This file describes the variables in the data-set. Meaning it describes the variables in the files:

- *dataset-all.csv*
- *dataset-clean.csv*
- *dataset-clean-post.csv*

Table 1: Survey variables

Variable	Type	Description
Header information		
id	int	A unique id number generated by LimeSurvey
startdate	chr	date time when the subject started the survey
submitdate	chr	date time when the subject completed the survey (NA if never completed)
valid.row	int	1 - valid row (satisfy the valid row criteria and can be used for analysis)
experiment.count	int	count of the number of experiments the subject provided data for.
lastpage	int	last page completed by the subject 1. Informed concent page 2. Demographics and prior experience page 3. Tutorial 4. Model A page (with both comprehension and perceived complexity questions) 5. Model B page (with both comprehension and perceived complexity questions) 6. Compare the two models (variable C.Compare question) 7. CMMN Notation page (Weight.* questions) 8. Final page
Consent	int	Informed Consent question (values: 1-Yes, 2-No, NA)
Tutorial	int	1- if the subject completed the tutorial (question: Completed tutorial?)
Experience	int	if the subject did not completed the tutorial, it get asked if s/he has CMMN experience
Total.Time	num	seconds (total time for survey, tutorial, and informed consent in seconds)
Concent.Time	num	seconds (number of seconds used to read and answer the informed concent question)
Tutorial.Time	num	seconds (number of seconds used to complete the tutorial)
Survey.Time	num	seconds (equal to total time minus consent and tutorial time)
Demographics and prior experience		
Gender	chr	Gender question (values: "M", "F", NA)
Age	int	Age question, values from 18 to 115
Degree	int	1. High School 2. One or more years of University 3. Bachelor degree 4. Master degree 5. PhD

Current role. Multiple choice question:		
Role.count	int	count of the number of roles the subject selected.
Role.R1	int	1 - Market analyst
Role.R2	int	1 - Advise clients on process technology
Role.R3	int	1 - Manager
Role.R4	int	1 - Practitioner (creates process models)
Role.R5	int	1 - Educator (trains clients on modeling technologies)
Role.R6	int	1 - End user of process technology
Role.R7	int	1 - Consultant on process technology
Role.R8	int	1 - University lecturer
Role.R9	int	1 - University student
Role.R10	int	1 - Designer or developer of process technology products
Role.other	chr	text describing other roles
What statements better reflects your current opinion? Multiple choice question:		
Bias.count	int	count of the number of bias the subject selected
Bias.B1	int	1 - Adaptive case management cannot be modeled in advance, NA
Bias.B2	int	1 - Some initial modeling is required for adaptive case management, NA
Bias.B3	int	1 - BPMN is enough to model adaptive case management, NA
Bias.B4	int	1 - BPMN is not enough for adaptive case management, NA
Bias.B5	int	1 - BPMN and CMMN should be merged into a single standard, NA
Bias.B6	int	1 - BPMN and CMMN should be maintained as separate standards, NA
Bias.B7	int	1 - CMMN is irrelevant
Bias.B8	int	1 - BPMN is irrelevant
Bias.B9	int	1 - Both CMMN and BPMN are irrelevant for adaptive case management, NA
Bias.B10	int	1 - I don't know enough about CMNN to answer the question
Bias.other	chr	text containing subject response
IT	int	Work experience in the IT-sector (number of years)
Work	int	Work experience with process (or workflow) models (number of years)
Training	int	Formal training on process (or workflow) modeling (in weeks)
Process model notation used		
Notation.count	int	count of the number of notations the subject selected (Note it also includes "None")
Notation.None	int	1 - None
Notation.BPMN	int	1 - BPMN
Notation.EPC	int	1 - EPC
Notation.UMLAD	int	1 - UML-AD
Notation.UML	int	1 - UML
Notation.CMMN	int	1 - CMMN
Notation.other	chr	Text describing other notations
notation.experience	int	Calculated notation experience, as follows: 1. No notation experience 2. Not using a notation, but has training or experience 3. Uses at least one notation without training or experience 4. Uses at least one notation and has training or experience 5. Uses CMMN without training or experience 6. Uses CMMN plus training or experience

