

About our presenter



Ted Stolarczyk Technical Advisor, SAS

Ted helps organizations tell their most impactful story with their data. He leads customer adoption efforts around the SAS Visual Analytics solution and has been providing technical pre- and post-sales customer care support his entire career. Ted can showcase overall capabilities, or he can explain how it can integrate with customers' internal business process and technology site-specific requirements.

SAS Visual Analytics (VA)

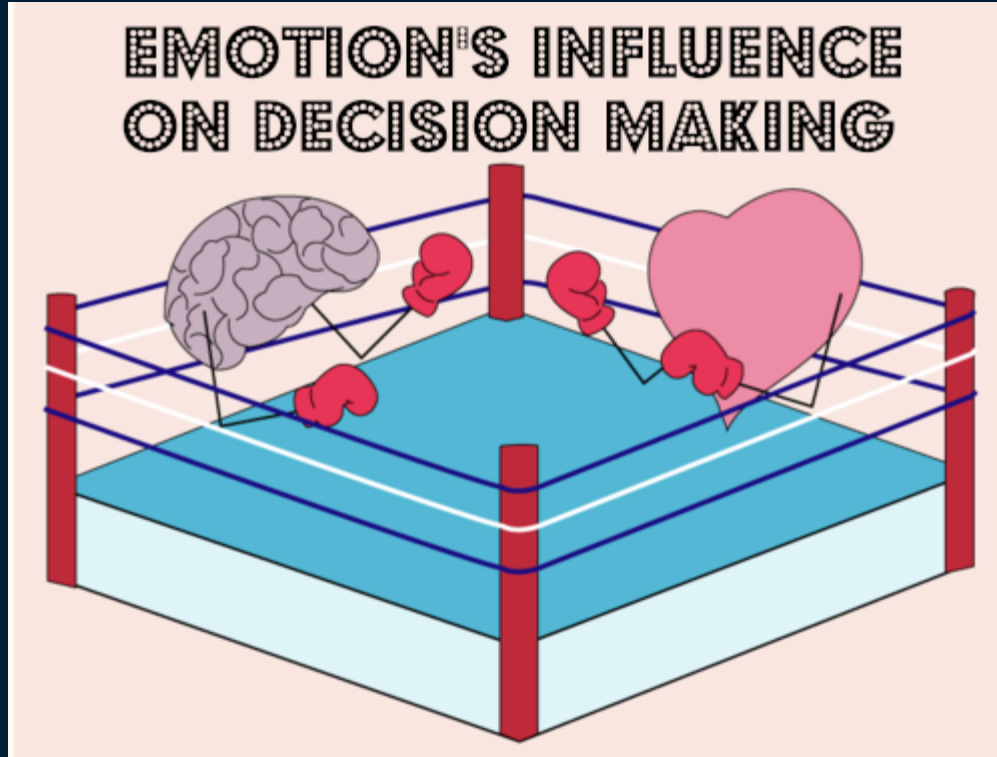
**“Stories are data with a soul,
...persuasive and memorable.”**



Polling Question #1: Your usage and version of SAS VA?

