

fans*

NORDIC SAS USER GROUP



VISUAL ANALYTICS

FANS Nätverksmöte #8

2021-09-01





KARTOR, KARTOR, KARTOR

Carl-Olow Magnusson
Nordic Senior Visualization Advisor



Frågor till publiken

Visste du att...

- ... VA på Viya har 25 olika kartor (OpenStreet + ArcGIS)
- ... det finns olika geografiska standarder (tex. land + regioner, ISO)
- ... det finns en valideringsfunktion för geo-kopplingar
- ... du kan lägga till dina egna ikoner i kartor
- ... att du kan importera egna shapefiler (regioner/polygoner)

Lägga till egna ikoner i kartor



Importer Shapewriter

Project Tree

```
Process Flow
├── SVERIGE_KOMMUNER
│   ├── Query Builder
│   └── Programs
│       └── CAS Connection
```

Servers

```
Refresh Disconnect Stop
Servers
├── Private OLAP Servers
```

CAS Connection

Program Log Output Data (2)

Save Run Stop Selected Server: Local Analyze Program Export Segd To Create Changes Commit History Properties

```
*** Koppling till Viya och CAS ***;
OPTIONS cashost="nordicviya.nordicviya.sashq-r.openstack.sas.com" casport=5570;
CAS;
CASLIB _ALL_ ASSIGN;
run;

*** Bearbeta och ladda shapefil ***;
proc mapimport datafile="C:\Users\swecom\Desktop\ShapeFiler\Län i Sverige\WGS84_slpkn.shp"
out=work.sverige_kommuner;
run;

data casuser.sverige_kommuner;
set work.sverige_kommuner;
seqno=_n_;
run;

*** Uppdatera och ladda till CAS ***;
proc casutil;
*droptable casdata="sverige_kommuner" incaslib="PUBLIC"; /**/ Needed when updating tables in CAS ***/
save casdata="sverige_kommuner" incaslib="CASUSER" outcaslib="PUBLIC" casout="sverige_kommuner" replace;
promote casdata="sverige_kommuner" incaslib="CASUSER" outcaslib="PUBLIC" casout="sverige_kommuner";
quit;
```

Shapefilen

Ett sekvensnummer läggs till

Log Summary

Errors (0) Warnings (0) Notes (7)

Description	Line	Affected Code	Log Line	Program Li...
NOTE: Writing TAGSETS.SASREPORT13(EGSR) Body file: EGSR	26	options(rolap="on")	22	
NOTE: The data set WORK.SVERIGE_KOMMUNER has 112088 observ...	33	run;	28	

Du måste vara administratör för att kunna lägga upp en ny "Polygon Provider"

Data

INSIGHT_TOY5_DEMO_VIYA

Filter

+ New data item

Category

- Customer - 46K
- Facility - 42
 - Facility City - 42
 - Facility Continent - 5
 - Facility Country - 29
 - Facility Opening Date - 9
 - Facility Region - 42
- Order - 112K
- Product - 895K
 - Product Brand - 2
 - Product Line - 8
 - Product Make - 71
 - Product Style - 335
- Returning Customer - 2
- Sales Rep - 406
- Transaction Date - 3.4K
- Transaction Month - 156
- Transaction Weekday - 5
- Transaction Year - 13
- Unit - 80
- Unit Status - 1

New Geography Item

Name:
Geographic Item 1

Based on:
Facility Country

Geography data:
Geographic data provider

Geographic data provider:
Choose provider

Region ID:
Choose column

Latitude (y):
Choose column

Longitude (x):
Choose column

Coordinate Space:

Mapping information not available.

Buttons: New, Edit, Cancel

Options

Roles

Actions

Rules

Filters

Ranks

Regional Revenue

Page Title

1.7K

5.5K

Editing

Data

SVERIGE_KOMMUNER

Filter

New data item

Category

- KOM_KOD - 290
- KOMMUNNAMN - 290

Measure

- FeatureID
- Frequency
- SEGMENT
- seqno
- X
- Y

Aggregated Measure

- Frequency Percent

New Geographic Data Provider

Name: SverigesKommuer

Label: SverigesKommuer

Based on: FeatureID

Geography data: Geographic ID

Geographic data: Choose province

Region ID: Choose column

Latitude (y): Choose column

Longitude (x): Choose column

Coordinate Space:

Type: CAS Table

Server: cas-shared-default

Library: Public

Table: SVERIGE_KOMMUNER

OK Cancel

Detta är shapefilen som jag importerade tidigare

Report 1

Editing

Data

SVERIGE_KOMMUNER

Filter

New data item

Category

- KOM_KOD - 290
- KOMMUNNAMN - 290

Measure

- FeatureID
- Frequency
- SEGMENT
- seqno
- X
- Y

Aggregated Measure

- Frequency Percent

New Geographic Data Provider

CAS table

Server: cas-shared-default

Library: Public

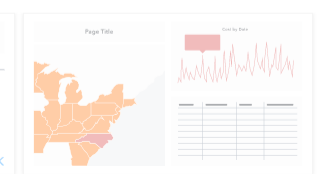
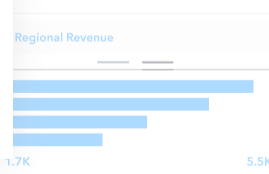
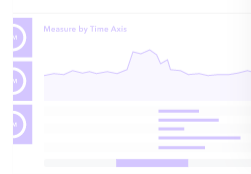
Table: SVERIGE_KOMMUNER

