

# Package ‘SMCRM’

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**Type** Package

**Title** Data Sets for Statistical Methods in Customer Relationship Management by Kumar and Petersen (2012).

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**Description** Data Sets for Kumar and Petersen (2012).  
Statistical Methods in Customer Relationship Management,  
Wiley: New York.

**License** GPL-3

**Collate** 'customerAcquisition.R' 'acquisitionRetention.R'  
'customerChurn.R' 'customerWinBack.R'  
'customerRetentionDemographics.R'  
'customerRetentionLifetimeDuration.R'  
'customerRetentionTransactions.R'

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acquisitionRetention *Acquisition-Retention Data from Chapter 5*

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### Description

Acquisition-Retention Data from Chapter 5

### Usage

```
acquisitionRetention
```

### Format

Data frame with the following 15 variables

customer customer number (from 1 to 500)

acquisition 1 if the prospect was acquired, 0 otherwise

duration number of days the customer was a customer of the firm, 0 if acquisition == 0

profit customer lifetime value (CLV) of a given customer, -(Acq\_Exp) if the customer is not acquired

acq\_exp total dollars spent on trying to acquire this prospect

ret\_exp total dollars spent on trying to retain this customer

acq\_exp\_sq square of the total dollars spent on trying to acquire this prospect

ret\_exp\_sq square of the total dollars spent on trying to retain this customer

freq number of purchases the customer made during that customer's lifetime with the firm, 0 if acquisition == 0

freq\_sq square of the number of purchases the customer made during that customer's lifetime with the firm

crossbuy number of product categories the customer purchased from during that customer's lifetime with the firm, 0 if acquisition = 0

sow Share-of-Wallet; percentage of purchases the customer makes from the given firm given the total amount of purchases across all firms in that category

industry 1 if the customer is in the B2B industry, 0 otherwise

revenue annual sales revenue of the prospect's firm (in millions of dollar)

employees number of employees in the prospect's firm

### Examples

```
data(acquisitionRetention)
str(acquisitionRetention)
```

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customerAcquisition    *Customer Acquisition Data from Chapter 3*

---

**Description**

Customer Acquisition Data from Chapter 3

**Usage**

```
customerAcquisition
```

**Format**

Data frame with the following 17 variables

customer customer number (from 1 to 500)

acquisition 1 if the prospect was acquired, 0 otherwise

first\_purchase dollar value of the first purchase (0 if the customer was not acquired)

clv the predicted customer lifetime value score. It is 0 if the prospect was not acquired or has already churned from the firm.

duration time in days that the acquired prospect has been or was a customer, right-censored at 730 days

censor 1 if the customer was still a customer at the end of the observation window, 0 otherwise

acq\_expense dollars spent on marketing efforts to try and acquire that prospect

acq\_expense\_sq square of dollars spent on marketing efforts to try and acquire that prospect

industry 1 if the customer is in the B2B industry, 0 otherwise

revenue annual sales revenue of the prospect's firm (in millions of dollar)

employees number of employees in the prospect's firm

ret\_expense dollars spent on marketing efforts to try and retain that customer

ret\_expense\_sq square of dollars spent on marketing efforts to try and retain that customer

crossbuy the number of categories the customer has purchased

frequency the number of times the customer purchased during the observation window

frequency\_sq the square of the number of times the customer purchased during the observation window

**Examples**

```
data(customerAcquisition)
str(customerAcquisition)
```

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`customerChurn`*Customer Churn Data from Chapter 6*

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**Description**

Customer Churn Data from Chapter 6

**Usage**`customerChurn`**Format**

Data frame with the following 11 variables

`customer` customer number (from 1 to 500)`duration` time in days that the acquired prospect has been or was a customer, right-censored at 730 days`censor` 1 if the customer was still a customer at the end of the observation window, 0 otherwise`avg_ret_exp` average number of dollars spent on marketing efforts to try and retain that customer per month`avg_ret_exp_sq` square of the average number of dollars spent on marketing efforts to try and retain that customer per month`total_crossbuy` total number of categories the customer has purchased during the customer's lifetime`total_freq` total number of purchase occasions the customer had with the firm in the customer's lifetime`total_freq_sq` square of the total number of purchase occasions the customer had with the firm in the customer's lifetime`industry` 1 if the customer is in the B2B industry, 0 otherwise`revenue` annual sales revenue of the prospect's firm (in millions of dollar)`employees` number of employees in the prospect's firm**Examples**

```
data(customerChurn)
str(customerChurn)
```