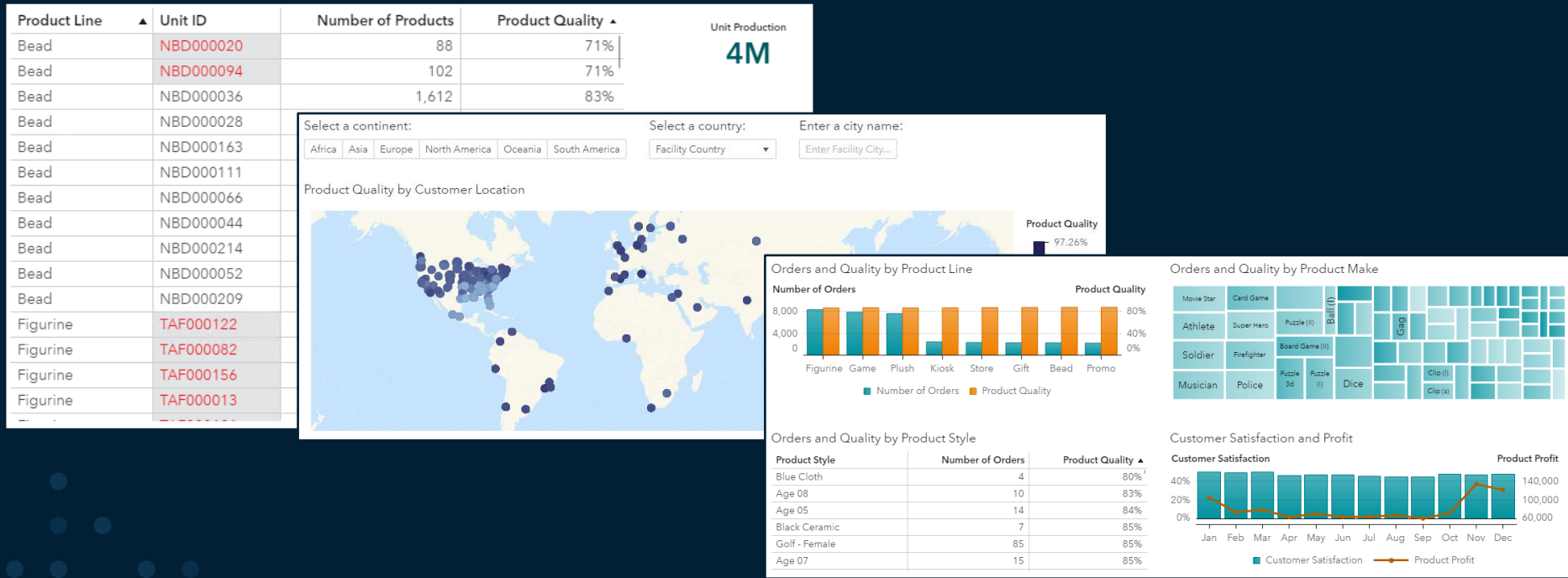


Is decision-making possible without emotions?



Traditional reporting (any data story) vs. Emotional persuasion (feel/act story)

Usability report design/re-design important before getting into persuasion



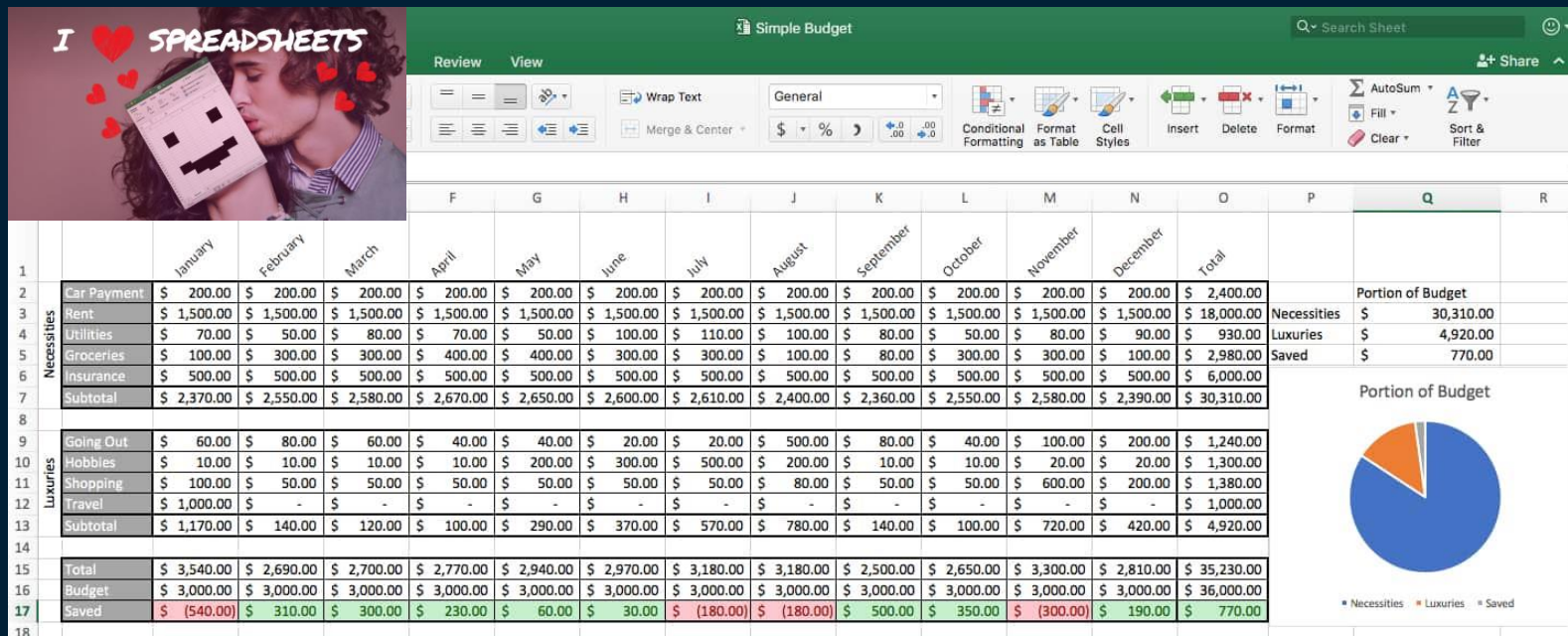
Polling Question #2: Your role with data in reporting?

Elicit emotion for the Report Builder/Developer



Raising the Bar! Developing World-Class Reports with SAS Visual Analytics

Can you tell any (let alone persuasive) data story with spreadsheets?



The screenshot displays a budget spreadsheet with columns for months (January to December) and a 'Total' column. The data is categorized into 'Necessities', 'Luxuries', and 'Saved'. A pie chart on the right, titled 'Portion of Budget', shows the distribution: Necessities (blue, ~83%), Luxuries (orange, ~14%), and Saved (green, ~3%).

