

1 Appendix

We selected 11 activity labels from BPIC 2019 and 11 labels from BPIC 2013 event logs as detailed in Tables 1 and 2, respectively. Additionally, Details of Injected Sets are shown in Table 3.

Table 1. Eleven candidate activity labels of BPIC 2019 event log selected for injection

Activity Label	Total number of events	Total number of users	Total number of human users	Total number of system users	Total number of events for human users	Total number of events for system users
Record Goods Receipt	314097	256	246	10	229063	85034
Create Purchase Order Item	251734	185	177	8	232511	19223
Create Purchase Requisition Item	46592	233	226	7	36355	10237
Cancel Goods Receipt	3096	111	105	6	2604	492
SRM: Awaiting Approval	1628	13	11	2	194	1434
Record Invoice Receipt	228760	31	29	2	219288	9472
Clear Invoice	186452	24	23	0	186452	0
Remove Payment Block	57136	12	10	2	41694	15442
Receive Order Confirmation	32065	10	8	2	27369	4696
Change Quantity	21449	166	165	1	21447	2
Change Price	12423	134	314	0	12423	0

Table 2. Eleven candidate activity labels of BPIC 2013 event log selected for injection

Activity Label	Total number of events	Total number of users
Accepted + In Progress	30,239	1215
Queued + Awaiting Assignment	11,544	1121
Completed + Resolved	6,115	855
Completed + Closed	5,716	47
Accepted + Wait - User	4,217	580
Accepted + Assigned	3,221	428
Completed + In Call	2,035	188
Accepted + Wait	1,533	321
Accepted + Wait - Implementation	493	191
Accepted + Wait - Vendor	313	121
Accepted + Wait - Customer	101	66

Table 3. Synonymous and Distorted Sets for BPIC 2019 and 2013

Label	Synonymous or Distorted Set
BPIC 2019	
Label 3, Synonymous	["Create Purchase Requisition Item", "Initiate Purchase Request", "Add Purchase Request Item", "Log New Requisition Item"]
Label 5, Synonymous	["SRM: Awaiting Approval", "SRM: Under Review", "SRM: Pending Decision", "SRM: Approval in Process"]
Label 1, Distorted	["Record Goods Receipt", "Record Goods Reciept", "Record Good Receipt", "Record Goods Receit"]
Label 3, Distorted	["Create Purchase Requisition Item", "Create Purchse Requisition Item", "Create Purchase Requisition Item-", "Create Purchase Requisition Item"]
Label 9, Distorted	["Receive Order Confirmation", "Receive Order Confirmations", "Re-cieve Order Confirmation", "Receive Order Confermation"]
BPIC 2013	
Label 5, Synonymous	["Accepted + Wait - User", "Approval Pending – Staff", "Request Approved by Agent", "Confirmed Later User"]
Label 1, Distorted	["Accepted + In Progress", "Accepte + In Progress", "Accept + In Progress", "Accepted + In Progres"]
Label 3, Distorted	["Completed + Resolved", "Complete + Resolved", "Completed + Resolve", "Compleat + Resolv"]
Label 11, Distorted	["Accepted + Wait - Customer", "Accepte + Wait - Customer", "Accept + Wait - Customer", "Accepted + Wait - Customers"]