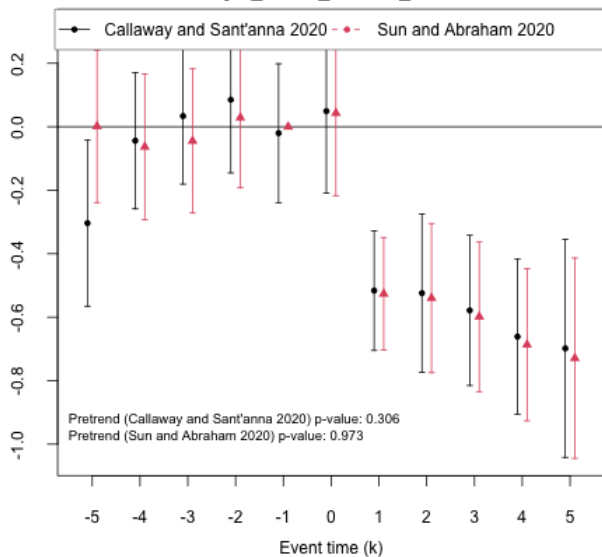
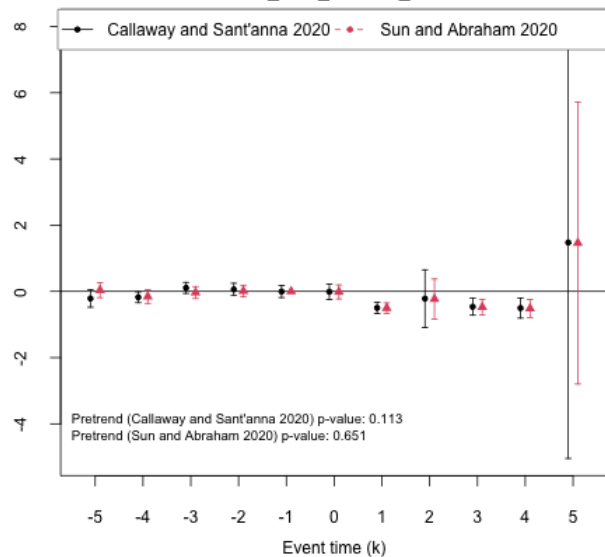