ID Column: FeatureID

Sequence Column: seqno


> Advanced

OK Cancel



I mitt fall är FeatureID är den gemensamma nyckeln mellan mitt data och shapefilen

FeatureID är standardnamnet i shapefilen



KOM_KOD	KOMMUNNAMN	FeatureID	Frequency	SEGMENT	seqno	X	
0114	Upplands-Väsby	121	1	1	43771	17,99221858	59,458862585
0114	Upplands-Väsby	121	1	1	43873	17,970808042	59,548815668
0114	Upplands-Väsby	121	1	1	43736	18,000772613	59,526020582
0114	Upplands-Väsby	121	1	1	43831	17,811156964	59,536409103
0114	Upplands-Väsby	121	1	1	43791	17,882379558	59,490555161
0114	Upplands-Väsby	121	1	1	43739	18,008886713	59,522516882
0114	Upplands-Väsby	121	1	1	43841	17,852954147	59,567341134
0114	Upplands-Väsby	121	1	1	43806	17,840570297	59,484684749
0114	Upplands-Väsby	121	1	1	43741	18,01385609	59,523375937
0114	Upplands-Väsby	121	1	1	43855	17,891202592	59,552864808
0114	Upplands-Väsby	121	1	1	43761	17,997832915	59,480184683

Geografisk koppling i VA

Editing

Data

SVERIGE_KOMMUNER

Filter

+ New data item

Category

- KOM_KOD - 290
- KOMMUNNAMN - 290