Model A – perceived and comprehension experiments		
A.perceived	int	How easy to understand is this model? 1. Very difficult to understand 2. Difficult to understand 3. Rather difficult to understand 4. Neither difficult nor easy to understand 5. Rather easy to understand 6. Easy to understand 7. Very easy to understand
A.Correct	num	Five questions per model. This variable indicates ow many correct questions the subject answer (values: 1 to 5). Last question may have .25, .50, .75, or 1 value.
A.Time	num	how many seconds the user took to answer the five questions and the perceived complexity question (in seconds)
A.Efficacy	num	calculated as A.Correct divide by 5
A.Efficiency	num	calculated as A.Correct divide by A.Time
iv.A.model	int	independent variable: the model id (1, 2, 3, 4, 5, 6)
iv.A.name	chr	independent variable: name of the model (m1a, m2a, m3a, m4a, m5a, m6a)
iv.A.CC	int	independent variable: calculated value of the CC metric
iv.A.CL	int	independent variable: calculated value of the CL metric
iv.A.CS	int	independent variable: calculated value of the CS metric
iv.A.CAS	int	independent variable: calculated value of the CAS metric
iv.A.CS.SC	int	independent variable: (sub-metric) Number of case plans
iv.A.CS.SS	int	independent variable: (sub-metric) Number of stages (non-discretionary)
iv.A.CS.SDS	int	independent variable: (sub-metric) Number of discretionary stages
iv.A.CS.SPF	int	independent variable: (sub-metric) Number of plan fragments
iv.A.CS.DI	int	independent variable: (sub-metric) Number of case file items
iv.A.CS.PT	int	independent variable: (sub-metric) Number of tasks (non-discretionary)
iv.A.CS.PDT	int	independent variable: (sub-metric) Number of discretionary tasks
iv.A.CS.PE	int	independent variable: (sub-metric) Number of event listeners
iv.A.CS.PM	int	independent variable: (sub-metric) Number of milestones
iv.A.CS.OC	int	independent variable: (sub-metric) Number of connectors
iv.A.CAS.DCP	int	independent variable: (sub-metric) Number of collapsed planing table decorators
iv.A.CAS.DEP	int	independent variable: (sub-metric) Number of expanded planing table decorators
iv.A.CAS.DAC	int	independent variable: (sub-metric) Number of auto complete decorators
iv.A.CAS.DC	int	independent variable: (sub-metric) Number of collapsed decorators
iv.A.CAS.DE	int	independent variable: (sub-metric) Number of expanded decorators
iv.A.CAS.DMA	int	independent variable: (sub-metric) Number of manual activation decorators
iv.A.CAS.DRN	int	independent variable: (sub-metric) Number of repetition decorators
iv.A.CAS.DR	int	independent variable: (sub-metric) Number of required decorators

iv.A.CAS.SE	int	independent variable: (sub-metric) Number of entry criteria sentries
iv.A.CAS.SX	int	independent variable: (sub-metric) Number of exit criteria sentries
iv.A.CAS.MH	int	independent variable: (sub-metric) Number of non-blocking human markers
iv.A.CAS.MP	int	independent variable: (sub-metric) Number of process markers
iv.A.CAS.MC	int	independent variable: (sub-metric) Number of case markers
iv.A.CAS.MHB	int	independent variable: (sub-metric) Number of participant markers
iv.A.CAS.MT	int	independent variable: (sub-metric) Number of timer markers