	January	February	March	April	May	June	July	August	September	October	November	December	Total		
Necessities															
Car Payment	\$ 200.00	\$ 200.00	\$ 200.00	\$ 200.00	\$ 200.00	\$ 200.00	\$ 200.00	\$ 200.00	\$ 200.00	\$ 200.00	\$ 200.00	\$ 200.00	\$ 2,400.00		
Rent	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 18,000.00	Necessities	
Utilities	\$ 70.00	\$ 50.00	\$ 80.00	\$ 70.00	\$ 50.00	\$ 100.00	\$ 110.00	\$ 100.00	\$ 80.00	\$ 50.00	\$ 80.00	\$ 90.00	\$ 930.00	Luxuries	
Groceries	\$ 100.00	\$ 300.00	\$ 300.00	\$ 400.00	\$ 400.00	\$ 300.00	\$ 300.00	\$ 100.00	\$ 80.00	\$ 300.00	\$ 300.00	\$ 100.00	\$ 2,980.00	Saved	
Insurance	\$ 500.00	\$ 500.00	\$ 500.00	\$ 500.00	\$ 500.00	\$ 500.00	\$ 500.00	\$ 500.00	\$ 500.00	\$ 500.00	\$ 500.00	\$ 500.00	\$ 6,000.00		
Subtotal	\$ 2,370.00	\$ 2,550.00	\$ 2,580.00	\$ 2,670.00	\$ 2,650.00	\$ 2,600.00	\$ 2,610.00	\$ 2,400.00	\$ 2,360.00	\$ 2,550.00	\$ 2,580.00	\$ 2,390.00	\$ 30,310.00		
Luxuries															
Going Out	\$ 60.00	\$ 80.00	\$ 60.00	\$ 40.00	\$ 40.00	\$ 20.00	\$ 20.00	\$ 500.00	\$ 80.00	\$ 40.00	\$ 100.00	\$ 200.00	\$ 1,240.00		
Hobbies	\$ 10.00	\$ 10.00	\$ 10.00	\$ 10.00	\$ 200.00	\$ 300.00	\$ 500.00	\$ 200.00	\$ 10.00	\$ 10.00	\$ 20.00	\$ 20.00	\$ 1,300.00		
Shopping	\$ 100.00	\$ 50.00	\$ 50.00	\$ 50.00	\$ 50.00	\$ 50.00	\$ 50.00	\$ 80.00	\$ 50.00	\$ 50.00	\$ 600.00	\$ 200.00	\$ 1,380.00		
Travel	\$ 1,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,000.00		
Subtotal	\$ 1,170.00	\$ 140.00	\$ 120.00	\$ 100.00	\$ 290.00	\$ 370.00	\$ 570.00	\$ 780.00	\$ 140.00	\$ 100.00	\$ 720.00	\$ 420.00	\$ 4,920.00		
Total	\$ 3,540.00	\$ 2,690.00	\$ 2,700.00	\$ 2,770.00	\$ 2,940.00	\$ 2,970.00	\$ 3,180.00	\$ 3,180.00	\$ 2,500.00	\$ 2,650.00	\$ 3,300.00	\$ 2,810.00	\$ 35,230.00		
Budget	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 36,000.00		
Saved	\$ (540.00)	\$ 310.00	\$ 300.00	\$ 230.00	\$ 60.00	\$ 30.00	\$ (180.00)	\$ (180.00)	\$ 500.00	\$ 350.00	\$ (300.00)	\$ 190.00	\$ 770.00		

Polling Question #3: what's the very 1st emotion from list you feel when it comes to this spreadsheet or ANY spreadsheet?

SAS VA though does allow you to create [spreadsheets](#) or integrate with [MS-Office](#)

Just like there are 10 positive power emotions to cultivate in life



There are 10 recommendations to elicit emotion with your SAS VA community ...
(report consumer)

1. Color Psychology and Creating Mood

Red

😊 Excitement Prosperity*
Energy Long life*
Passion Celebration*
Action Purity**
Love Spirituality**
Luck* Vitality***
Joy*

😞 Danger Revolution
Communism Death***

Special Notes: * Asia
** India
*** Some African countries

Yellow

😊 Happiness
Optimism
Warmth
Joy
Hope

😞 Cowardice
Envy*
Caution

Special Notes: * Germany

Green

😊 Loneliness Wealth
Luck Fertility
Nature Youth
Freshness
Spring
Environmental awareness

😞 Depression Jealousy
Inexperience Infidelity*

Special Notes: * Eastern cultures

Forbidden color in Indonesia

Orange

😊 Autumn Love***
Harvest Happiness***
Warmth Humility***
Visibility Good
Sacred* health**
Sexuality & fertility**

