's contrast with common presentation practices. The work will focus on the use of appropriate visualisation tools and the principles of data storytelling. It will also delve into the differences between data-driven presentations and data storytelling, assessing the benefits and drawbacks of each approach. The thesis will emphasise the importance of effective visuals and story structure in data storytelling, as well as the use of annotations to highlight relationships and trends in the data.

KEYWORDS

Data storytelling, Visualization, Story structure, Data

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1 INTRODUCTION

Data is a collective term encompassing facts, numbers, and other information used to guide decisions and provide an understanding of a variety of events. (Bellinger.APA, 2004), data is a raw fact that exists in any form which does not make a clear understanding. Data can be presented in several ways, including as numbers, text, audio, video, or other formats.

Data can be divided into two main classifications structured data and unstructured data. Structured data may be handled and analyzed using computer algorithms because it is arranged and saved fixedly, like a database or spreadsheet. Unstructured data, on the other hand, has no clear structure and can take many forms, including emails, social media postings, photos, and audio files.

A story is an account of events, whether real or imagined, that are told or written with a particular goal in mind. Usually, the purpose of a story is to entertain, enlighten, educate, inspire, or persuade the reader or listener. (McMicken, 2015) States that a Story is not just fiction, but rather a story impacts our factual way of reading and our intellectual impact on materials.

A good tale typically contains a defined storyline, characters, setting, and theme, as well as a beginning, middle, and finish. The characters are the people or things that move the story along, whereas the plot defines the events that happen in the story in order. The story's period and place of action are known as the setting, while its central message or idea is known as the theme.

The art of storytelling involves putting a story or a series of events into words, pictures, sounds, or other mediums. Humans have been using this kind of communication for thousands of years to spread knowledge, transmit cultural traditions, and amuse audiences. As Boje (1991) notes,

storytelling is how we make sense of the world. People are engaged in dynamic configurations and reconfigurations of the world's artefacts, words, concepts, spaces, former histories, strategies, and other kinds of symbols. Stories form an integral part of the practice as they unfold in the moment of becoming. A skilled storyteller may captivate an audience by utilizing a variety of methods, including voice, tone, pacing, and others, to provide an engaging and unforgettable experience. They might utilize storytelling to entertain their audience, impart a lesson, or express a message.

3 DATA VISUALIZATION USING STORYTELLING

Data storytelling has served as a “message carrier” for a long time in human history. Stories are a more natural and understandable form of a message when compared to raw data. The convergence of both storytelling and data science concepts seems like a natural next step in making data easier to understand and communicate. According to Knafilc (Knaflic 2015), data itself is difficult to understand, but it has a story that brings it to life and can be communicated much more effectively. People are naturally drawn to stories, and they help us make sense of the world by providing context and meaning. Using storytelling techniques in the presentation of data, information can be communicated more effectively, and people are more likely to understand and remember it.

Data storytelling transforms data into better formats that can support decision-making (Knaflic 2015). Presenting information in a way that is engaging and easy to understand can help people identify important events and insights and make informed decisions quicker. People presented with data using storytelling techniques are more likely to make the right decision than those who were presented with the same data in the raw format.

Data storytelling is a powerful tool for engaging people with data and helping them to understand complex information. It is the art of conveying meaningful insights from data in an engaging way that helps people to draw their own conclusions. Data storytelling combines storytelling techniques, such as narrative, with data visualization to help people understand the data, contextualize it, and draw their own conclusions. This combination of narrative and visualization helps to bring data to life and can be used to convey messages more effectively than either technique alone. In this thesis, I will explore the importance of data storytelling, the elements of effective data storytelling, and the role of data storytelling in decision-making.

The importance of data storytelling lies in its ability to make complex information easier to understand. Data can often be difficult to interpret, as it can be presented in multiple formats, with different levels of detail, and in different contexts. Data storytelling provides a way to make the data more accessible, as it provides a narrative for interpreting the data in a way that is both meaningful and engaging. It also helps to contextualize the data, providing a framework for making sense of it, and can be used to communicate the insights in a way that is more impactful than simply presenting the data alone.

Data storytelling is composed of several elements that work together to create an effective narrative. These include the data itself, the story, the visualization, and the audience. The data must be accurate and relevant to the story that is being told. The story should be engaging and should explain the data in a way that is easily understood by the audience. The visualization should be clear and should convey the insights of the data in a visually appealing way. Finally, the audience should be considered, and the story should be tailored to their level of understanding and interests.

Data storytelling can also be used to support decision-making. It can help to uncover patterns and trends in the data that may not be immediately obvious and can be used to communicate the implications of these insights to decision-makers. Data storytelling can also help to explain the complexities of the data in a way that is easier for decision-makers to comprehend. Data storytelling is an essential tool for helping decision-makers to make informed decisions and can be used to provide a clearer picture of the data and the potential outcomes of different decisions.

In conclusion, data storytelling is a powerful tool for engaging people with data and helping them to understand complex information. It combines narrative and visualization to bring data to life and to make it easier to interpret and draw meaningful insights. Data storytelling can be used to support decision-making by providing a clearer picture of the data and its implications

and can help to explain the complexities of the data in a way that is easier to understand. Data storytelling is an essential tool for anyone wanting to make sense of data and draw meaningful insights from it.

3.1 Basic principles of data storytelling

Data storytelling has become an important component in the realm of data analysis and visualization. It uses concrete and visual elements to narrate the story contained in raw data and lends context and meaning to derive insight. By understanding the basic principles of data storytelling, one can develop more effective ways of understanding and presenting data.

The goal of data storytelling is to create a narrative from data that is clear, meaningful, and actionable. To achieve this goal, the underlying data must first be explored, filtered, and prepared for analysis. Once the data is ready, data storytelling can be used to explore key concepts and communicate complex information in a concise and understandable way.

Data visualization plays a critical role in data storytelling. It is the visual representation of data using graphs, charts, maps, and other visual elements. (“Social Media Data Visualization - The Ultimate Guide”) Effective data visualization helps to simplify complex information, highlight patterns and trends, and facilitate understanding. Visualizations enable the audience to quickly grasp the key messages and insights, making the data storytelling presentation more engaging and persuasive. Well-designed visualizations also enhance the aesthetics and appeal of the narrative, capturing and retaining the audience's attention.

A good data story needs to be based on established facts from data that are accurate and reliable. The narrative should be able to identify patterns and trends and show relationships between variables. To make this story meaningful, it must include visuals and graphics that help the audience identify key takeaways.

Data storytelling utilizes several principles to bring the narrative to life. Firstly, context should be provided to help the audience understand what is being discussed and determine why it is important. Secondly, concepts should be clearly defined, and associations should be made to help the audience follow the story. Thirdly, careful data selection and data analysis should be carried out to find the most relevant and meaningful data points that will shape the data story. Finally, the narrative should be impactful and easy to understand.

The success of a data-storytelling project depends heavily on how well the data is processed, structured, communicated, and visualized. By understanding the basic principles of data storytelling, one can craft a data story that is meaningful, accurate, and actionable. With this knowledge, one can create stories from data that can lead to better decision-making and better data-based solutions. (See Figure 1.1)

An effective data story incorporates several key elements to engage the audience and deliver a compelling narrative:

1. Context: Set the stage by providing background information and context to establish why the data story is important and relevant. Clearly define the problem, question, or objective that the data story seeks to address.
2. Characters: Introduce the main characters or stakeholders involved in the data story. This could include individuals, organizations, or communities impacted by the data insights. Humanizing the data by connecting it to real people helps create empathy and connection.
3. Conflict or Challenge: Present the obstacles, challenges, or conflicts that the data story aims to address. Clearly articulate the issues or opportunities that the data analysis and visualization will help resolve or explore.

4. Data and Insights: Present the analyzed data and visualizations that support the narrative. Highlight key findings, trends, patterns, or correlations in a clear and concise manner. Use visuals that are relevant, accurate, and easy to interpret.
5. Narrative Flow: Structure the data story in a logical and coherent sequence. Create a narrative flow that guides the audience through the story, building anticipation and maintaining engagement. Use storytelling techniques such as suspense, surprise, or emotional appeal to captivate the audience.
6. Call to Action: Conclude the data story with a call to action or a desired outcome. Inspire the audience to act, make decisions, or change their perspective based on the presented insights. Provide clear and actionable next steps to encourage engagement and follow-through.

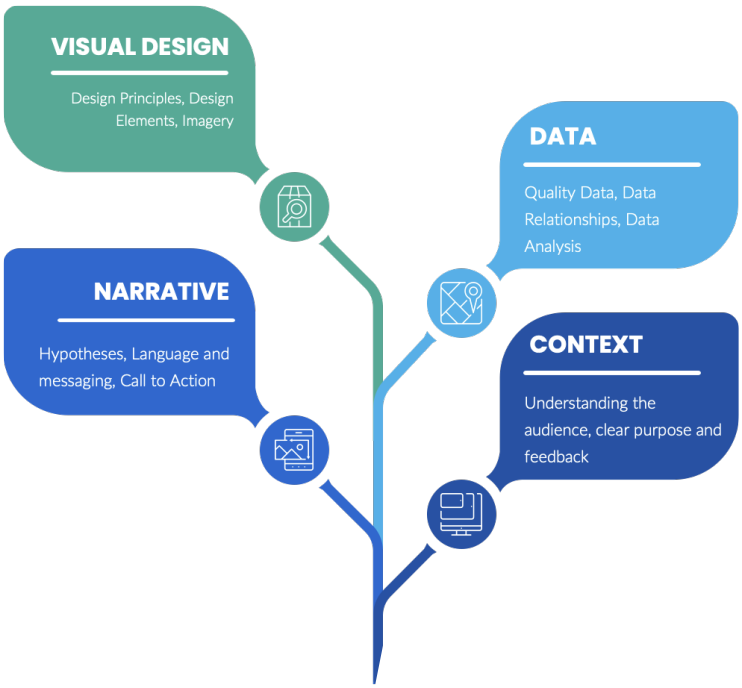

Figure 1.1

We would also explore the narrative arc structure that guides the flow of the data story. It creates a sense of progression, tension, and resolution (See Figure 1.2). The narrative arc simply consists of the following components:

1. Exposition: Introduce the context, characters, and setting of the data story. Establish the problem or question that will be addressed.
2. Rising Action: Build tension and interest by presenting data, analysis, and visualizations. Unveil the insights and patterns that drive the narrative forward.
3. Climax: Reach the peak of the narrative by presenting the most impactful or surprising insights. This is the turning point where the audience's understanding or perception is significantly affected.
4. Falling Action: Provide additional evidence, details, or supporting data to reinforce the main insights. Connect the analysis to the initial problem or question, demonstrating the relevance and importance of the findings.
5. Resolution: Conclude the data story by summarizing the key takeaways and reinforcing the call to action. Leave the audience with a clear understanding of the implications and potential outcomes of the presented insights.