Model B – perceived and comprehension experiments

B.perceived	int	How easy to understand is this model? 1. Very difficult to understand 2. Difficult to understand 3. Rather difficult to understand 4. Neither difficult nor easy to understand 5. Rather easy to understand 6. Easy to understand 7. Very easy to understand
B.Correct	num	Five questions per model. This variable indicates ow many correct questions the subject answer (values: 1 to 5)
B.Time	num	how many seconds the user took to answer the five questions and the perceived complexity question (in seconds)
B.Efficacy	num	calculated as B.Correct divide by 5
B.Efficiency	num	calculated as B.Correct divide by B.Time
iv.B.model	int	independent variable: the model id (1, 2, 3, 4, 5, 6)
iv.B.name	chr	independent variable: name of the model (m1b, m2b, m3b, m4b, m5b, m2a, m3a, m4a, m5a, m6a)
iv.B.CC	int	independent variable: calculated value of the CC metric
iv.B.CL	int	independent variable: calculated value of the CL metric
iv.B.CS	int	independent variable: calculated value of the CS metric
iv.B.CAS	int	independent variable: calculated value of the CAS metric
iv.B.CS.SC	int	independent variable: (sub-metric) Number of case plans
iv.B.CS.SS	int	independent variable: (sub-metric) Number of stages (non-discretionary)
iv.B.CS.SDS	int	independent variable: (sub-metric) Number of discretionary stages
iv.B.CS.SPF	int	independent variable: (sub-metric) Number of plan fragments
iv.B.CS.DI	int	independent variable: (sub-metric) Number of case file items
iv.B.CS.PT	int	independent variable: (sub-metric) Number of tasks (non-discretionary)
iv.B.CS.PDT	int	independent variable: (sub-metric) Number of discretionary tasks
iv.B.CS.PE	int	independent variable: (sub-metric) Number of event listeners
iv.B.CS.PM	int	independent variable: (sub-metric) Number of milestones
iv.B.CS.OC	int	independent variable: (sub-metric) Number of connectors
iv.B.CAS.DCP	int	independent variable: (sub-metric) Number of collapsed planing table decorators
iv.B.CAS.DEP	int	independent variable: (sub-metric) Number of expanded planing table decorators
iv.B.CAS.DAC	int	independent variable: (sub-metric) Number of auto complete decorators

iv.B.CAS.DC	int	independent variable: (sub-metric) Number of collapsed decorators
iv.B.CAS.DE	int	independent variable: (sub-metric) Number of expanded decorators
iv.B.CAS.DMA	int	independent variable: (sub-metric) Number of manual activation decorators
iv.B.CAS.DRN	int	independent variable: (sub-metric) Number of repetition decorators
iv.B.CAS.DR	int	independent variable: (sub-metric) Number of required decorators
iv.B.CAS.SE	int	independent variable: (sub-metric) Number of entry criteria sentries
iv.B.CAS.SX	int	independent variable: (sub-metric) Number of exit criteria sentries
iv.B.CAS.MH	int	independent variable: (sub-metric) Number of non-blocking human markers
iv.B.CAS.MP	int	independent variable: (sub-metric) Number of process markers
iv.B.CAS.MC	int	independent variable: (sub-metric) Number of case markers
iv.B.CAS.MHB	int	independent variable: (sub-metric) Number of participant markers
iv.B.CAS.MT	int	independent variable: (sub-metric) Number of timer markers