Geography

- Geographic Item 1 - 290

Measure

- FeatureID
- Frequency
- SEGMENT
- seqno
- X
- Y

Aggregated Measure

- Frequency Percent

Edit Geography Item

Name:
Geographic Item 1

Based on:
KOMMUNNAMN

Geography data:
Geographic data provider


Geographic data provider:*
SverigesKommuer

Region ID:*
FeatureID

Latitude (y):
Choose column

Longitude (x):
Choose column

100 % mapped



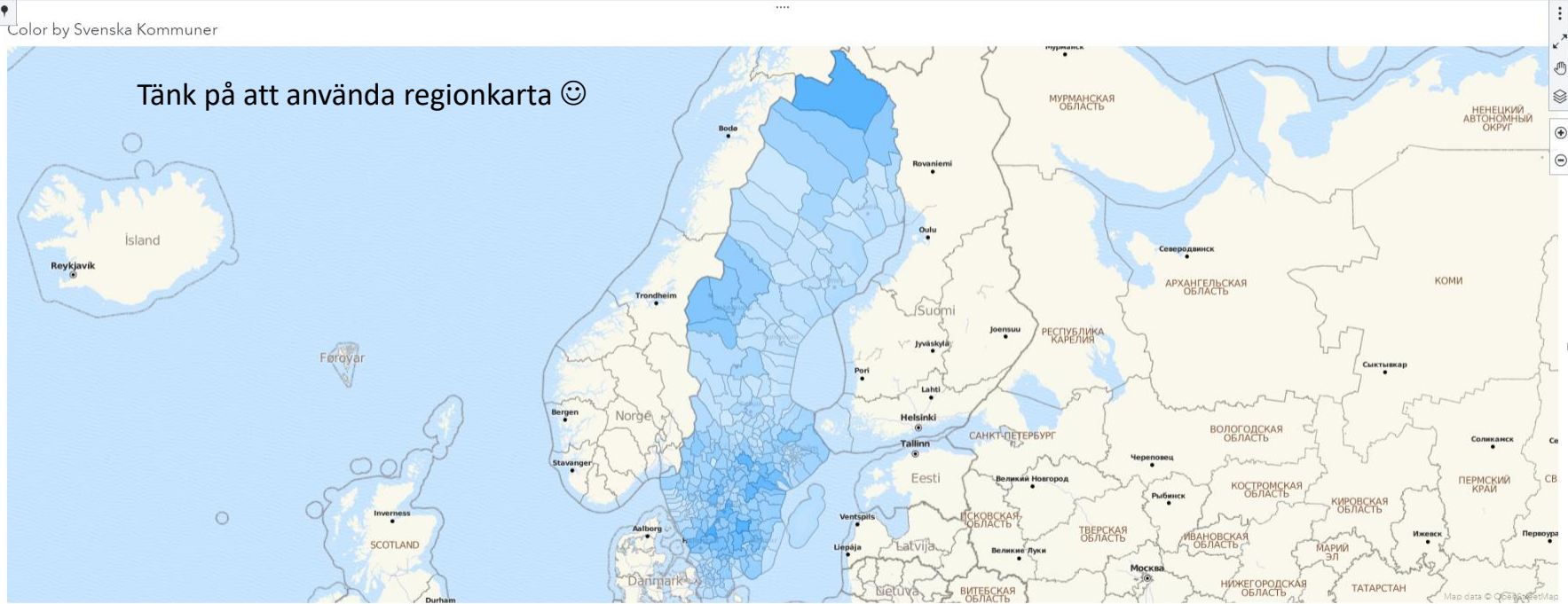
Map data © OpenStreetMap

OK Cancel

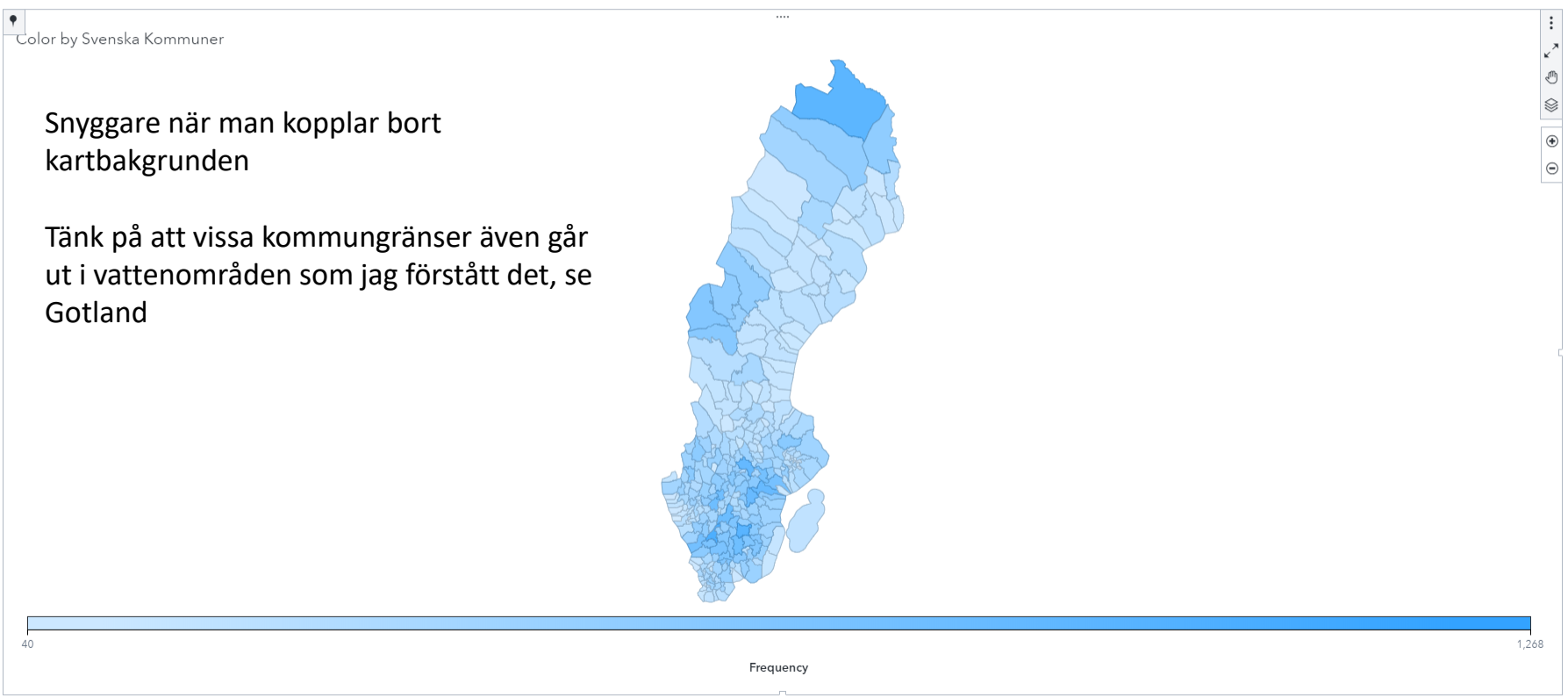
Report 1

Editing

Page 1



Frequency



Lite inspiration



VISUAL ANALYTICS NYHETER I VIYA 4

Top 10

Carl-Olow Magnusson
Nordic Senior Visualization Advisor



SAS Visual Analytics on Viya 4

New release cycle and cadence

Stable version

- Monthly release for Viya applications, i.e. SAS Visual Analytics
- New features and improvements
- Version number structure, i.e. 2021.2.1

Long-term support version

- Every six months
- Equivalent to the stable version that is released two months before
- Version number structure, i.e. 2021.2