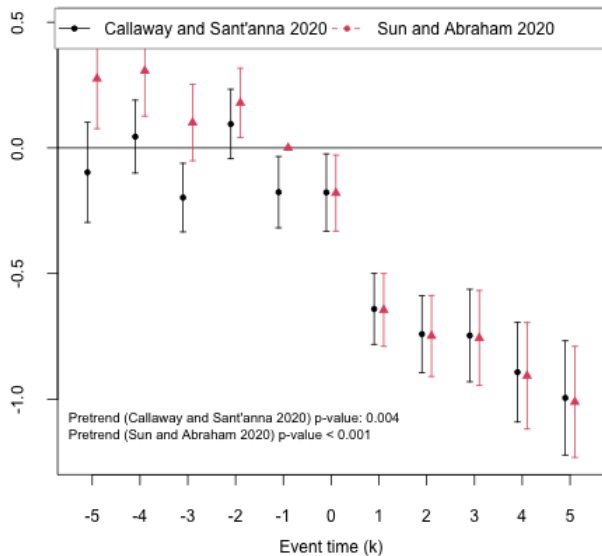
major\_minor\_release\_count



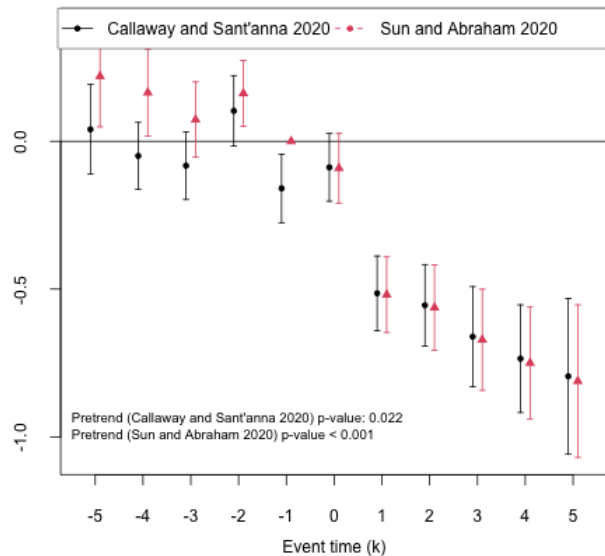
overall\_new\_release\_count



pull\_request\_merged



pull\_request\_opened

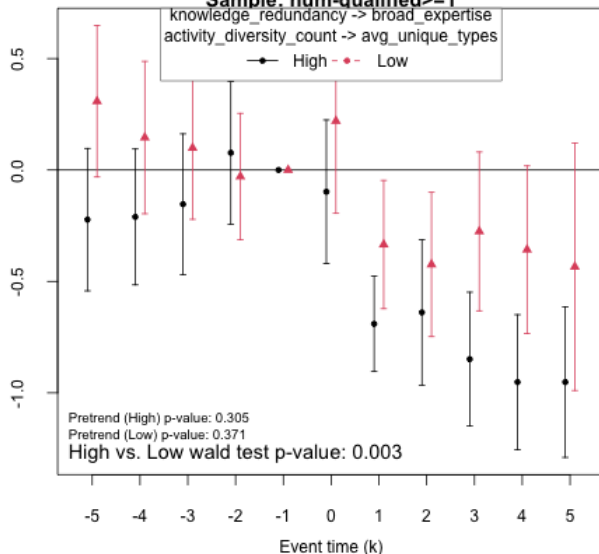


major\_minor\_release\_count rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy -> broad\_expertise  
activity\_diversity\_count -> avg\_unique\_types

—●— High —●— Low

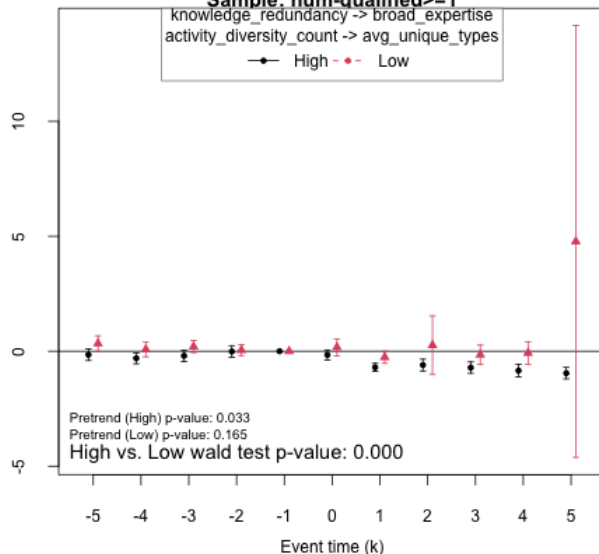


overall\_new\_release\_count rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy -> broad\_expertise  
activity\_diversity\_count -> avg\_unique\_types

—●— High —●— Low

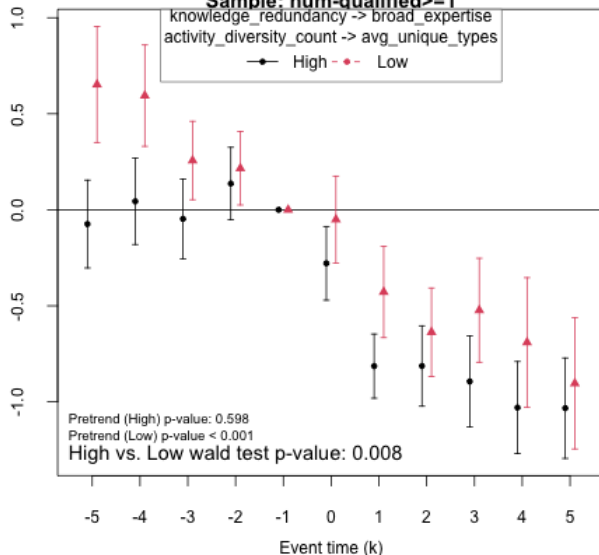


pull\_request\_merged rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy -> broad\_expertise  
activity\_diversity\_count -> avg\_unique\_types

—●— High —●— Low

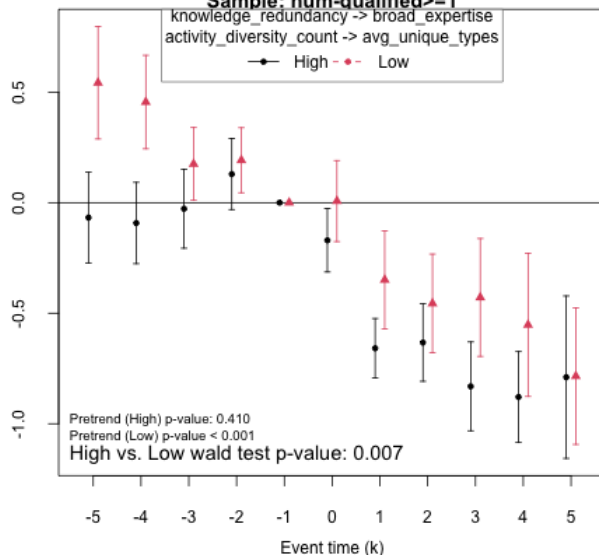


pull\_request\_opened rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy -> broad\_expertise  
activity\_diversity\_count -> avg\_unique\_types