Pairwise comparison experiment

C.Compare	int	Compare the two models: Based on your short experience with the two models (A and B), which one is more difficult to understand? 1. A is absolutely more difficult to understand than B 2. A is strongly more difficult to understand than B 3. A is more difficult to understand than B 4. A is slightly more difficult to understand than B 5. A and B are equally difficult to understand 6. B is slightly more difficult to understand than A 7. B is more difficult to understand than A 8. B is strongly more difficult to understand than A 9. B is absolutely more difficult to understand than A
iv.Group	int	independent variable: Value of SetId that matches the value generated by LimeSurvey (30 values)
iv.set	int	independent variable: consolidated sets (15 values) 'a vs b' and 'b vs a' are consolidated into 'a vs b'
iv.order	int	independent variable: indicates the order of consolidation 'a vs b' or 'b vs a' (2 values)
iv.C.obs	chr	independent variable: Comparison that was asked to the subject (for example, m1vs2 or m2vs1). 30 comparisons
iv.C.calc	chr	independent variable: Maps to recalculated comparison (both m1vs2 and m2vs1 become m2vs1). 15 merged comparisons
iv.C.CC	num	independent variable: Value of calculated comparison (using iv.C.calc) for metric CC (compares A vs B, and B vs A)
iv.C.CL	num	independent variable: Value of calculated comparison (using iv.C.calc) for metric CL (compares A vs B, and B vs A)
iv.C.CS	num	independent variable: Value of calculated comparison (using iv.C.calc) for metric CS (compares A vs B, and B vs A)
iv.C.CAS	num	independent variable: Value of calculated comparison (using iv.C.calc) for metric CAS (compares A vs B, and B vs A)
iv.C.order3.CC	num	independent variable: contains three categories $A < B$, $A = B$, or $A > B$, calculated (using iv.C.calc and iv.C.CC) for metric CC

iv.C.order3.CL	num	independent variable: contains three categories $A < B$, $A = B$, or $A > B$, calculated (using iv.C.calc and iv.C.CL) for metric CL
iv.C.order3.CS	num	independent variable: contains three categories $A < B$, $A = B$, or $A > B$, calculated (using iv.C.calc and iv.C.CS) for metric CS
iv.C.order3.CAS	num	independent variable: contains three categories $A < B$, $A = B$, or $A > B$, calculated (using iv.C.calc and iv.C.CAS) for metric CAS
iv.C.order15.CC	num	independent variable: contains fifteen categories $m1 > m2$, $m2 = m3$, $m3 < m4$, etc. Calculated (using iv.C.calc and iv.C.CC) for metric CC
iv.C.order15.CL	num	independent variable: contains fifteen categories $m1 > m2$, $m2 = m3$, $m3 < m4$, etc. Calculated (using iv.C.calc and iv.C.CL) for metric CL
iv.C.order15.CS	num	independent variable: contains fifteen categories $m1 > m2$, $m2 = m3$, $m3 < m4$, etc. Calculated (using iv.C.calc and iv.C.CS) for metric CS
iv.C.order15.CAS	num	independent variable: contains fifteen categories $m1 > m2$, $m2 = m3$, $m3 < m4$, etc. Calculated (using iv.C.calc and iv.C.CAS) for metric CAS

Weights experiment

Weights.count	int	count of weights the subject provided information for.
Weights.CasePlan	int	Which symbols make a CMMN model easy to understand and
Weights.Stage	int	and which symbols make the model difficult to understand.
Weights.DStage	int	For each CMMN
Weights.PlanFrag	int	from 1 (easy to understand) to 8 (very difficult to understand).
Weights.CFileItem	int	Values from 1 to 8, as follows:
Weights.Task	int	
Weights.DTask	int	(Very easy) 1 2 3 4 5 6 7 8 (Very difficult)
Weights.NBHTask	int	
Weights.ProcTask	int	
Weights.CaseTask	int	
Weights.CaseTasknim	int	
Weights.BHTask	int	
Weights.Event	int	
Weights.UserEvent	int	
Weights.TimerEvent	int	
Weights.Milestone	int	
Weights.Connector	int	
Weights.HumanIcon	int	
Weights.CPlanningT	int	
Weights.EPlanningT	int	
Weights.AComplete	int	
Weights.Collapsed	int	
Weights.Expanded	int	
Weights.ManualA	int	
Weights.Repetition	int	
Weights.Required	int	
Weights.EntryCritWC	int	
Weights.EntryCrit	int	
Weights.ExitCritWC	int	
Weights.ExitCrit	int	
Weights.EntryCritAND	int	
Weights.EntryCritOR	int	
Weights.ExitCritAND	int	
Weights.ExitCritOR	int	

Other variables		
Charity	chr	The charity the subject want to donate
Charity.other	chr	a url containing the web page of the charity the subject select to donate