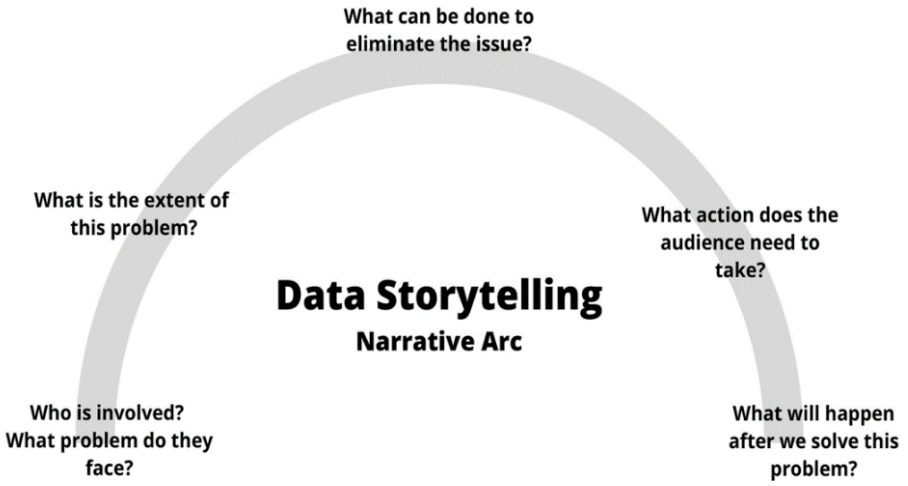

Figure 1.2 Data Storytelling Narrative Arc

According to DYKES, whenever you create a data visualization, it will work for at least one person—you. However, there's no guarantee it will communicate equally well to others. If the cognitive load is too burdensome, your audience may mentally check out and leave with nothing—no insights and no inspiration to do anything. Frequently, poor visual communication occurs when data charts from the exploratory analysis are used—without modification—for explanatory purposes. A raw comparison is going to be more difficult to digest and interpret than one that has been designed to highlight a specific difference or similarity. The ability to pivot from exploratory to explanatory in the analysis process is what separates effective data storytellers from everyone else who is attempting to share data. To help you navigate this crucial transition and construct effective visual scenes for your story points, we will focus on seven essential principles for better visual storytelling. (See Figure 1.3)

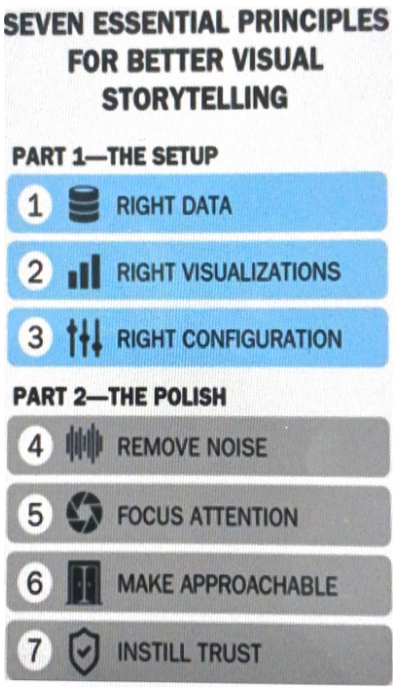

Figure 1.3 The seven key principles of visual storytelling

3.1.1 Principle #1: Visualize the Right Data

As an essential component among the triad of data storytelling's core elements, data constitutes the bedrock upon which every data narrative rests. Devoid of robust data, the quest for consequential revelations becomes arduous. Upon the revelation of an insight, the presumption often arises that the data at hand suffices for the narrative. Consequently, one might repurpose the initial chart forged during exploratory analysis, neglecting to ponder whether an alternative perspective on the data could potentially imbue the audience with an even more vibrant depiction.

The rise of data in the modern age has provided new opportunities for businesses, professionals, and citizens to make informed decisions. Visualizing the right data allows for an understanding and intuitive display of the meaning behind data, making it a powerful tool for conveying complex information. By visually representing collections of data in an easy-to-understand manner, users are able to better make decisions that will address their individual objectives. Moreover, the process of visualizing data forces us to reflect on the relationships between different components, helping us identify patterns and trends.

Visualization can take many forms, each best suited to a particular task. Graphs are often used to represent statistical relationships between different sets of numerical data, such as measuring changes in population growth over time. Scatter plots, for example, can be used to visually compare two variables, to identify correlations and outliers. These visualizations can be adapted to fit different scales and contexts. Maps are another popular choice for visualizing data, provided the user has a visual understanding of geographic locations and the ability to view the relationship between data points. Finally, timelines can be used to show the evolution of a particular data set or trend over a period. Each method of visualizing data is useful in a different context and should be carefully chosen to ensure it accurately relays the message being portrayed.

Visualizing data is becoming increasingly important in the modern age, with advancements in hardware and software making it an essential tool for conveying complex information to users. With the right data visualizations, users can gain new perspectives, which can be used to improve decision-making. From providing an easier way to detect outliers and trends in data sets to layering multiple dimensions of information, the possibilities and potential for data visualization are unlimited. By taking the time to represent the right data in the right way, we can create useful visualizations that convey meaning, information, and insights. Here's an example of visualizing the right data using a hypothetical scenario:

Scenario: Here is a case study analysis of the number of students in several Czech universities in 2014. (Vladislav Čadil and Miroslav Kostić in 2014) (See Figure 1.4)

1. Data Selection: Select the appropriate data that directly relates to the story's focus. In this case, you'll need data on the number of students in this university that year.
2. Visualization Type: Choose a visualization type that best presents the data. A bar chart is a suitable choice for showcasing trends over time.
3. Configuration: Configure the visualization with accurate labelling, scaling, and appropriate units. For instance, label the x-axis with the number and the y-axis with the schools.

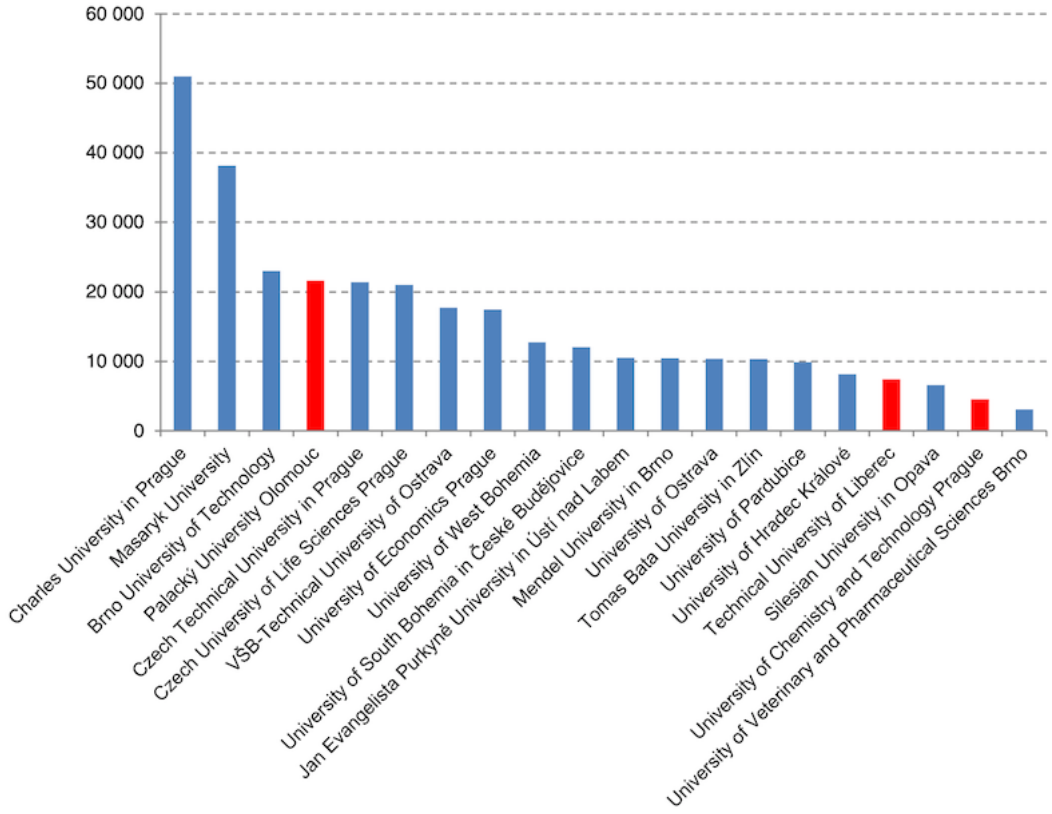

Figure 1.4 A Bar Chart Showing the Annual Students Intake by Czech Universities.

3.1.2 Principle #2: Choose the Right Visualizations

Once equipped with the appropriate data, you're poised to select a suitable data visualization method for showcasing your revelations. Yet, amidst the vast array of options – numbering in the hundreds – the task of choosing the optimal one can pose a dilemma. Often, it proves advantageous to commence by delving into the distinct classifications of data visualizations, pinpointing the category that aligns with your specific scenario. Once the fitting chart archetype is identified, the subsequent step involves pinpointing the precise chart variant that most effectively conveys your insight.

Current data visualization tools available in the market provide users with a slew of options to explore and present their data in more meaningful forms. Thus, it is necessary to determine the

correct visualization tool to accurately convey data in the preferred format. This paper examines the factors to consider when selecting a data visualization tool, such as cost, compatibility, ease of use, and user-friendliness. In addition, this paper reviews several of the best and most used visualization tools, including Tableau, Microsoft Excel, Microsoft Power BI, D3.js, Chart.js, High charts, and Fusion Charts.

By considering the characteristics, features, and overall performance of each of these tools, we can evaluate their effectiveness in providing quality and meaningful visualizations. Finally, this paper provides essential recommendations on selecting the best visualization tool for any data project, based on the user's needs. Understanding and choosing the best data visualization tool will help improve the impact of visualizations, ensuring they remain effective in conveying meaningful and captivating data in the preferred format.