😞 None

Special Notes: * in Hinduism
** Colombia
*** Eastern cultures

Purple

😊 Royalty
Wealth
Spirituality
Nobility
Piety
Faith
Honor

😞 Mourning*

Special Notes: * Brazil, Thailand

Blue

😊 Divine joy
Immortality
Peace
Good health
Trust
Security
Authority
Healing

😞 Sadness

Special Notes: None

White

😊 Purity (western culture)
Elegance
Peace
Cleanliness

😞 Death*
Mourning*
Bad luck*

Special Notes: * some Asian countries

Black

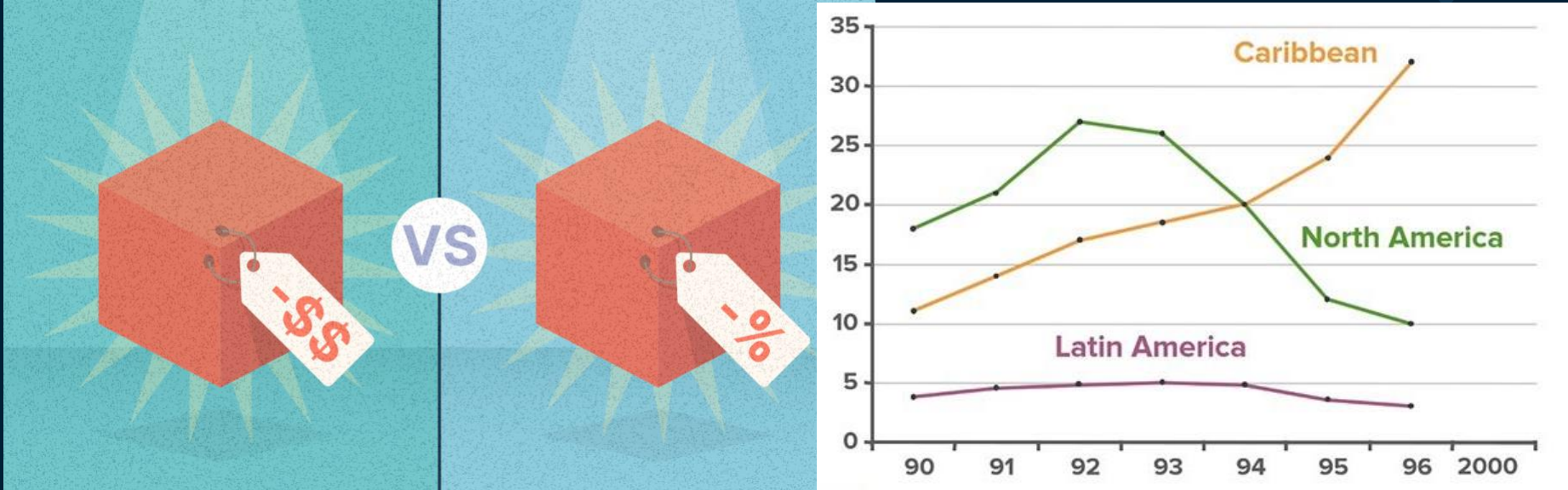
😊 Sophistication
Formality
Fierceness
Mystery
Age*
Maturity*
Masculinity*

😞 Death Illness
Mourning Bad luck

Special Notes: * Africa

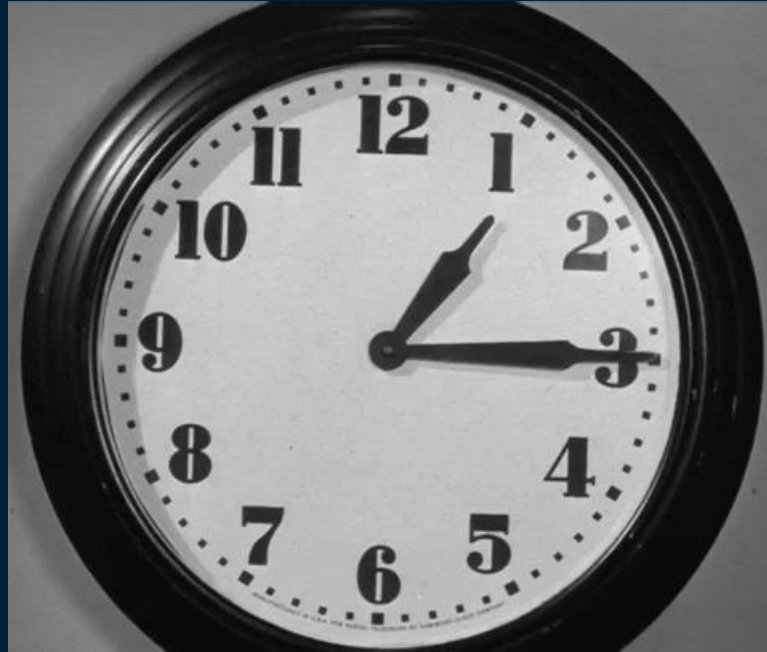
Let us not forget about
Accessibility
(impacts more than just color)