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`customerRetentionDemographics`*Demographics Data for Customer Retention (Chapter 4)*

---

**Description**

Demographics Data for Customer Retention (Chapter 4)

**Usage**`customerRetentionDemographics`**Format**

Data frame with the following 8 variables

`customer` customer number (from 1 to 500)`gender` 1 if the customer is male, 0 if the customer is female`married` 1 if the customer is married, 0 if the customer is not married`income` 1 if  $\text{income} < \$30,000$  2 if  $\$30,001 < \text{income} < \$45,000$  3 if  $\$45,001 < \text{income} < \$60,000$  4 if  $\$60,001 < \text{income} < \$75,000$  5 if  $\$75,001 < \text{income} < \$90,000$  6 if  $\text{income} > \$90,001$ `first_purchase` value of the first purchase made by the customer in quarter 1`loyalty` 1 if the customer is a member of the loyalty program, 0 if not`sow` share-of-wallet; the percentage of purchases the customer makes from the given firm given the total amount of purchases across all firms in that category`clv` discounted value of all expected future profits, or customer lifetime value**Examples**

```
data(customerRetentionDemographics)
str(customerRetentionDemographics)
```

---

`customerRetentionLifetimeDuration`*Lifetime Duration Data for Customer Retention (Chapter 4)*

---

**Description**

Lifetime Duration Data for Customer Retention (Chapter 4)

**Usage**`customerRetentionLifetimeDuration`

**Format**

Data frame with the following 8 variables

customer customer number (from 1 to 500)

x The number of transactions by a given customer over all time periods. Here we assume that it is the sum of the variable Purchase where customers at most made 1 purchase per quarter.

tx time of the last transaction, i.e. the last quarter where purchase == 1

T total time between the first purchase and the end of the observation window, i.e. 12 quarters for all customers

**See Also**

customerRetentionTransactions

**Examples**

```
data(customerRetentionLifetimeDuration)
str(customerRetentionLifetimeDuration)
```

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customerRetentionTransactions

*Transactions Data for Customer Retention (Chapter 4)*

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**Description**

Transactions Data for Customer Retention (Chapter 4)

**Usage**

customerRetentionTransactions

**Format**

Data frame with the following 7 variables

customer customer number (from 1 to 500)

quarter quarter (from 1 to 12) where the transactions occurred

purchase 1 when the customer purchased in the given quarter and 0 if no purchase occurred in that quarter

order\_quantity dollar value of the purchases in the given quarter

crossby number of different categories purchased in a given quarter

ret\_expense dollars spent on marketing efforts to try and retain that customer in the given quarter

ret\_expense\_sq square of dollars spent on marketing efforts to try and retain that customer in the given quarter

**Examples**

```
data(customerRetentionTransactions)
str(customerRetentionTransactions)
```

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customerWinBack	<i>Customer Win-Back from Chapter 7</i>
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**Description**

Customer Win-Back from Chapter 7

**Usage**

```
customerWinBack
```

**Format**

Data frame with the following 10 variables

customer customer number (from 1 to 500)

reacquire 1 if the customer is reacquired, 0 if not

duration\_2 time in days of the customer's second lifecycle with the company, 0 if not reacquired

slcv CLV of the customer in the second lifecycle

duration\_1 time in days of the customer's first lifecycle with the company

offer value of the offer provided to the customer for reacquisition

duration\_lapse time in days since the customer was lost to when the offer to reacquire was given

price\_change increase (or decrease) in price of the subscription the customer received between the first lifecycle and the second lifecycle, 0 if not reacquired

gender 1 if male, 0 if female

age age in years of the customer at the time of the attempt to reacquire

**Examples**

```
data(customerWinBack)
str(customerWinBack)
```

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