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```
What's New
├─ What's New in SAS Visual Analytics
│  ├─ Long-Term Support Releases
│  │   2021.1 (May 2021)
│  │   2020.1 (November 2020)
│  └─ Stable Releases
│     2021.1.4 (August 2021)
│     2021.1.3 (July 2021)
│     2021.1.2 (June 2021)
│     2021.1.1 (May 2021)
│     2020.1.5 (April 2021)
│     2020.1.4 (March 2021)
│     2020.1.3 (February 2021)
│     2020.1.2 (January 2021)
│     2020.1.1 (December 2020)
```

SAS Visual Analytics

6 months before

VA on Viya 4 news

SAS Visual Analytics (2020.1 / Nov 2020)

- Report Review
- SAS Conversation Designer

SAS Visual Analytics (2020.1.1 / Dec 2020)

- Improvements in export to Excel
- Search in Filters
- Geo support in Automated Explanation
- Import Pages

SAS Visual Analytics (2020.1.3 / Feb 2021)

- Custom page templates
- Automated Explanation and Automated Prediction, now available in five new European languages: German, French, Spanish, Italian, and Polish

SAS Visual Analytics (2020.1.4 / March 2021)

- Catch outliers in your data with automated anomaly detection
- Automated explanation, now available in Nordic languages: Swedish, Norwegian and Danish
- Usability enhancements

SAS Visual Analytics (2020.1.5 / April 2021)

- Job Content Object – object using SAS Job Execution jobs
- Explain the data in any object (with outlier detection)
- Table enhancements - display row numbers for both list tables and crosstabs
- General Enhancements
 - Select all/clear selection action button in list control object
 - Other minor stuff

SAS Visual Analytics (2021.1.1 / May 2021)

- Gauge object enhancements
- Key value object enhancements
- General enhancements (worth mentioning)
 - When you play animation in an object, the animation date or time value is displayed
 - You can disable zoom and pan controls in geomap objects

SAS Visual Analytics (2021.1.2 / June 2021)

- New Progressive Web App (PWA) functionality
- New geo line and geo line-coordinate objects
- General enhancements (worth mentioning)