Choosing the right visualization involves considering the data's nature and the insights you want to convey. Here are seven categories of visualizations, each suited for specific types of data and analytical objectives:

1. Comparison: Use visualizations that allow viewers to compare data points or categories. Examples include bar charts, column charts, and scatter plots.
2. Distribution: When showcasing how data is distributed, histograms, box plots, and density plots are valuable choices.
3. Composition: For illustrating parts of a whole, use pie charts, donut charts, and stacked bar/column charts.
4. Relationship: Visualize relationships between variables using scatter plots, line charts, and bubble charts.
5. Time Series: When tracking data over time, line charts, area charts, and heatmaps are effective tools.

6. Geographic: When displaying geographical data, maps, choropleth maps, and bubble maps provide geographical insights.
7. Hierarchical: When depicting hierarchical relationships or structures, tree maps, sunburst charts, and dendrogram charts are suitable.

Certainly, here are some major chart types that are particularly relevant for business professionals to effectively present data and insights:

1. **Bar Chart:** Bar charts are widely used to compare values across different categories. They are excellent for showing discrete data, such as sales figures by product or revenue by quarter. (See figure 1.5)

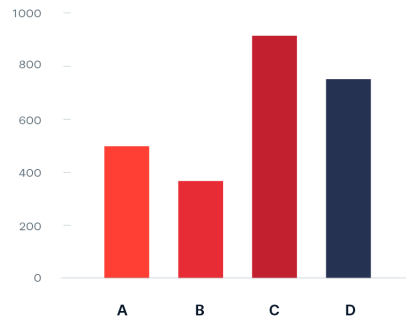

Figure 1.5 Bar Graph

2. **Line Chart:** Line charts are valuable for tracking trends over time, making them ideal for showing performance metrics, stock prices, or changes in key indicators. (See figure 1.6)

Figure 1.6 Line Chart

3. **Pie Chart:** Pie charts are useful for illustrating parts of a whole. They work well when displaying the composition of market share, budget allocation, or customer segments. (See figure 1.7)

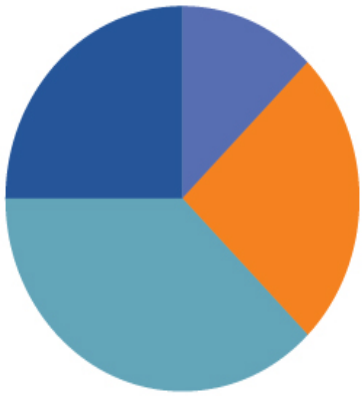

Figure 1.7 Pie Chart

4. **Scatter Plot:** Scatter plots help visualize relationships between two variables. Business professionals can use them to show correlations between advertising spending and sales, for example. (See figure 1.8)

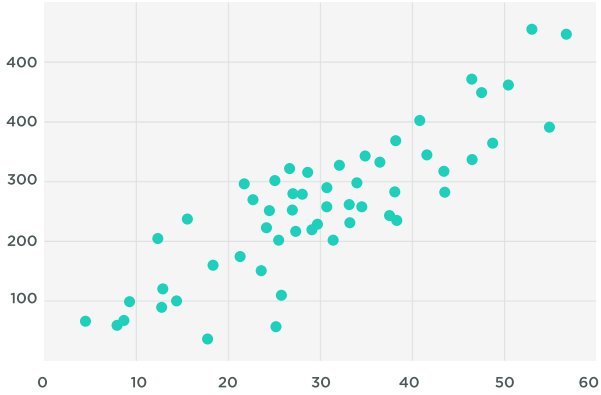

Figure 1.8 Scatter Plot

5. **Area Chart:** Like line charts, area charts highlight trends over time while emphasizing the area beneath the line. They're great for showcasing cumulative data, like total revenue. (See figure 1.9)

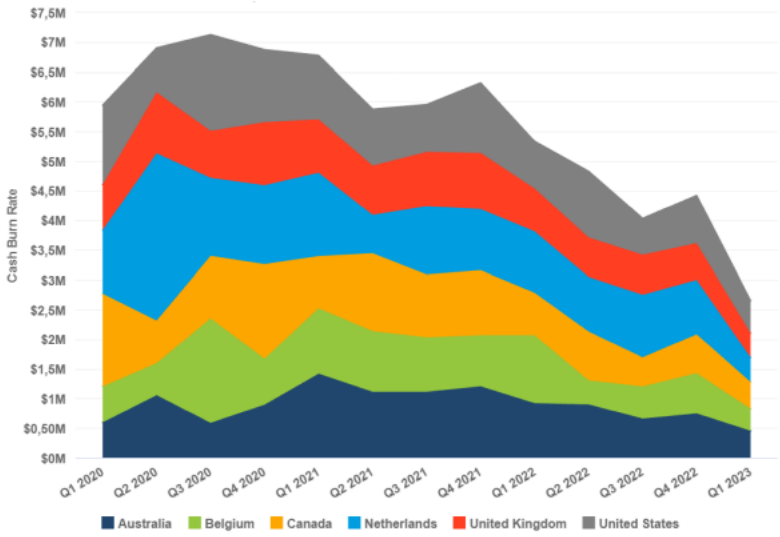

Figure 1.9 Area Chart

6. **Histogram:** Histograms depict data distributions and frequency. They're suitable for visualizing employee ages, customer purchase amounts, or survey responses. (See figure 1.10)

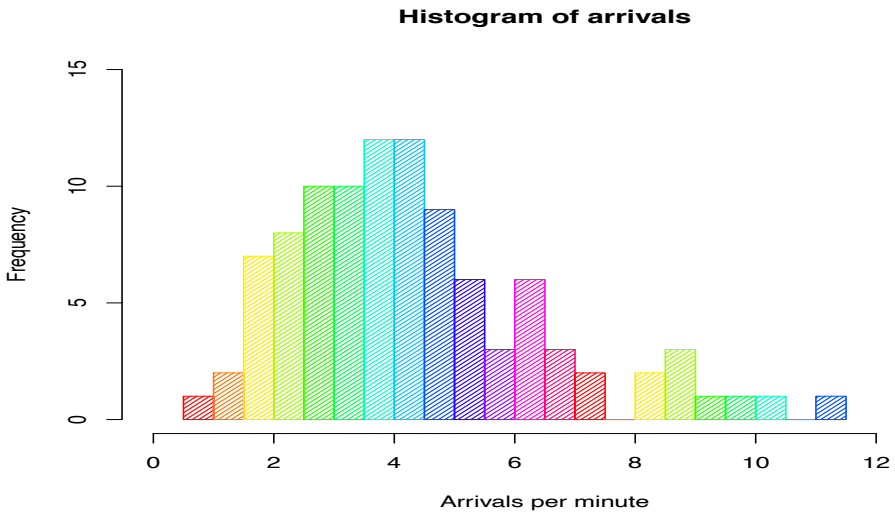

Figure 1.10 Histogram

7. **Stacked Bar Chart:** Stacked bar charts illustrate the distribution of a whole category while breaking it down into subcategories. They're used to display sales revenue by region with further breakdown by product. (See figure 1.11)

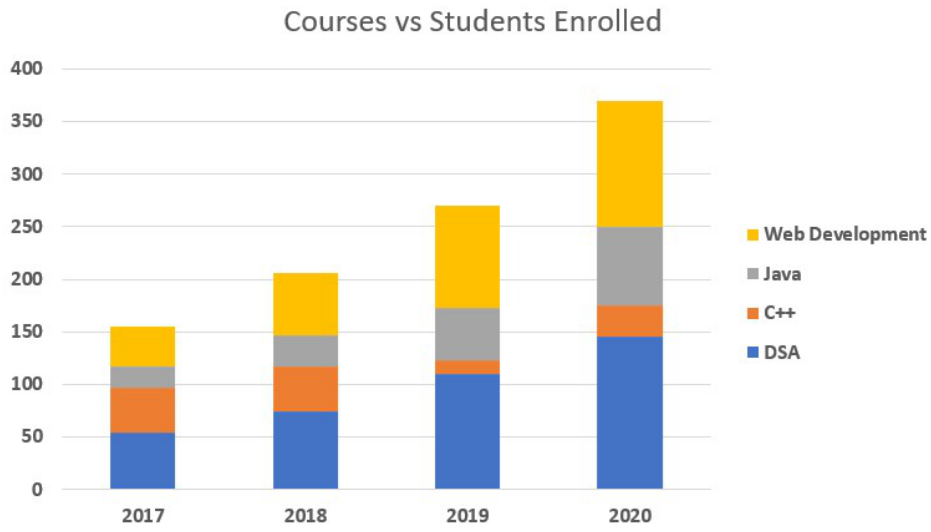

Figure 1.11 Stacked Bar Chart

8. **Tree map:** Tree maps display hierarchical data in a nested, rectangular format. Business professionals can use them for visualizing organizational structures or portfolio asset allocation. (See figure 1.12)

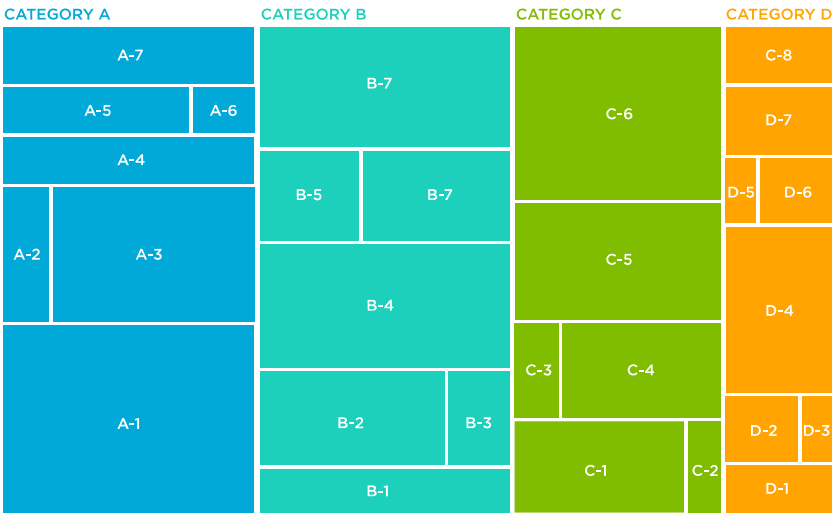

Figure 1.12 Tree Map

9. **Waterfall Chart:** Waterfall charts show how an initial value is affected by intermediate positive and negative changes. They're helpful for illustrating profit and loss breakdowns. (See figure 1.13)