2. Evoke emotion with Bias Detection (SAS Viya examples)



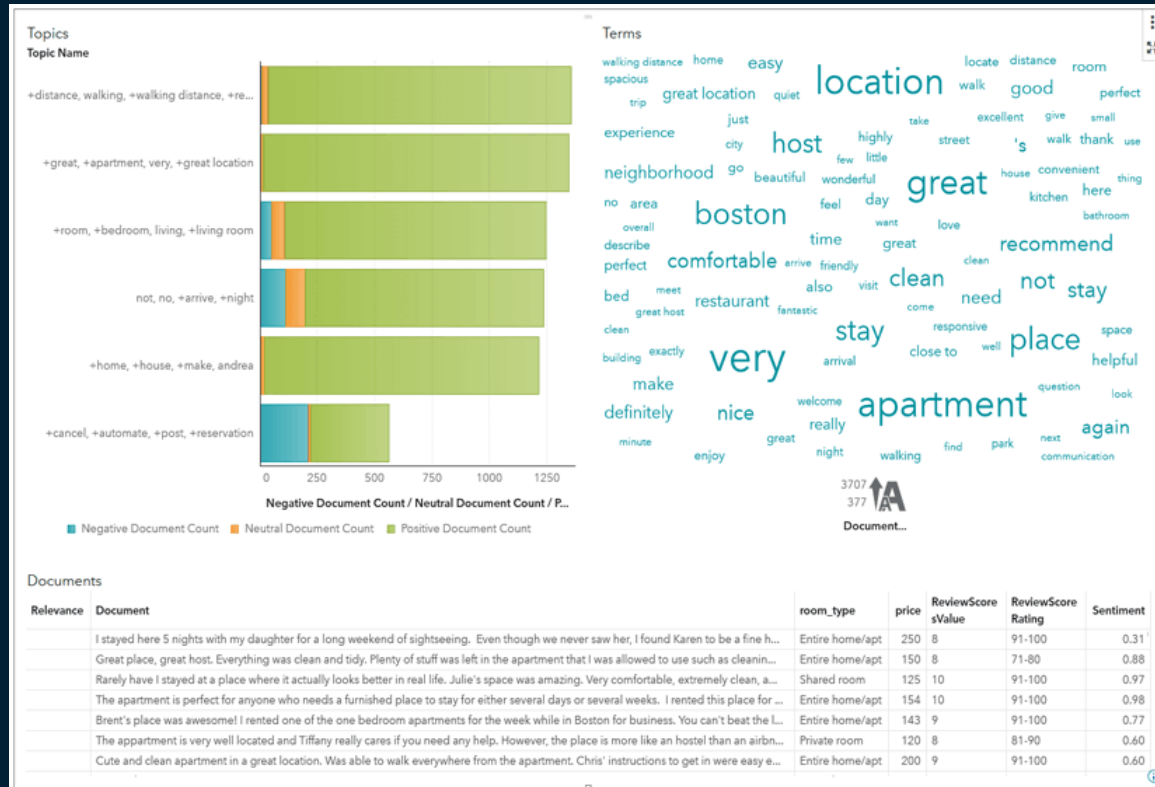
Polling Question #4: What's the very 1st emotion from list you feel if you would find out that you paid \$ more for good/services compared to somebody else (either once or over time)?

3. Evoke emotion with Time Perception (SAS VA time and date examples)



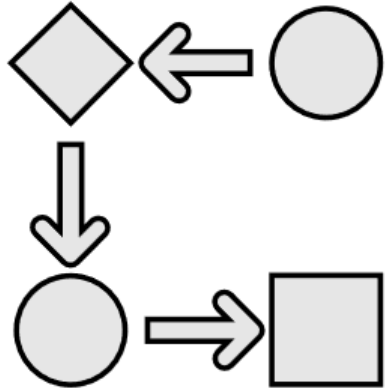
Polling Question #5: If you can only choose 1 of the following, which 1 of the following factors influence you the most on how you perceive time?

4. Emotion versus Sentiment (SAS VA capability example -> [here](#))



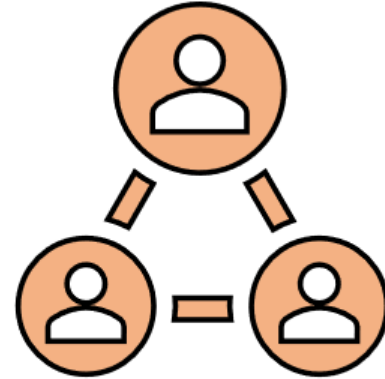
5. Paint a picture of impact

Process Flows



Show how the data affects a process

Journey Maps



Illustrate how data impacts a customer's journey

Two of other examples of how SAS VA can show impact -> networks (~ flows) and path analysis (~ journey)

5. More regarding impact analysis (outlier) within SAS Visual Analytics

Outliers of Exposure Amount

Are There Outlier Values of Exposure Amount?

There are 21069 outlier values of Exposure Amount. When Exposure Amount is grouped by loan_type, these outliers change the sum of a group by more than 5%. It is also possible that a group consists entirely of outliers.

What Are the Details of These Outliers?