 - You can now assign a date format or a datetime format to a calculated data item
 - Date and datetime values can now be used as a number in calculated expressions
 - New Min and Max quick calculations are available for date and datetime values

VA on Viya 4 news

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2021.1.4 (August 2021)

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SAS Visual Analytics (2021.1.1 / May 2021)

- Enhancements
- Table enhancements
- Table enhancements (worth mentioning)
 - Play animation in an object, the animation date or time value is displayed
 - Adjustable zoom and pan controls in geomap objects

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Mer information hittar du här 😊

https://go.documentation.sas.com/doc/en/vacdc/v_008/drivewlcm/home.htm

Här är min Top 10 lista

#10 – Small things matters

Using dates in calculations without converting them

List control object

Built-in search fields

Filter

Select all

Argentina

Australia

Brazil

Chile

China

Colombia

Denmark

Egypt

Filter

Clear selection

Argentina

Australia

Brazil

Chile

Colombia

Denmark

Egypt

Select all/clear built-in

Why is this important?

- Requested by VA customers around the world 😊

Transaction Date - Facility Opening Date)

low numbers in list table/crosstab, perfect

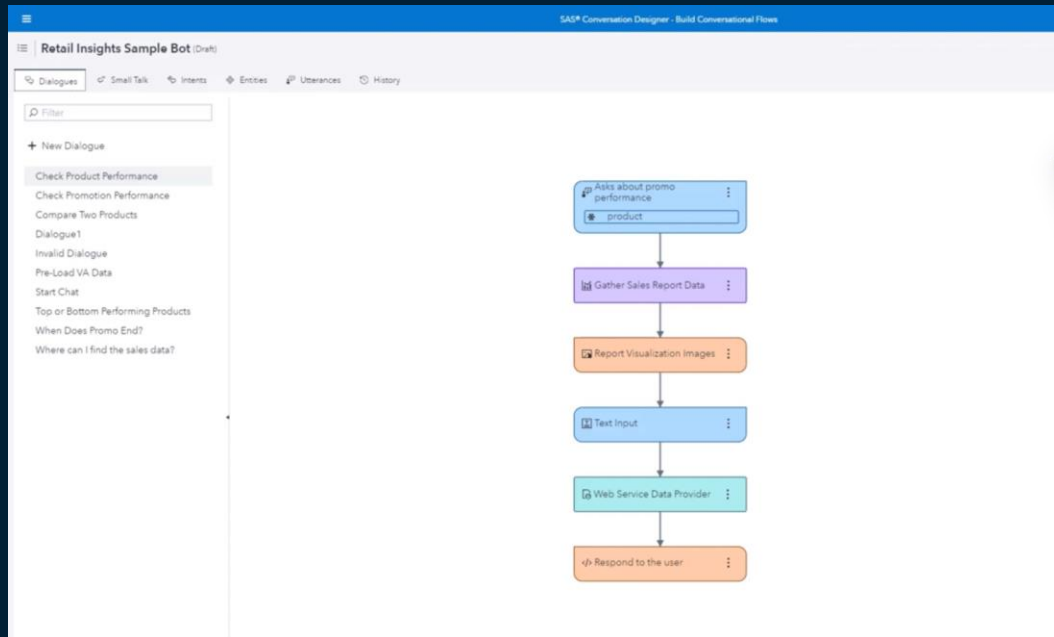
Customer	Total Order Amount
ARBUENOS000007484	939
ARBUENOS000007487	968
ARBUENOS000010170	1014
ARBUENOS000013153	917
ARBUENOS000026347	859
ARBUENOS000037483	1186
ARBUENOS000037599	958
ARBUENOS000037604	849
ARBUENOS000037683	895
ARBUENOS000037876	961

Filter info when exporting to Excel

REGION_GEO	STATE_GEO	CITY_GEO	Adverse capital ratio	Exposure amount
		Cottonwood	9%	\$476,259
	ARIZONA	Green Valley	16%	\$1,739,966
		Munds Park	11%	\$735,877
		Sun City West	30%	\$1,669,214



#9 - SAS Conversation Designer



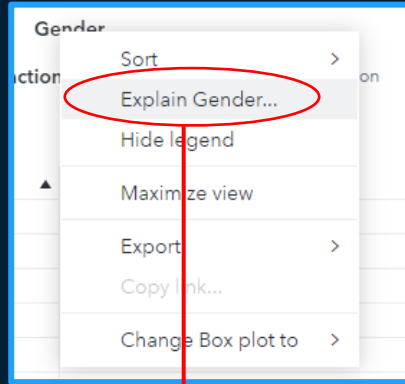
- Basic Design (VA features only)
- Advance Design (VDDML & VTA)

Why is this important?

- New component/ feature in SAS Viya
- Build custom, natural language chatbots through an intuitive, visual interface – low to no coding needed
