NDK_PCA_VAR

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- C/C++
- .Net

```
int __stdcall NDK_PCA_VAR(double ** X,
                          size_t    nXSize,
                          size_t    nXVars,
                          LPBYTE    varMask,
                          size_t    nMaskLen,
                          WORD      standardize,
                          WORD      nVarIndex,
                          WORD      wMacPC,
                          WORD      retType,
                          double *  retVal,
                          size_t    nOutSize
                         )
```

Returns an array of cells for the fitted values of the i-th input variable.

Returns

status code of the operation

Return values

NDK_SUCCESS Operation successful

NDK_FAILED Operation unsuccessful. See **Macros** for full list.

Parameters

[in] **X** is the independent variables data matrix, such that each column represents one variable

[in] **nXSize** is the number of observations (i.e. rows) in X

[in] **nXVars** is the number of variables (i.e. columns) in X

[in] **varMask** is the boolean array to select a subset of the input variables in X. If missing (i.e. NULL), all variables in X are included.

[in] **nMaskLen** is the number of elements in mask

[in] **standardize** is a flag or switch to standardize the input variables prior to the analysis:

1. standardize ((subtract mean and divide by standard deviation)
2. subtract mean.

[in] **nVarIndex** is the input variable number

[in] **wMacPC** is the number of principal components (PC) to include

[in] **retType** is a switch to select the return output:

1. final communality
2. loading/weights

3. fitted values
4. residuals

[out] **retVal** is the calculated value or data
[in] **nOutSize** is the size of retVal

Remarks

1. The PCA_VAR function must be entered as an array formula (for return-types other than 1) in a range that has the rows as the number of variables (return-type = 2) or the number of observations (return-type > 2).
2. The sample data may include missing values.
3. Each column in the input matrix corresponds to a separate variable.
4. Each row in the input matrix corresponds to an observation.
5. Observations (i.e. row) with missing values are removed.
6. The PC_VAR function is available starting with version 1.60 APACHE.

Requirements

Header	SFSDK.H
Library	SFSDK.LIB
DLL	SFSDK.DLL

```
int NDK_PCA_VAR(IntPtr   pXData,
                UIntPtr  nXSize,
                UIntPtr  nXVars,
                byte[]   mask,
                UIntPtr  nMaskLen,
                short    standardize,
                short    nCompIndex,
                short    retType,
                double[] retVal,
                UIntPtr  nOutSize
               )
```

Namespace: NumXLAPI
Class: SFSDK
Scope: Public
Lifetime: Static

Returns an array of cells for the fitted values of the i-th input variable.

Return Value

a value from **NDK_RETCODE** enumeration for the status of the call.

NDK_SUCCESS operation successful

Error Error Code

Parameters

[in] **pXData** is the independent variables data matrix, such that each column represents one variable

[in] **nXSize** is the number of observations (i.e. rows) in pXData

[in] **nXVars** is the number of variables (i.e. columns) in pXData

[in] **mask** is the boolean array to select a subset of the input variables in pXData. If missing (i.e. NULL), all variables in pXData are included.

[in] **nMaskLen** is the number of elements in mask

[in] **standardize** is a flag or switch to standardize the input variables prior to the analysis:

1. standardize ((subtract mean and divide by standard deviation)
2. subtract mean.

[in] **nCompIndex** is the input variable number

[in] **wMacPC** is the number of principal components (PC) to include

[in] **retType** is a switch to select the return output:

1. final communality
2. loading/weights
3. fitted values
4. residuals

[out] **retVal** is the calculated value or data

[in] **nOutSize** is the size of retVal

Remarks

1. The PCA_VAR function must be entered as an array formula (for return-types other than 1) in a range that has the rows as the number of variables (return-type = 2) or the number of observations (return-type > 2).
2. The sample data may include missing values.
3. Each column in the input matrix corresponds to a separate variable.
4. Each row in the input matrix corresponds to an observation.
5. Observations (i.e. row) with missing values are removed.
6. The PC_VAR function is available starting with version 1.60 APACHE.

Exceptions

Exception Type	Condition
None	N/A

Requirements

Namespace	NumXLAPI

Class	SFSDK
Scope	Public
Lifetime	Static
Package	NumXLAPI.DLL

Examples

References

Hamilton, J .D.; Time Series Analysis , Princeton University Press (1994), ISBN 0-691-04289-6

Tsay, Ruey S.; Analysis of Financial Time Series John Wiley & SONS. (2005), ISBN 0-471-690740

See Also

[template("related")]