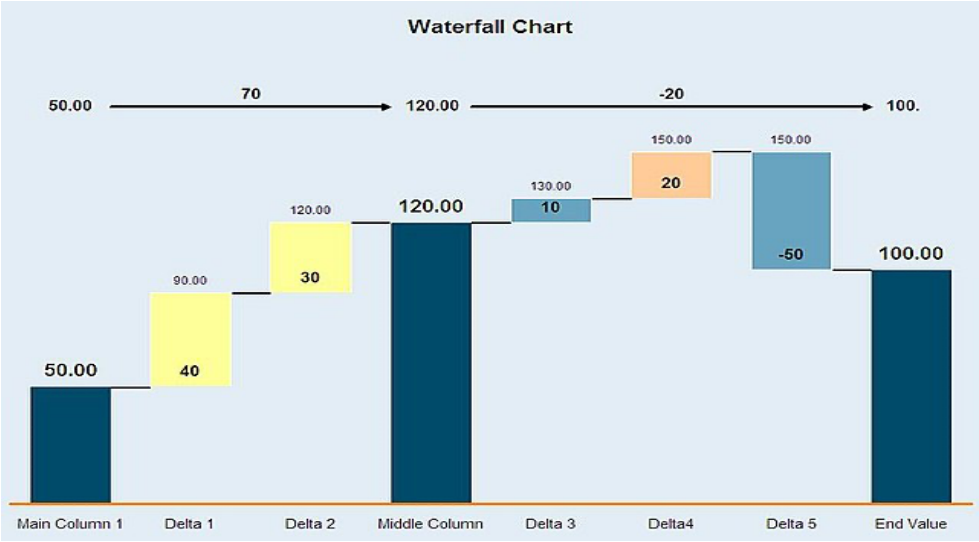

Figure 1.13 Waterfall Chart

10. **Gantt Chart:** Gantt charts are vital for project management, displaying tasks along a timeline to visualize project schedules, dependencies, and progress. (see figure 1.14)

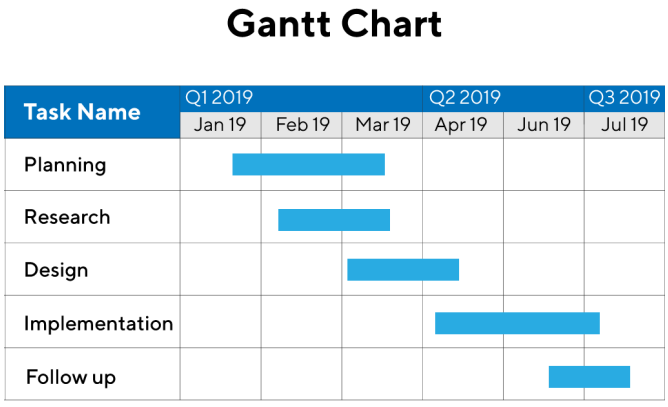

Figure 1.14 Gantt Chart

11. **Radar Chart:** Radar charts are suitable for comparing multiple dimensions within a single dataset. They're useful for evaluating product performance across various criteria. (See figure 1.15)

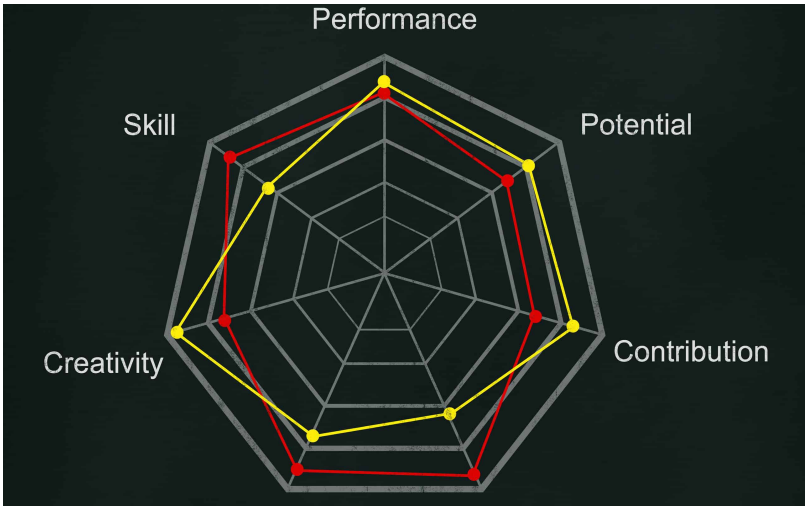

Figure 1.15 Radar Chart

12. **Heatmap:** Heatmaps use color to represent data density and patterns. They're often used in business for visualizing website traffic, customer interactions, or market trends. (See figure 1.16)

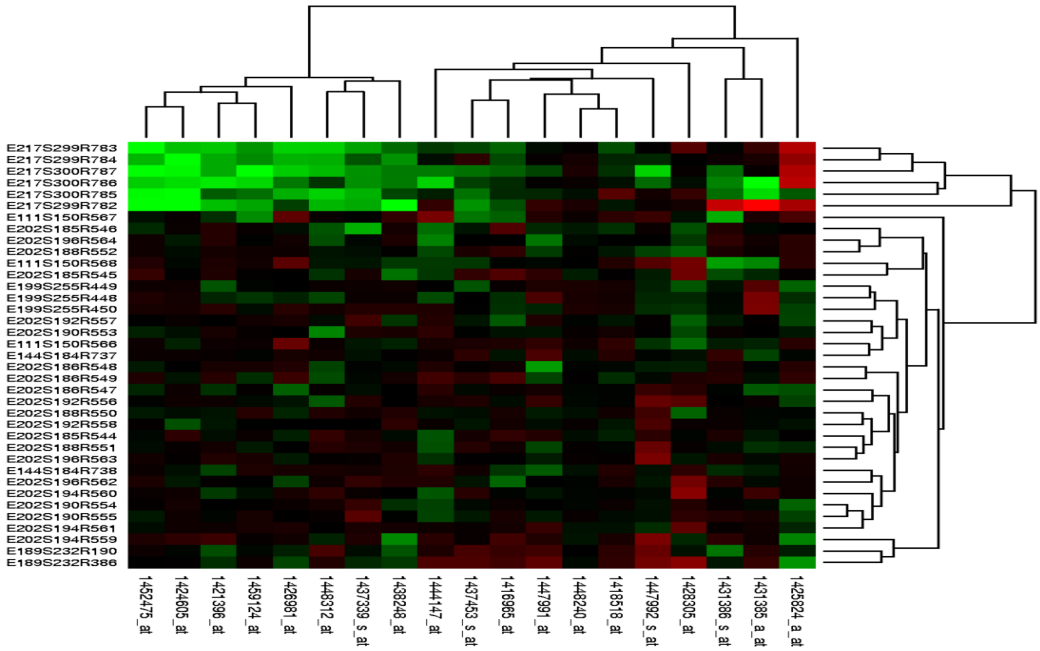

Figure 1.16 Heatmap

3.1.3 Principle #3: Calibrate the Right configuration.

In the era of digital transformation, data storytelling has become one of the most important methods of data analysis. It allows companies to move from simplistic data points to a more meaningful and actionable form of insight to achieve better accuracy and performance. However, effective data storytelling requires the correct configuration of the data in order to get the most out of its potential. To make the most of data storytelling, it is important to ensure the right configuration is being used and the impact it has on the data story.

The overall configuration of the data story should be guided by the goals of data analysis and the desired outcomes. It is important to decide what kind of information should be stored and how the data needs to be organized to optimize the results and make the most effective use of the datasets. This includes setting up the right filters, aggregations, and transformations as well as determining the right level of detail to ensure the right story is produced.

Furthermore, the configuration of the data should also consider the user's point of view. Data storytellers need to think about the audience that the data story is crafted for, as they will be the ones who view the results and act on the insights presented. Their feedback should be taken into consideration when deciding on how to configure the data for a successful data story.

When it comes to data quality and accuracy, it is also necessary to ensure that the data is up-to-date and free from errors. Advances in technologies such as machine learning and artificial intelligence have enabled the integration of data relationship checks to help identify and separate any inconsistencies in the data. This step can be taken to ensure that data storytellers have access to reliable data that is free from erroneous values.

From my point of view, it is important to ensure that the right configuration is being used in data story creation to get the most out of its potential. Doing so requires data storytellers to consider their goals, the desired insights, the audience, and data quality before crafting the perfect data story. By taking the necessary steps to calibrate the right configuration of the data for a data story, organizations can ensure that they are empowered with the right insights to reach the desired outcome.

The visuals in a data story can be extremely powerful for communicating messages effectively if used properly. Visuals can provide an anxiety-inducing layer of complexity to the story, or they can be used to simplify and communicate the analysis for readers to gain a better understanding of the data. As such, calibrating the visuals to your message in a data story is a crucial step in the communication process. This paper will explore the methods of using visuals to reinforce the message being presented, with examples to school admissions.

It is important to ensure that the visuals align with the message and that it is relevant to the target audience. For example, when writing a data story for school admissions, the visuals should be used to show how each candidate's data contributes to the story. This could be done by showing the overall average, median, or any other comparative measure that will help put the data in context. Additionally, visualizing the distribution of a variable is another helpful tool to clearly explain the topic being presented. This could be done using a bar chart or a box plot, which both provide easy-to-understand representations of a variable's data.

When constructing a data story, it is important to bear in mind the relationship between visuals and message and to choose the visuals that will best illustrate the message. In the case of a data story for school admissions, this could be done by choosing visualizations that show the most salient information. For example, a histogram or a line chart could be used to illustrate the distribution of a variable. This could then be used to compare the different admission criteria or performance on examinations, giving insight into how a candidate might fare.

Also, it is essential to consider the layout of the visuals and how they will interact with the text of the story. The visuals should provide additional information that supports the narrative while being balanced with corresponding text to provide further context. Adopting a consistent colour scheme and alignment for the visuals are also important in creating a polished and professional look.

Finally, the visuals should clarify and present data in a simple and understandable manner. This is especially important in the case of school admissions, where the visuals should clearly show the key criteria for admission. It is better to simplify the visual instead of cluttering it with too much detail that might detract from its purpose. Additionally, the use of annotations can be beneficial for highlighting relationships and trends in the data.