- Access data, reports and visualizations through chat
- More possibilities with other SAS Viya products, such as VTA



#8 Explain data in any object



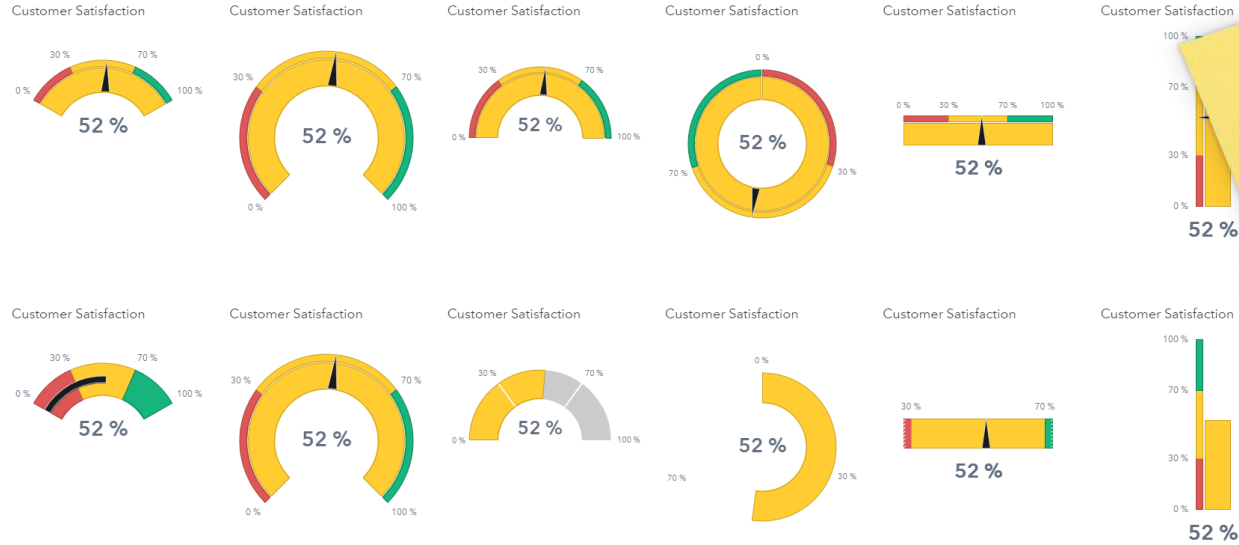
Explaining Gender

Female is the most common value representing 60.27% (581 of 964) of Gender. Another common value is Male (at 39.73%). The three most related factors are First Product Ordered, Customer Distance, and First Order Product Quality.

Why is this important?

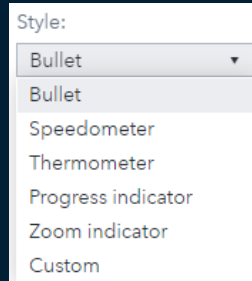
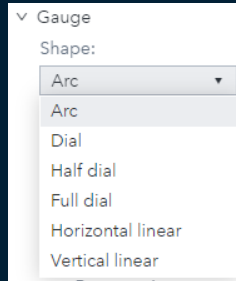
- Another smart feature added to VA
- More insights and value to end-users
- Both categories and numeric data
- Available both in view and design/analyze mode
- Includes outlier detection
- Available in Nordic languages

#7 - Gauge object enhancements

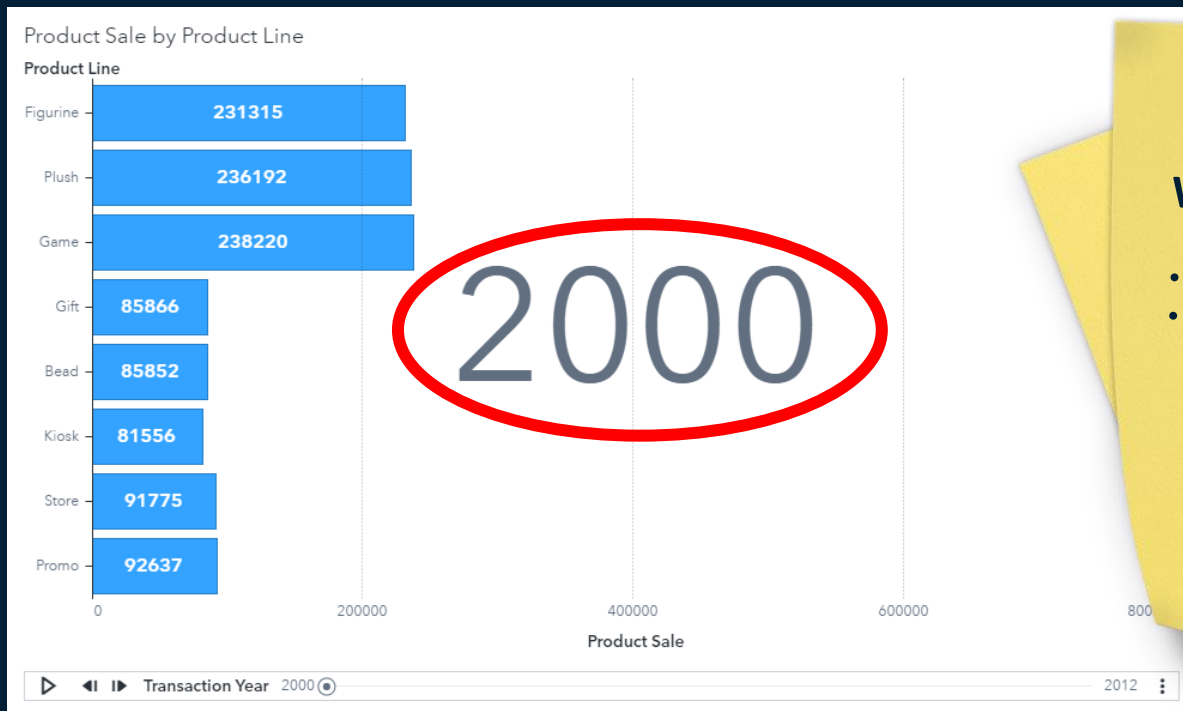


Why is this important?

- More gauge display options (6 x 6 + Skins)
- Much cleaner appearance



#6 – Display date/time in animated objects



Why is this important?

- Animation date/time is clearer
- Requested by Hans Rosling (RIP) (at SAS Forum 2012 in Sweden)

#5 – Embed data with Visual Analytics SDK



Embedded Insights

Visual Analytics SDK – *Publish with embedded insights*



Publish: Take snapshots of insights + data from Visual Analytics



Share: Distribute Visual Analytics packages to website



Scale: Deliver Visual Analytics content with no SAS Viya

- Visualizations and data are hosted behind your web server.
- No end-user requests are made to SAS Viya.



Update: Refresh data as needed.

- Update insights on your website.
- Include multiple data snapshots to enable **data story telling**

Why is this important?

- Now we can package VA content with data
- No SAS Viya server connection needed

#SASGF

SAS® GLOBAL FORUM 2021

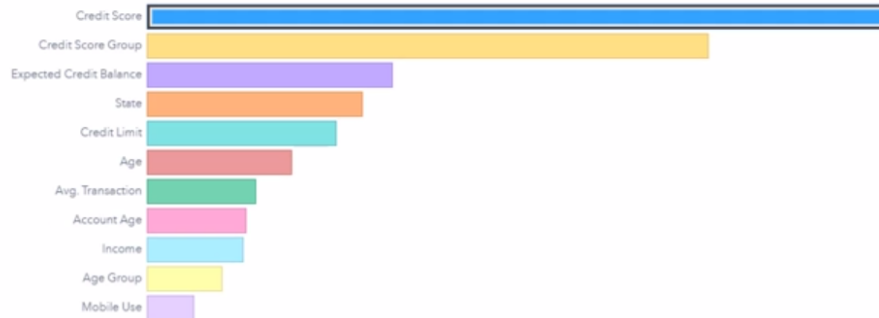
SAS and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc. in the USA and other countries. ® indicates USA registration. Other brand and product names are trademarks of their respective companies.