	Exposure Amount	loan_type	line_of_business	product_type	industry_name	industry_code	counterparty
*	\$372,993,449	Term loan	Commercial Loan	Commercial Loan	Real Estate Commercial	1	Counterparty 5
*	\$280,022,137	Term loan	Commercial Loan	Commercial Loan	Real Estate Commercial	1	Counterparty 5
*	\$271,866,153	Term loan	Commercial Loan	Commercial Loan	Real Estate Commercial	1	Counterparty 2
*	\$252,019,924	Term loan	Commercial Loan	Commercial Loan	Real Estate Commercial	1	Counterparty 2
*	\$250,596,812	Revolver	Commercial Loan	Commercial Loan	Real Estate Commercial	1	Counterparty 3
*	\$246,979,525	Term loan	Commercial Loan	Commercial Loan	Real Estate Commercial	1	Counterparty 6
*	\$243,297,876	Revolver	Commercial Loan	Commercial Loan	Real Estate Commercial	1	Counterparty 2

Use the details of each observation to determine why it may be an outlier. The table may be unfiltered to show all outliers but the outliers used in the aggregations will always be highlighted for reference.

What Groups Are Affected by Exposure Amount Outliers?

loan_type	Including Outliers	Excluding Outliers	Outlier Impact	Difference
Derivatives	\$27,293,357,177	\$26,719,997,876	2.10%	573359300.43
Revolver	\$25,697,101,349	\$6,385,603,172	75.15%	19311498178
Revolver Consumer	\$1,608,709,622	\$1,608,709,622	0.00%	0
Term loan	\$52,511,442,560	\$21,513,245,601	59.03%	30998196959

▼ **Outliers**

The following data items have outliers which may be affecting objects in the report:

100%

One or more objects is impacted by outliers.

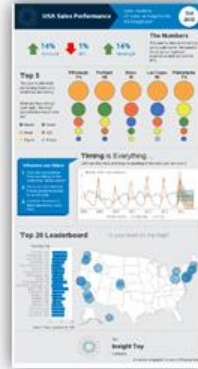
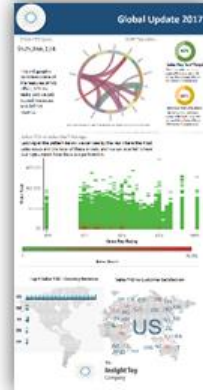
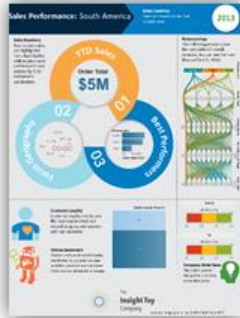
Exposure Amount

Waterfall - loan_type 1 [Details](#)

a) Outlier value detection in Data Pane b) Box Plot visuals c) Report Insights depicted above

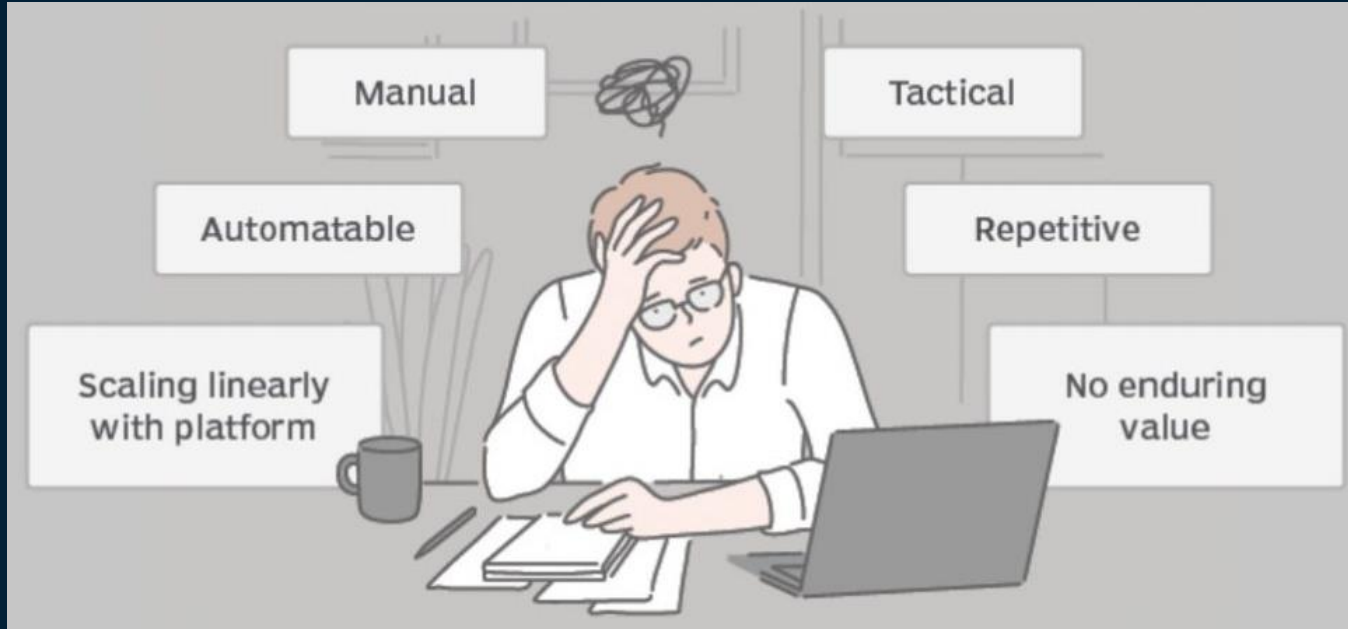
6. Evoke emotion with Animation, Images, Video