3.2 Comparison between common presentation and data-storytelling

Data-driven presentations and data storytelling are two interactive and increasingly popular forms of information delivery for businesses, organizations, and individuals. These presentations rely on the availability of data—structured and unstructured—as well as the skill and expertise of the presenter in selecting and communicating the information. The rise of digital technology and analytics has enabled a new method of presenting data, long known as data-story telling. Presentations have long been used to communicate ideas, data, and stories in various contexts, but data-story telling is something new and unique. This thesis aims to explore the juxtaposition of common presentation practices versus data-story telling, assessing the differences between the two approaches while examining the benefits and drawbacks of each.

3.3 Common Presentation Practices

The traditional presentation has remained largely unchanged in recent years. Presenters introduce themselves and the topic of their presentation which is followed by the key points they wish to discuss. This is achieved using PowerPoint slides, images, and various other visual

elements. Visual elements such as text, graphs, and diagrams are often used to convey the desired message. These presentations most often seek to inform or persuade the audience; however, as the focus is usually on verbal communication, the presentation can become static or boring.

Presentations are an excellent way of conveying information, and through careful planning, a presentation can effectively and effectively communicate information in an organized and concise manner. There are many different types of presentation techniques, ranging from oral presentations, to live demonstrations, to multimedia presentations. For the purposes of this paper, we are going to focus on the most common ways of presenting information.

The most common presentation practices involve developing a strong introduction, speaking clearly and confidently, using visual aids, and incorporating proper body language. An effective introduction should grab the audience's attention and give them an overview of the presentation. Speaking confidently and clearly is key to a successful presentation, and using visual aids such as slides and graphs can help break up a presentation and make it easier to comprehend. Additionally, it is important to use appropriate body language, such as proper eye contact and posture, to engage with the audience and maintain their attention.

For example, the Czech Republic has adopted a range of approaches to presentations in the classroom. One of the most common ones is the use of PowerPoint slides as a platform to present course material, such as graphs, charts, and diagrams. This type of presentation allows the teacher to effectively illustrate the material and make complex topics easier to comprehend. Furthermore, it encourages active student engagement and participation, where students can ask questions and be prompted to discuss the content they have just learned. Another popular presentation practice in the Czech Republic is the use of video coding. This technology can offer rich multimedia experiences for students, which can provide an exciting and stimulating

way to learn. Videos can be used to demonstrate concepts, as well as to present cases and theories.

4 DATA-STORY

4.1 Components of Data Storytelling

Data-story telling is an innovative and interactive approach to presenting data. It is based on the idea of transforming data into stories, allowing the presenter to explain the data in a more engaging and intuitive way. The presenter typically uses a combination of visuals, such as graphs, charts, photographs, and videos, to illustrate the data in an interesting and helpful way. As the focus shifts from verbal communication to the data, the presentation becomes far more engaging and dynamic. For example, data stories made up of multiple data points and sources can be used to provide insight into a particular situation or trend. Additionally, data-story telling also allows the presenter to take an analytical approach to their presentation, allowing them to explore and interpret the data to identify potential opportunities or challenges.

With this, we would dive into the three components of data storytelling, which are narrative, data, and visuals. (See figure 2.1)

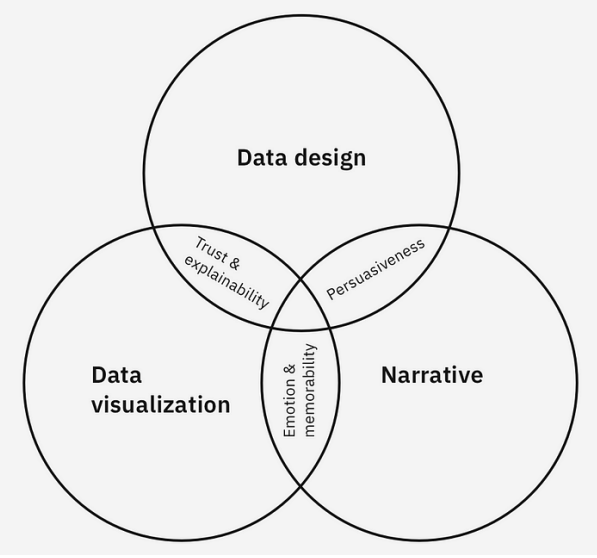

Figure 2.1 The Three Components of Storytelling

4.2 Narrative structure

The narrative structure of data storytelling involves crafting a compelling and coherent story that guides your audience through the data, insights, and conclusions. At its core, data storytelling is a form of visual communication. For this reason, it is crucial for those engaging in data storytelling to be able to visualize the data points in order to effectively express their message. By utilizing a narrative structure, data storytellers are able to take a set of data points and create a cohesive narrative by combining insights, analysis, and interpretation. As a result, data storytellers can present information with clarity and enthusiasm, helping to engage the audience in the story.

According to research done by Data Camp, "Data stories stand to benefit from the age-old narrative structure. A data story begins by setting the scene of the current situation, proceeds by providing insights that lead up to the central insight and ends with relevant recommendations." (see figure 2.2)

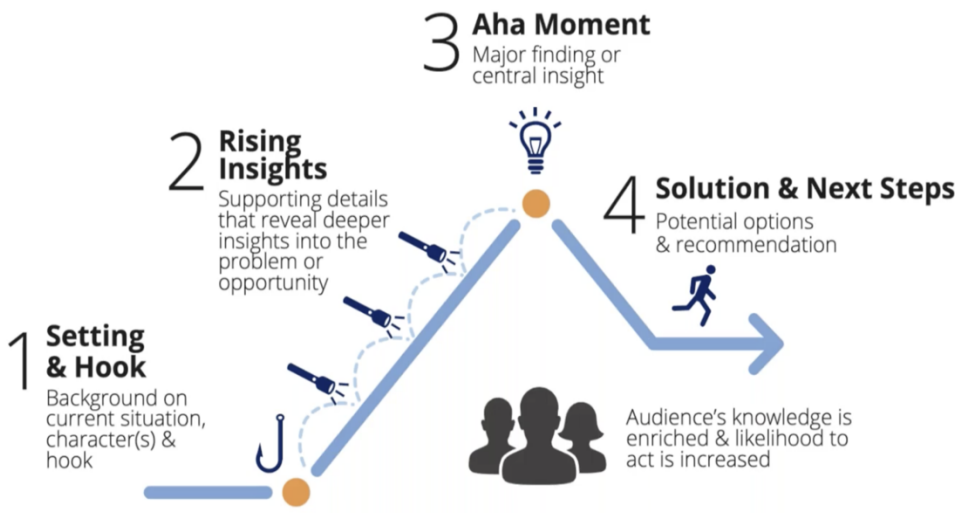

Figure 2.2 The Narrative Structure Process of Data Story

4.2.1 Data

The process of data storytelling begins by analyzing data and drawing meaningful insights. This includes the use of basic data analysis tools, such as identifying trends and patterns in the data, recognizing relationships between the data and other datasets, and exploring the implications of the data. After understanding the data and its implications, the data should be presented in a way that conveys both the data and its implications. This can be done using visualizations, such as charts and graphs, as well as through narrative in the form of stories. Using these techniques, data storytelling allows for the effective communication of complex data and its implications to a variety of audiences, thereby allowing decision-makers to make informed decisions based on the data.

4.2.2 Visuals

Visuals are essential to data story telling because they make complex data more easily understood and more visually appealing. A single image or chart can communicate an entire argument, drastically saving time for the storyteller. Visuals can also provide context to the data being presented, which can help audiences visualize how the data connects to the overall story. In addition, visuals can help viewers identify patterns and outliers in the data more easily, allowing them to grasp the story quickly and fully.

There are many types of visuals that can be used in data storytelling, and each one has its own purpose and value. Charts and graphs are the most common visuals used to convey data, and they can provide a quick overview of large data sets. Maps are used to display geographic information, while diagrams present more complex relationships between parts of a system. Infographics can be used to visually explain complex topics, and photographs can help evoke emotion and provide context.

To maximize the effectiveness of visuals in data storytelling, it is important to choose visuals that are appropriate for the data being presented. Properly picked visuals can help viewers engage with the story, while poorly chosen visuals can be confusing and detract from the overall message. Choosing visuals to use in data storytelling requires a keen visual eye and data expertise.

4.2.3 Comparison

When comparing common presentation practices to data-story telling, several key differences can be observed. As noted previously, traditional presentations tend to focus heavily on verbal communication; meanwhile, data-story telling relies entirely on the data and visuals to convey the desired message. In terms of engagement, common presentation practices tend to be rather static, whereas data-story telling provides much more interactivity and insight. Furthermore, data-story telling is far more analytical in nature, allowing the presenter to explore, interpret, and analyze the data to identify potential opportunities or challenges.

To finish off, data-story telling is an effective and engaging approach to presenting data. While common presentation practices rely heavily on verbal communication, data-story telling uses a combination of visuals and data to convey the desired message. Additionally, data-story telling is much more engaging and allows the presenter to take a more analytical approach. Ultimately, data-story telling provides a much more dynamic way of presenting data and is becoming increasingly popular due to its ability to provide greater insights and knowledge.

4.3 How to prepare data for data storytelling

Good data storytelling means analyzing all the raw data you've gathered to confirm a hypothesis and, hopefully, the determined change you'd like to see come from introducing your data story. ("What is Data Storytelling and Data Storytelling Examples | Microsoft ...") Data preparation is an essential step in the storytelling process, providing the necessary data and

insight for compelling stories. Without proper data preparation, stories can lack a clear purpose, have inaccurate information, be biased, or lack focus. Data preparation begins with data collection, where raw data is gathered and organized, and the data needs to be properly filtered and prepared for analysis and visualization. This is an important step for data-driven storytelling because data are often noisy, inconsistent, incomplete, or difficult to interpret for the layperson.

Once data preparation is complete, the data can then be used to analyze patterns, identify trends, and uncover meaningful insights into the story being told. Data exploration techniques such as filtering, clustering, and statistical analysis can be used to segment data, provide context to the story, and reveal hidden relationships. This knowledge can then be used to frame the story, develop themes, find connections between data, and present the information in a visually appealing and succinct way.

In addition to data exploration and visualization, the storytelling process also involves the building of a narrative to draw the audience's attention and imagine storylines around the data. Telling a good story requires understanding the audience, crafting compelling visuals, and creating engaging stories with verified facts. The data always needs to be the core of the story, and the narrative should be constructed with the data in mind.