#4 - Outlier detection

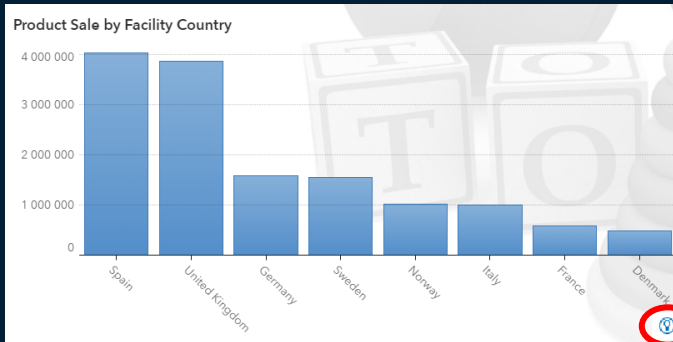
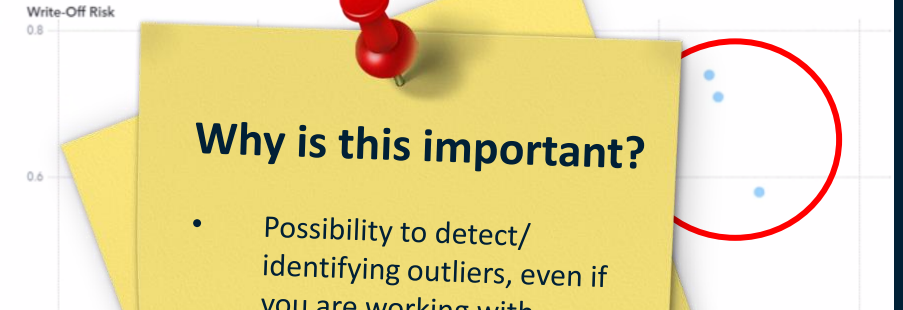
What are the characteristics of Write-Off Risk?

Write-Off Risk ranges from .01 to .74. Average Write-Off Risk is .08. Most cases (411 of 514) have a Write-Off Risk between .02 and .14. Credit Score best differentiates the highest (top 10%) and the lowest (bottom 10%) Write-Off Risk cases. There are three cases that might be outliers, with Write-Off Risk greater than or equal to .58. The three most important factors are Credit Score, Credit Score Group, and Expected Credit Balance.

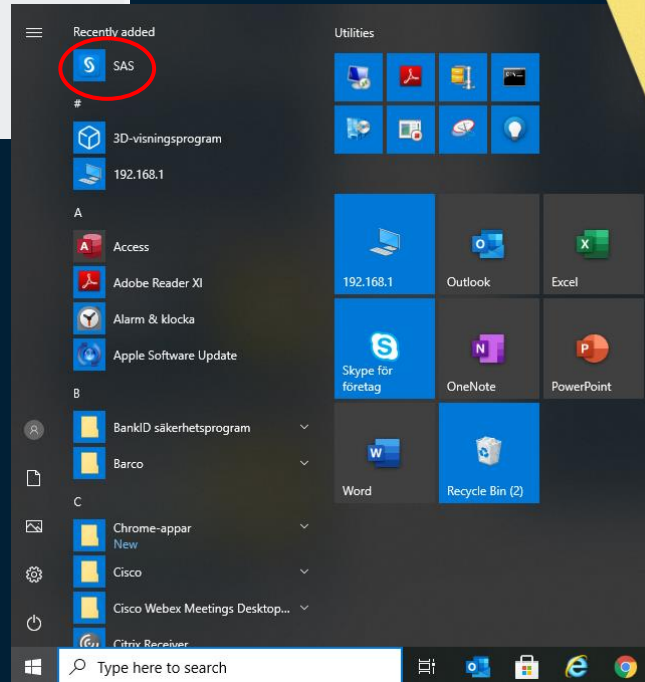
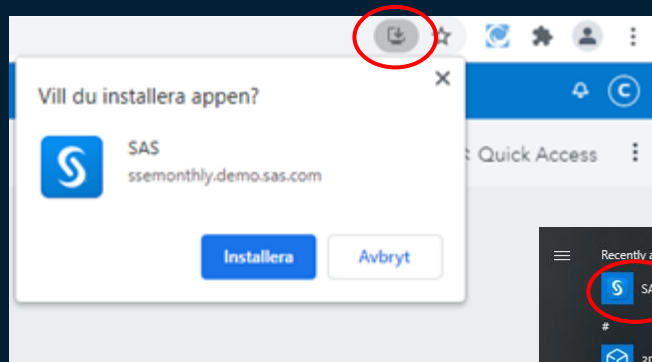
What factors are most related to Write-Off Risk?



What is the relationship between Write-Off Risk and Credit Score?



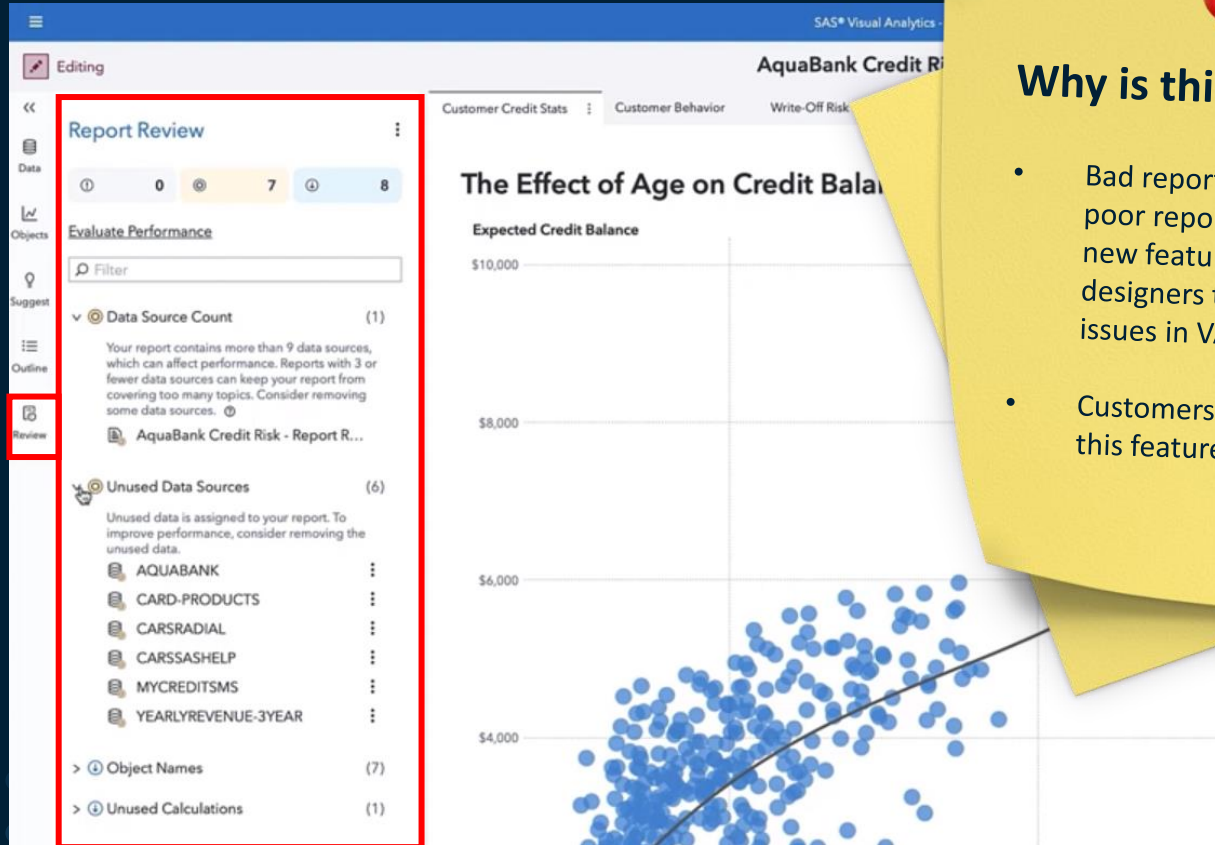
#3 - New Progressive Web App (PWA) functionality



Why is this important?

- Install Viya applications locally
- Faster initial loading time

#2 - Report Review



Why is this important?

- Bad report design can lead to poor report performance. This new feature helps report designers to detect performance issues in VA reports
- Customers have been asking for this feature for a very long time

#1 – Recycling concept in Viya 4

Page Templates

Create page templates with pre-defined look & feel, design layouts for different purposes to speed up report development. Very good approach to introduce new VA developers.

VA Data Views

Re-use calculations, hierarchies, geo mapped data items, parameters, common filters etc.



Import pages from other reports

Import and re-use an entire page from any available report

Save reports objects as templates

Reuse report objects settings/attributes in other reports

SAS Themes

Set your color profile, style elements, application and/or report themes et.

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Why is this important?

- Improved self-service
- Faster report development

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Released