- Playable visuals or dashboards
- Photography or cartoon imagery
- Infographics like you see here
- Or creative use of video



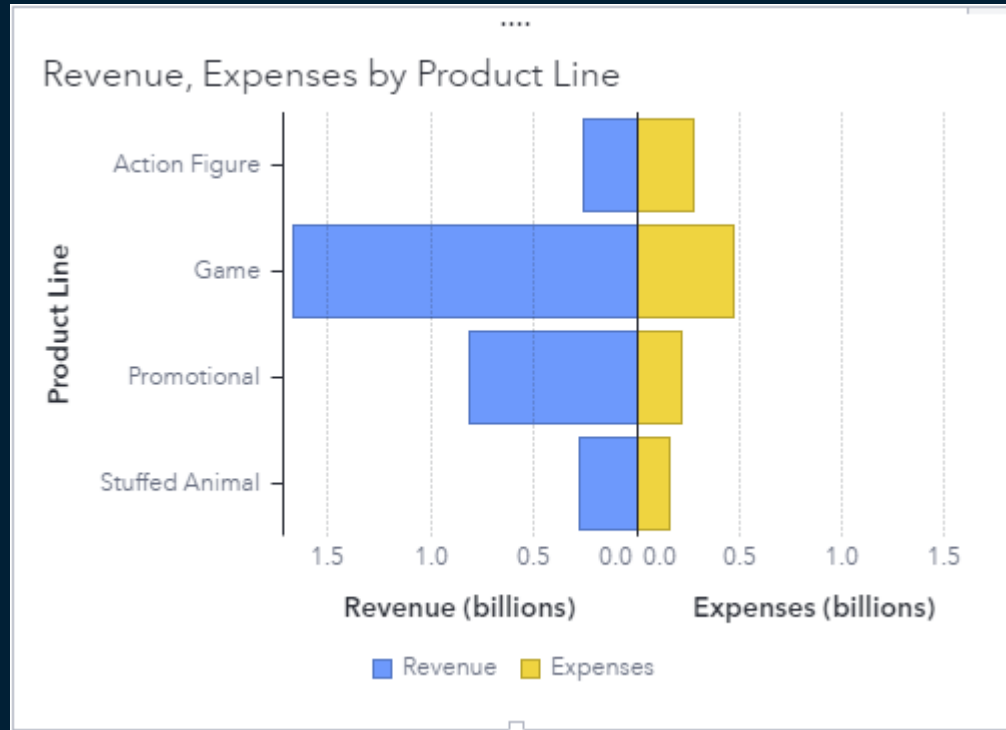
7. Make the invisible -> visible / intangible -> tangible / un-measurable -> measurable / un-quantifiable -> quantifiable

One random example -> TOIL <- not talking about the HR definition 😊 -> to VALUE



Calculations (simple or advanced) are possible with SAS VA -> [examples here](#)

8. Compare/Contrast ~~~ Frame Of Reference ~~~ Relative Importance



Other random examples of compare/contrast in SAS VA -> [here](#)

9. Encourage an environment (collaborative) of different (but fair) interpretation of the same (source) data



Different sampling/filtering of data or scaling of data on visuals is one matter. The choice of statistical techniques when examining data plays a larger role in outcomes.

10. Evoke emotion with Call to Action / Why / Because



Report/Page/Visual-level alerts, comments or annotations +
Making a human conversation

“Communication, the human connection, is the key to personal/career [and group/team] success”
Paul J. Meyer



Can “Generative AI” help evoke emotion for you?

1 of 3

T

How can I tell my most impactful story with my data from an emotional persuasion point of view so I can catch the attention of my co-workers and management to act on what should be critical work matters?



To tell a compelling story with your data that has an emotional impact, you should consider the following steps:

1. **Identify your audience:** Before you start creating your data story, you need to know who your audience is. This will help you tailor your message to resonate with them. Ask yourself: Who am I trying to persuade? What do they care about? What is their level of expertise on the topic?
2. **Find the story in your data:** Look for patterns, trends, and insights in your data that can tell a story. Start by identifying the main message you want to convey and then look for evidence to support it.
3. **Use visuals:** People respond well to visual representations of data. Use charts, graphs, and other visual aids to help tell your story. Make sure the visuals are easy to read and understand.
4. **Make it personal:** Use real-life examples and anecdotes to help your audience connect emotionally with your data. For example, if you're presenting data on a particular issue, tell the story of someone who has been directly affected by it.
5. **Be concise:** Keep your message simple and straightforward. Avoid using technical jargon or complex language that might confuse your audience. Use clear, concise language that anyone can understand.
6. **End with a call to action:** Once you've told your story, end with a call to action. Tell your audience what you want them to do next. Be specific and make it clear what action you want them to take.