Data preparation is an essential part of storytelling, taking raw data and transforming it into knowledge and insights to inform compelling stories. By collecting relevant data, properly filtering it, exploring it and crafting a narrative with quality visuals, stories with tangible impact can be built and shared.

Upon preparing data for storytelling, we need to consider these:

1. Think about your theory. What do you want to prove or disprove? What do you think the data will tell you?

2. Collect data. Collate the data you'll need to develop your story.
3. Define the purpose of your story. Using the data you gathered, you should be able to write what the goal of your story is in a single sentence.
4. Think about what you want to say. Outline everything from the intro to the conclusion.
5. Ask questions. Were you right or wrong in your hypothesis? How do these answers shape the narrative of your data story?
6. Create a goal for your audience. What actions would you like them to take after reading your story?

4.4 Advantages of Data Storytelling

Data storytelling is simplified so that your audience can engage with your content and make critical decisions quicker and more confidently. ("What is Data Storytelling and Data Storytelling Examples | Microsoft ...") These are some of the advantages.

- Adding value to your data and insights.
- "Interpreting complex information and highlighting essential key points for the audience." ("What is Data Storytelling and Data Storytelling Examples | Microsoft ...")
- Providing a human touch to your data.
- Offering value to your audience and industry.
- Building credibility as an industry and topic thought leader.

4.5 The disadvantage of data storytelling.

- Digital storytelling takes time to build an audience.
- There is a cost to consider with digital storytelling.
- Digital storytelling can be challenging to manage.
- People can take a different meaning away from your story.
- It can be challenging to attribute results.

4.6 Basic structures of data storytelling.

After you've conducted an analysis and found valuable insight, the next challenge is to determine how you're going to present your findings in a meaningful way to your intended audience. There are three findings of the narrative approach of the structures data storytelling.(see figure 2.3,2.4 and 2.5)

1. Aristotle Strategy Structure

Aristotle's strategy structure, also known as the "Three-Act Structure," is a storytelling framework derived from Aristotle's principles of drama. It's often used to create engaging narratives, including data storytelling. Here's how you can apply Aristotle's Three-Act Structure to your data storytelling:

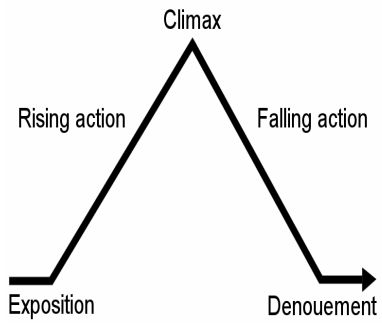

Figure 2.3 Aristotle Strategy Structure Model

- Exposition:
  - Introduce the context, setting, and characters (if applicable) of your data story.
  - Clearly state the problem, question, or topic your data will address.
- Inciting Incident:
  - Present the initial data that sparks the story's conflict or question.
  - Create intrigue by highlighting something interesting or unexpected in the data.
- Rising Action:
  - Gradually build tension by introducing more data and insights.

- Begin exploring patterns, trends, and relationships within the data.
- Provide context and background information to deepen understanding.

- Climax:
  - Reach the highest point of tension and excitement in your data story.
  - Unveil the key insight or revelation drawn from the data.
  - Present the most impactful visualization or data point that supports your message.
- Falling Action:
  - Further, analyze the data to explain the significance of the key insight.
  - Provide additional evidence and context to reinforce the insight.
  - Clarify any complexities or potential counterarguments.
- Denouement:
  - Summarize the insights and conclusions derived from the data.
  - Explain the implications of the key insight for your audience.
  - Reflect on how the data answers the initial question or addresses the problem.

2. Freytag's Pyramid

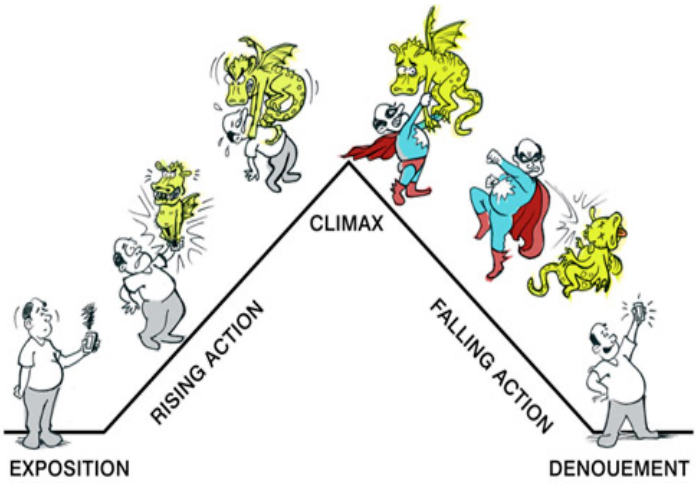

Figure 2.4 Freytag's Pyramid

3. Campbell's Hero's Journey

Figure 2.5 Campbell's Hero's Journey

4.7 Necessary areas to focus on relating to Data Storytelling.

Data storytelling is becoming increasingly important in today's digital landscape as it has the power to capture an audience's attention while showcasing complex topics and data points in an engaging and understandable way. It's essential for organizations that specialize in data analysis to focus their efforts and attention on proper data storytelling. Doing so will help them develop powerful visualizations that clearly communicate their message and bring the data to life. This thesis seeks to explore the necessary focus areas of data storytelling, including topics such as visualization, story structure, tool selection, and data literacy.

The primary purpose of data storytelling is to simplify complex topics in easy-to-understand terms and effectively illuminate a particular data set. Visualization is a critical area of focus when it comes to data storytelling, as it's what allows the data to come alive. The visualization techniques used by data analysts should be chosen carefully, as certain approaches may work

better for certain types of data than others. For example, pie charts may be ideal for displaying percentages, while bar graphs may be better suited for showing time series information. When appropriate, 3-D visualization can be used to create a more immersive experience.

While visuals are critical to effective data storytelling, so too is story structure. Analysts must consider not only the data points they want to communicate but also the way they should be presented to maintain the audiences' attention. Start with a captivating introduction and structure the story in a way that keeps the reader curious right to the end. Additionally, the story should revolve around a central thesis and have a defining narrative arc with a tangible ending.

The last two areas of focus for data storytelling revolve around tool selection and data literacy. It’s important for analysts to be familiar with the appropriate data storytelling tools, such as Tableau, Power BI, and D3.js, to help them create compelling visualizations that accurately communicate their message.

Additionally, to properly create data stories, analysts must have a high level of data literacy. Analysts must understand the data and be able to recognize patterns and anomalies in the data set. They must also be familiar with the implications of those patterns and anomalies and be able to formulate conclusions from the data that are relevant to their audience.

In conclusion, data storytelling is essential for organizations that specialize in data analysis. It's important that analysts focus their efforts on proper data storytelling and tailor their approach accordingly. This requires an understanding of which visualization techniques are appropriate for types of data, as well as an understanding of story structure, tool selection, and data literacy. By focusing their efforts in these areas, analysts can create powerful visualizations that bring the data to life and communicate their message effectively.

5 CREATION OF A SPECIFIC DATA STORYTELLING

5.1 Defining the assignment purpose

This chapter outlines the methodology employed to investigate the experiences of international students in the Czech Republic and after, present the results obtained from the analysis of the questionnaires administered to the student participants. The data analysis provides insight into the responses gathered, contributing to the fulfillment of the research objectives.

5.2 Demographic Characteristics of Participants

The participants for this questionnaire were not only focused on international students' experience but also the experience the local students encounter with internationals. In this section I will present the both the key findings I had from internationals and the local Czech students.

I would provide demographic of student's gender of respondents and their relevant universities.