- Automated Explanation and Prediction: Add. EMEA/Nordic Languages
- SAS for Microsoft 365 (Excel): VA Reports
- VA App - viewer customizations
- VA SDK Enhancements
- Embedded Insights (Publish with data*)

2020.1.4

- Automated Explanation and Prediction: EMEA Languages
- Total/Subtotal per column in tabular objects
- User defined Page Templates
- Geo: ISO 3-letter Codes
- VA-SDK enhancements

2020.1.3

- Change data view - enhanced UX
- Automated Explanation & Prediction: Asian Languages

2020.1.2

- Export to Excel
- Import report pages
- User-define page templates

2020.1.1

- Usability enhancements
- Report review
- Conversation Designer (Chatbot)
- VA SDK support for Report Themes
- Automated Explanation: Geo

2020.1

Now

- Automated Explanation and Prediction: Add. MEA Languages
- Self-Service Explanation Summary on Report objects
- Native SAS Job support
- Log scale

2020.1.5

- Enriched KeyValue object support (links, grid layout, precision control)
- Min/Max Date
- Table objects enhancements
- Automatic Outlier Detection
- Geo polylines
- Improved dense scatter plot display
- Label Thinning
- Enriched Gauge types
- Enriched data animation /display

2021.1.1

Next

- Compact Number precision control
- Automatic Outlier Detection enhancements
- Dynamic Parameters
- Dynamic Reference Lines
- Enriched filters
- Pinned Insights
- VA and Content APIs with SDK
- SAS for Microsoft 365 (Excel): Data
- SAS for Microsoft 365 (PowerPoint): VA Reports
- Text Topics: Custom names for topics
- API and SDK support for Print to PDF
- Smart Charts

2021.2

- Geo Analytics
- VA and Content APIs with SDK
- Annotations
- Automated Data Stories
- Enriched Geo visualization
- SAS for Microsoft 365 (Excel): SAS Jobs
- Smart Collaboration
- Calculation enhancements

2022.1

Future

- Microsoft 365 Add-in: Analytic actions and Models
- Dynamic Comparison
- Wearable Analytics
- Natural Language Query
- Bookmarks
- Mashups
- Streaming/Operational Analytics
- Natural Language Business Interpretability
- Lineage
- Report Content Search and Catalog
- Chatbot VA Integration
- Notifications