By following these steps, you can create a data story that is both informative and emotionally persuasive, and that will catch the attention of your co-workers and management, inspiring them to act on critical work matters.



Can “Generative AI” help evoke emotion for you?

2 of 3

T

What are examples of good data visualizations that elicit emotion and what are examples of data visualizations that do not elicit emotion?

SAS VA
Gallery of Objects



Good data visualizations that elicit emotion are those that help people connect with the data on a personal level. Here are some examples:

1. Infographics that tell a story: Infographics are a great way to combine data and storytelling. For example, an infographic about the impact of climate change might show how rising temperatures are affecting different parts of the world.
2. Heatmaps that show concentration: Heatmaps can be used to show concentration, which can be a powerful way to highlight disparities. For example, a heatmap of poverty rates in a city might show how poverty is concentrated in certain neighborhoods.
3. Interactive charts that allow exploration: Interactive charts can be a great way to help people explore data and make their own discoveries. For example, an interactive map of traffic accidents might allow users to filter by location, time of day, and type of accident.

Examples of data visualizations that do not elicit emotion are those that are too complex or too simplistic. Here are some examples:

1. Line charts with too much detail: Line charts can be a great way to show trends over time, but if they have too much detail, they can be overwhelming and difficult to read.
2. Bar charts with too little detail: Bar charts can be a great way to show comparisons between different groups, but if they are too simple, they can be boring and fail to engage the viewer.
3. Pie charts with too many categories: Pie charts can be a great way to show proportions, but if they have too many categories, they can be difficult to read and fail to convey a clear message.

Overall, good data visualizations are those that are simple, clear, and help people connect with the data on a personal level.



Can “Generative AI” help evoke emotion for you?

Aristotle's ethics (ethos), logic (logos) and emotion (pathos)

3 of 3

T

To be most successful in persuasion with the data in my reports, is it more important to appeal to ethics, appeal to logic or appeal to emotion?



To be most successful in persuasion with data in your reports, it's important to use a combination of appeals that are appropriate to your audience and the situation. This is because people are motivated by different things and respond to different types of arguments.

That said, the most effective approach to persuasion with data is to use a combination of all three appeals: appeal to ethics, appeal to logic, and appeal to emotion. Here's why:

1. **Appeal to ethics:** This involves making an argument based on what is right and wrong, good and bad, just and unjust. If your data can support an ethical argument, such as the impact of your organization's actions on the environment, then appeal to ethics can be a powerful motivator for change.
2. **Appeal to logic:** This involves making an argument based on reasoning and evidence. If your data can support a logical argument, such as the financial benefits of implementing a new process, then appeal to logic can be persuasive for those who prioritize facts and data.
3. **Appeal to emotion:** This involves making an argument that appeals to the audience's emotions, such as fear, anger, or hope. If your data can be presented in a way that elicits an emotional response, such as the human impact of a particular issue, then appeal to emotion can be an effective motivator for change.

In summary, to be most successful in persuasion with data, use a combination of appeals that are appropriate to your audience and the situation. Use an ethical argument to appeal to values, a logical argument to appeal to reason, and an emotional argument to appeal to feelings.



“Socrates” (vs. “Aristotle”) method of using SAS Visual Analytics

Portfolio 1 | NGFS 2 | Flood 3 | **Parametrisation 4** | Scen Comp. 5 | Portfolio 6 | Map 7 | Macro_Scen 0 | Scen Comp. 0

ESG-Navigator v0.1

- About
- Incub_Context
- Port.view 1
- NGFS data
- Flood data
- Parametrisat.**
- Scen.Comp.
- Port.view 2
- Map

Parametrisation (Hurdles in %-points)

EPS_GDP: -1.00

EPS_EQU: -1.00

Hurdle_GDP: 1.50

Hurdle_EQU: 3.00

First the ttc-PD (trough the cycle) per Exposure got adjusted to a general Stress-Level. Then this new PD is multiplied with the following sector specific Climate Stress Factor:

$$G_{i,t,stress} = (1 + (\epsilon_{GDP} \times \Delta GDP) + (\epsilon_E \times \Delta E \times TVF_i)) \times G_{i,t-1,stress}$$

Eigene Konkretisierung: $\Delta GDP = (GDP_t - GDP_{t-1}) - Hurdle_{GDP}$
 $\Delta E = (E_t - E_{t-1}) - Hurdle_E$

"TVF" stands for Transition Vulnerability Factor
"E" stands for Equity Prices.

relative change of PD vs. 2020

Level PD Change

year

Below 2°C (with GCAM5.3_NGFS inputs)

gdp_pa, equ_pa by year (in %)

gdp_pa / equ_pa

year

gdp_pa equ_pa

Like Markus Weick did, let's ALL crowd source ideas -> [here](#)

In conclusion / data storytelling (in general) is still valuable!



[Part 1 read](#)

[Part 2 read](#)

In conclusion / how to make it persuasive storytelling (and your own!)



Build a unique human relationship not just a “data relationship” with your report consumers