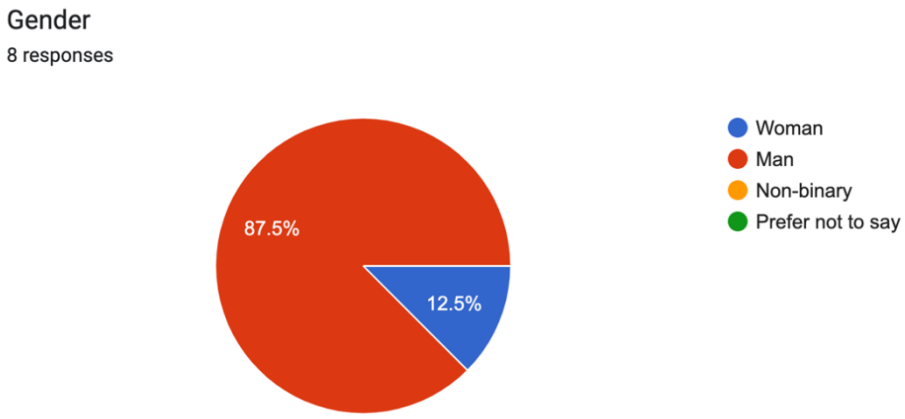

Figure 3.1 Local Students Response Chart based on Gender

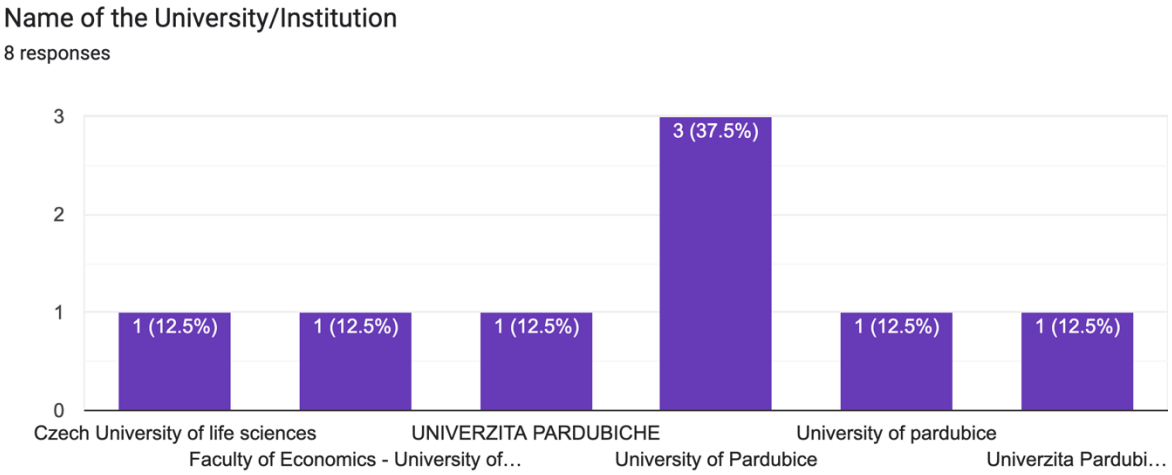

Figure 3.2 Local Students Response Chart based on Institution

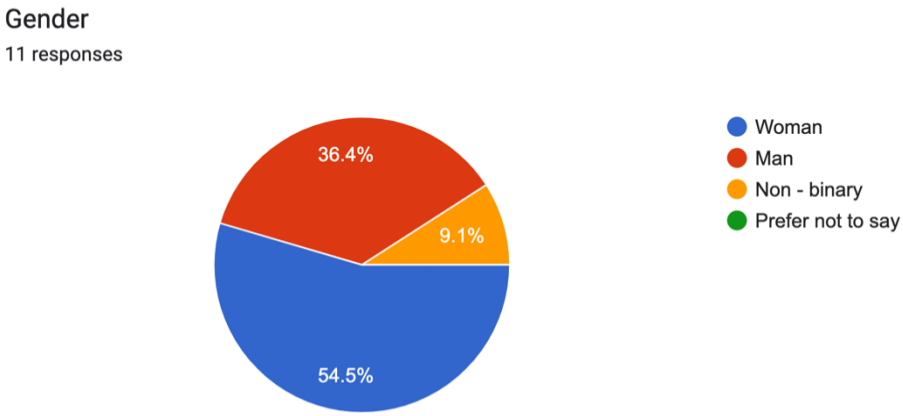

Figure 3.3 International Students Response Chart based on Gender

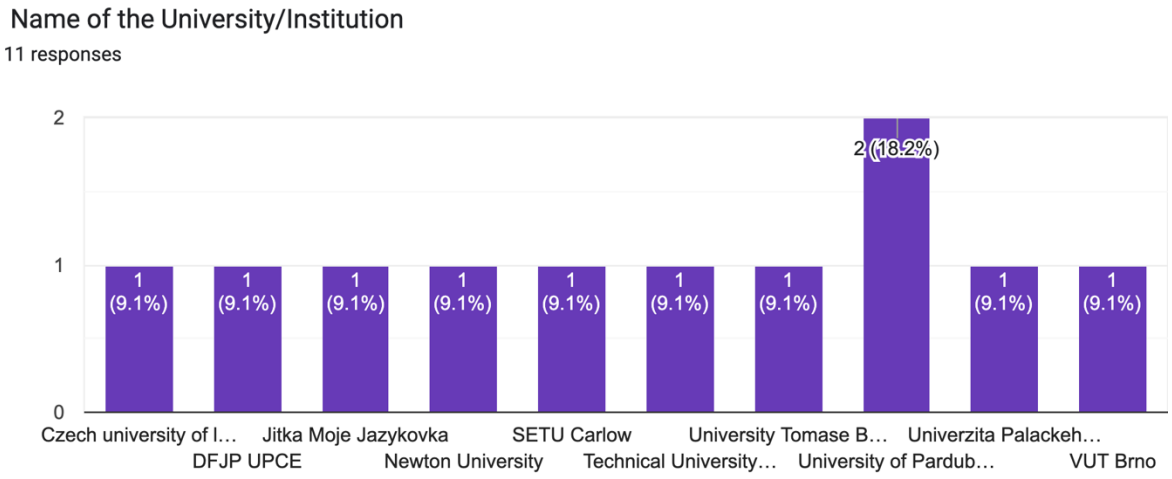

Figure 3.4 International Students Response Chart based on Institution

5.3 Research Questions

The primary objective of this study is to gain insights into the experiences of international students in the Czech Republic. The research questions focus on key aspects that significantly influence their academic and social encounters.

1. How do international students rate their orientation experience provided by the university?

   International students are constantly evolving in a new country, as they adjust to a different culture, education system, and language. To help international students make a successful transition to a new environment, universities employ orientation programs to prepare students for the specific aspects of campus life. It is important to understand which specific elements of an orientation program are perceived as most beneficial by international students to ensure they receive the necessary support required to succeed. This thesis will explore this phenomenon through an examination of the attitudes of international students toward orientation programs, focusing on which specific elements they feel are the most beneficial.

2. How would international students rate the quality of academic programs at their institutions?

   In today's highly competitive academic environment, universities and colleges are constantly striving to achieve the highest ratings in their academic programs. It is essential for institutions to understand the components that contribute to their overall ratings to ensure they are up to date with the necessary resources and materials for students and faculty. Academic facilities, faculty support, and course content all contribute to an academic program's rating and reputation.

   Academic facilities, such as libraries, computer labs, science laboratories, or lecture halls, provide students and faculty with access to the necessary resources for their

studies and research. These facilities are essential to delivering a quality academic environment. Libraries, for example, contain bountiful research materials, allowing students to access information for their projects and papers. Computer labs also provide students with the ability to complete their projects online. For faculty, these academic facilities give them the capacity to create lesson plans and create teaching visual aids for their classes. Without the necessary resources, faculty members would struggle to deliver a creative and stimulating learning environment.

In addition to the academic facilities, universities must consider how they provide faculty support to ensure that instructors are given the proper resources to help their students in their academic pursuits. Faculty support consists of service programs, online resources, and professional development for instructors. By providing a variety of support resources, universities and colleges are able to support the faculty in teaching their classes. Online resources can provide the instructors with lesson plans, how-to guides, and research materials to help them in the delivery of their information. Professional development workshops for instructors can also help them hone their skills and stay ahead of their students in the classroom. By creating these opportunities, universities are ensuring that instructors are given the tools necessary for providing an effective educational experience.

3. How would international students rate the cost of living in the Czech Republic?

This research paper seeks to examine the different economic perceptions held by international students from varied socio-economic backgrounds regarding living costs in Czech Republic. Although the cost of living in Czech Republic has been revealed to be particularly budget-friendly, the perception of various international students from diverse backgrounds still need to be studied further in order to ascertain whether cost of living in Czech Republic still presents challenges to those from the varied socio-

economic backgrounds. To understand the extent of these challenges, this paper shall explore the main factors that affect students from different socio-economic backgrounds in terms of overall cost of living in Czech Republic. This shall be studied through analyzing the views of international students from different socio-economic backgrounds on cost of living in Czech Republic, their experiences considering the cost of living and other financial barriers they face in Czech Republic, and how they seek to address the economic difficulties they are facing while attempting to maintain a comfortable lifestyle both on and off campus. This research aims to contribute to the existing literature by expanding our understanding of the way different international students perceive and manage the cost of living in Czech Republic and further investigate the different responses between students from different socio-economic backgrounds.

4. On a scale of 1 to 10, how satisfied are international students with their overall experience in the Czech Republic?

   As an international student in Czech Republic, there are a variety of factors that have been found to contribute to both high and low satisfaction scores. These primary factors include cultural compatibility, academic support, social contact, and employment opportunities.

   First, cultural compatibility has been identified repeatedly as a major factor that affects student satisfaction. This is viewed as an important part of the overall university experience, as international students must find ways to adjust to the new environment to fully enjoy the experience. Those who find it difficult to adjust to new cultures and values may experience lower levels of satisfaction while those who are more open and accepting of the new culture may find themselves more satisfied and contented.

Second, academic support is another major factor in student satisfaction. International students may require additional guidance or support, such as help with language barriers, the transition to a new education system, or a support structure due to their unfamiliarity with university life. Those who do not receive academic support may feel isolated and may not be able to make the most out of their academic experience, resulting in lower satisfaction scores.

Third, social contact is also important in influencing student satisfaction. It is essential for international students to have both positive and diverse social contact, as this can provide a sense of belonging and comfort to the student. Those who lack social contact may experience feelings of loneliness and isolation, leading to a decreased sense of satisfaction.

Finally, employment opportunities present yet another factor for student satisfaction. Having the ability to gain employment during studies can be immensely beneficial to international students, providing both financial stability and further valuable social contact. The lack of available employment opportunities can lead to a decrease in satisfaction levels, as it can be difficult to focus on studies without feeling secure financially.

In conclusion, satisfaction levels as an international student in Czech Republic can be influenced by a variety of factors. The cultural compatibility, academic support, social contact, and employment opportunities all play a major role in determining satisfaction levels. Those who receive the necessary support and guidance may be able to gain even greater satisfaction from their university experience.

5.4 Narrative arc

1.Who Is Involved? What Problem Do They Face?

Students: The central focus and primary audience.

Educators: Provide guidance and support.

Parents/Guardians: Influence and support decision-making.

Employers: Stakeholders interested in future talent.

Policy Makers: Shape educational policies.

Problems: Lack of Career Readiness Among High School Graduates.

2. What is the Extent of the Problem?

Extent: "Only 30% of high school graduates feel adequately prepared for careers, leading to higher unemployment rates among young adults."

3. What Can Be Done to Eliminate the Issue?

Enhanced Career Counseling: Introduce comprehensive career counseling programs in schools.

Work-based Learning Opportunities: Expand internships and apprenticeships.

Curriculum Reform: Update curriculum to include more practical skills and career-focused education.

4. What Action Does the Audience Need to Take?

Students: Engage actively in career exploration and skill development opportunities.

Parents/Guardians: Support and encourage participation in career-related programs.

Educators: Advocate for and implement curriculum reforms and career counseling.

Policy Makers: Allocate resources and support policies that promote career readiness.

Employers: Collaborate with schools to provide work-based learning experiences.

5.What Will Happen After We Solve the Problem?

Increased Career Readiness: Graduates will enter the workforce better prepared, reducing unemployment rates.

Improved Economic Stability: More skilled workforce contributes to economic growth.

Higher Job Satisfaction: Individuals find meaningful careers aligned with their skills and interests.

Example Data Storytelling Narrative

Imagine you've just graduated from high school, full of potential but unsure about your future. This uncertainty is common among many graduates today.

The Problem: Only 30% of high school graduates feel adequately prepared for the workforce. Many struggle to find jobs that match their skills and interests.

Extent of the Problem: Unemployment rates among young adults remain high due to a mismatch between educational outcomes and employer expectations.

Potential Solutions: To address this, schools can introduce robust career counseling programs, offer more internships and apprenticeships, and update curriculum to include practical, job-ready skills.

Audience Action: As students, you can explore different career paths and participate in internships. Parents can support and guide your career exploration. Educators can advocate for curriculum reforms, and policymakers can allocate resources to improve career readiness.

Future Outlook: With these steps, more graduates will find fulfilling careers, contributing to a stronger economy and higher job satisfaction across the board.

5.5 Study Design

This study adopts a cross-sectional survey design, employing a structured questionnaire to collect quantitative data on international students' experiences. The survey will be distributed to a representative sample of international students across various academic majors and demographics in the Czech Republic.

5.6 Data Collection

The instrument that was used in collecting the data was Google forms.

Google Forms is a versatile data collection instrument used for questionnaires and surveys. It provides users with an intuitive, user-friendly platform that enables them to build fully customizable forms in a matter of minutes for any purpose, including collecting survey responses, opinions, or feedback. Google Forms is a reliable and cost-effective tool for collecting and organizing data related to different topics.

The key advantages of using Google Form as a data collection tool are as follows:

First, Google Forms is a free tool that provides a platform for people to create forms and surveys easily. It is a secure platform that allows users to customize forms and surveys according to their specific needs. Furthermore, Google Forms provides advanced functionality, allowing users to analyze collected data, create visual charts and tables, and generate comprehensive reports, all of which can be easily shared with others.

Second, users can easily integrate third-party tools to their forms, such as surveys, images, or videos, which makes it a powerful and comprehensive data collection tool. In addition, it provides a clean and concise user interface that allows users to easily control and customize the data collected.

Third, the data collected via Google Forms is protected using the highest level of encryption, which ensures that the information is secure and confidential. Finally, users have the freedom to share the information gathered with others in an organized fashion.

Google Forms is an effective and reliable data collection instrument which provides users with an easy-to-use platform to collect and organize data related to different topics. The tool's advanced functionality, integrative capabilities, user-friendly interface, and security features make it an attractive option for collecting data quickly and efficiently.

6 CONCLUSION

The aim of this thesis provides a comprehensive guide to data storytelling, focusing on the narrative structure, key components, and the process of creating an impactful data story. It emphasizes the importance of presenting data in a compelling and engaging manner to effectively communicate insights and drive decision-making. The document outlines the essential elements of a data story, including the exposition, rising action, climax, falling action, and resolution, drawing parallels to Freytag's Pyramid to illustrate the narrative arc. It also highlights the advantages of data storytelling, such as simplifying complex data for quicker and more confident decision-making.

Furthermore, the project emphasizes the significance of visuals in data storytelling, stressing the need for a balanced integration of visuals and text to provide context and support the narrative. It also underscores the importance of a consistent color scheme and alignment for visuals to create a polished and professional look. Additionally, the document provides practical steps for creating a data story, such as defining the purpose of the story, outlining the narrative from introduction to conclusion, asking critical questions, and setting goals for the audience.

In summary, the thesis serves as a comprehensive resource for individuals seeking to master the art of data storytelling. It provides a detailed framework for structuring and presenting data in a compelling narrative, with a focus on engaging the audience, driving decision-making, and inspiring action. By following the guidelines and principles outlined in the document, individuals can effectively leverage data storytelling to convey insights, influence perceptions, and guide strategic decision-making.

In conclusion, the document offers a wealth of knowledge and practical insights into the art of data storytelling, equipping readers with the tools and techniques necessary to create impactful

and persuasive data stories. It serves as a valuable resource for analysts, researchers, and professionals across various industries who seek to harness the power of storytelling to communicate data-driven insights effectively. By understanding and applying the principles outlined in the document, individuals can elevate their data storytelling skills and make a meaningful impact in their respective fields

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APPENDIX – Data Storytelling Presentation aimed at international students (10 slides)

Why choose the University Of Pardubice

The University of Pardubice offers a unique blend of high-quality education, cultural experiences, and personal growth opportunities. Nestled in the heart of the Czech Republic, Pardubice provides an ideal environment for both academic and personal development. Our university is dedicated to fostering an inclusive community that values diversity and promotes global understanding. Here, students not only excel academically but also experience a vibrant cultural life, making lifelong memories and connections.

Quality education and programs.

Our university is renowned for its strong academic programs, modern facilities, and experienced faculty. At the University of Pardubice, we prioritize academic excellence and student success. Our curriculum is designed to be both rigorous and supportive, ensuring that students are well-prepared for their future careers. We provide comprehensive support for academic development, including personalized mentoring, advanced research opportunities, and state-of-the-art facilities. Our commitment to quality education is reflected in the high satisfaction ratings from our international student body.

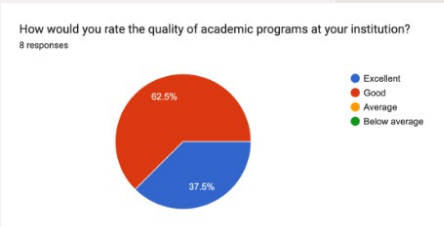
Data Points:

•High Ratings of Academic Programs by International Students:

- 62% of international students rate their academic experience as excellent.

•Comprehensive Support for Academic Development:

- Over 85% of students report having access to substantial academic resources and support services.



Leading Research Opportunities

The University of Pardubice is at the forefront of research, offering numerous opportunities for students to engage in ground-breaking projects. Our commitment to innovation and scientific advancement is evident through our extensive research initiatives and partnerships. Students have access to state-of-the-art research facilities, where they can work alongside experienced faculty and industry leaders. These collaborations not only enhance academic learning but also provide practical experience that is invaluable in today's competitive job market.

Data Points:

•Access to State-of-the-Art Research Facilities:

- Over 10 cutting-edge research laboratories available for student use.
- Continuous investment in modern technology and equipment.

•Collaboration with Industry Leaders:

- Partnerships with over 50 leading companies and research institutions globally.
- Students participate in real-world projects and internships.

Embracing Diversity and Integration

We celebrate cultural diversity and ensure every international student feels at home. At the University of Pardubice, w pride ourselves on creating an inclusive and supportive community for all students. Our orientation programs are specifically tailored to help international students acclimate to their new environment, offering comprehensive support from day one. Additionally, our vibrant student clubs and events foster cultural exchange and understanding making it easy for students from different backgrounds to connect and share their unique perspectives.

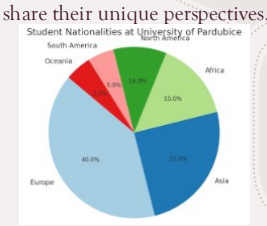
Data Points:

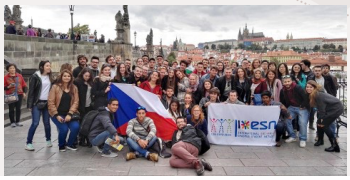
•Orientation Programs Tailored for International Students:

- Intensive orientation sessions covering academics, social life, and cultural adaptation.
- Peer mentoring programs to help new students navigate their new environment.

•Student Clubs and Events Promoting Cultural Exchange:

- Over 20 active student clubs dedicated to various cultural, academic, and recreational interests.
- Regular events celebrating cultural diversity, including international food festivals, cultural nights, and more.





Affordable living and Financial aid

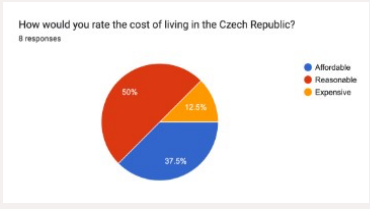
Studying in Pardubice is cost-effective, with a lower cost of living compared to many Western countries. This makes it a attractive destination for international students seeking high-quality education at an affordable price. Additionally, the University of Pardubice offers a variety of scholarships and financial aids to help students manage their expenses, ensuring that financial constraints do not hinder academic and personal growth.

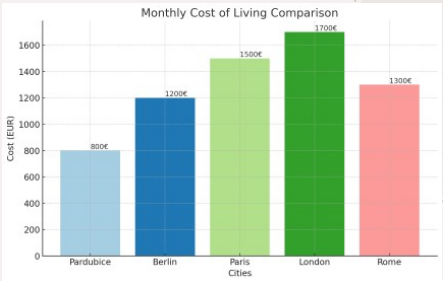
Data Points:

•Comparison of Living Costs Between Pardubice and Other European Cities:

•Types of Financial Aid Available:

- Research grants and funding for specific projects.
- Part-time job opportunities on campus to help students earn while they learn.





Student Satisfaction

Our international students consistently rate their experience highly, noting the supportive environment and quality education. The University of Pardubicis dedicated to providinga nurturing and enriching experience for all its students, ensuring they feel welcomed and supported throughout their academic journey. The positive feedback from our international community highlights the effectiveness of our programs and the vibrant campus life.

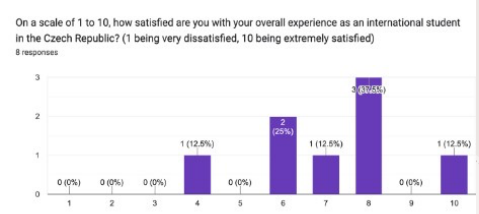
Data Points:

•Overall Satisfaction Ratings:

- 90% of international students express high overall satisfaction with their experience.

•Positive Feedback on Academic and Social Experiences:

- 88% rate their academic experience positively.



Successful Alumni Network

Graduates from the University of Pardubice go on to achieve significant success in their respective fields globally. Our alumni network spans across various industries, showcasing the diverse and impactful careers our graduates pursue. Th university not only equips students with the knowledge and skills needed for their careers but also provides lifelong support through a strong and active alumni community.

Data Points:

•Employment Rates of Graduates:

- Over 90% of graduates secure employment within six months of graduation.
- High employment rates in sectors such as technology, healthcare, and business.

•Notable Alumni Achievements:

- Alumni holding prestigious positions in multinational companies.

Solomon Gyamfi,PHD.
Asistant Professor, RDG

Click here to get to the application portal

Call To Action

We invite you to embark on a transformative educational journey with us. The University of Pardubice offers a unique blend of high-quality education, diverse cultural experiences, and personal growth opportunities. Apply now and become part of our vibrant, supportive community. Take the first step towards a future filled with endless possibilities and global opportunities.

Questions and Answers

We are here to answer any questions you may have about studying at the University of Pardubice. Our team is dedicated to providingyou with all the information and support you need to make an informed decision about your education. Feel free to ask us anything about our programs, campus life, application process, or any other aspect of studying here.

Visuals:

1.Contact Information:

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2. Phone: +420 466 036 111
3. Website: University of Pardubice Contact Page