—●— High —●— Low



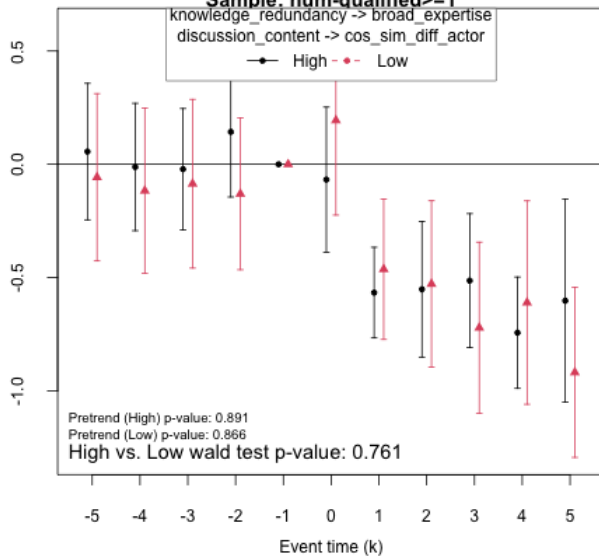
major\_minor\_release\_count rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy-&gt;broad\_expertise

discussion\_content-&gt;cos\_sim\_diff\_actor

—●— High —●— Low



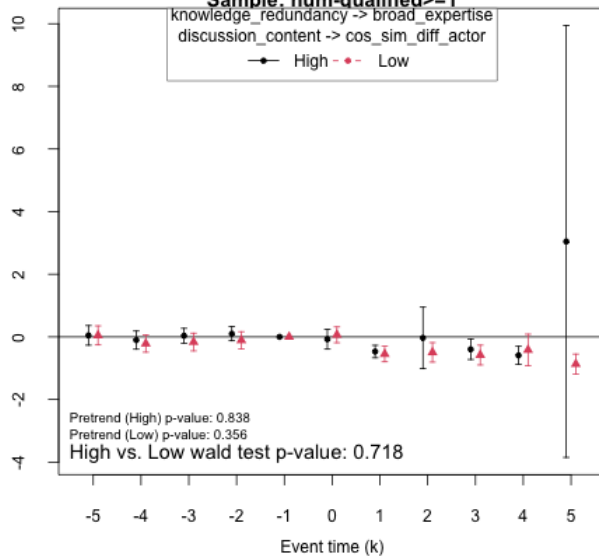
overall\_new\_release\_count rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy-&gt;broad\_expertise

discussion\_content-&gt;cos\_sim\_diff\_actor

—●— High —●— Low



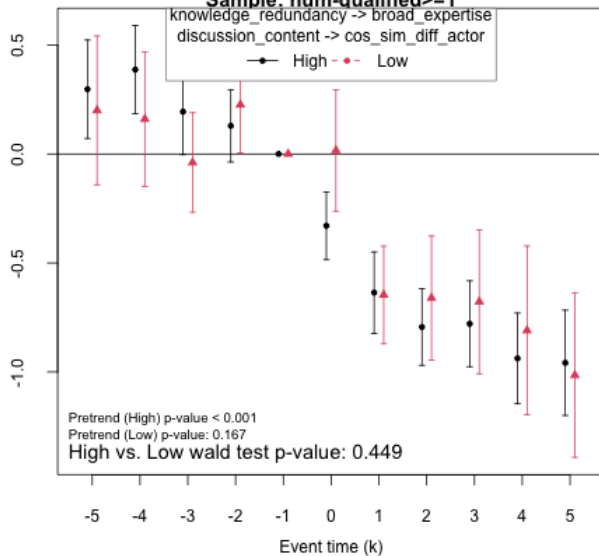
pull\_request\_merged rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy-&gt;broad\_expertise

discussion\_content-&gt;cos\_sim\_diff\_actor

—●— High —●— Low



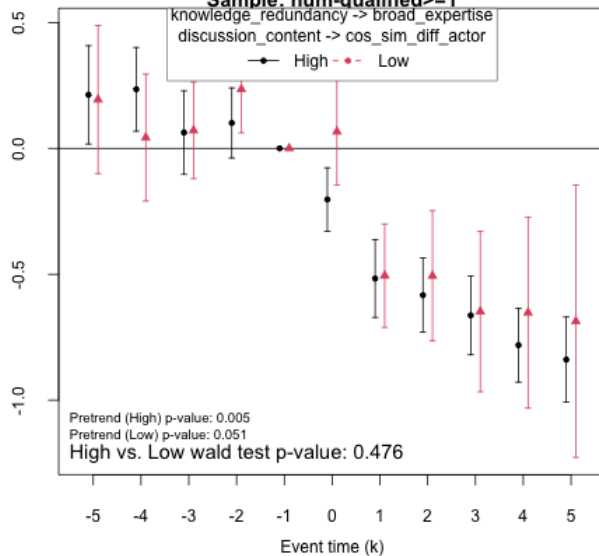
pull\_request\_opened rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy-&gt;broad\_expertise

discussion\_content-&gt;cos\_sim\_diff\_actor

—●— High —●— Low

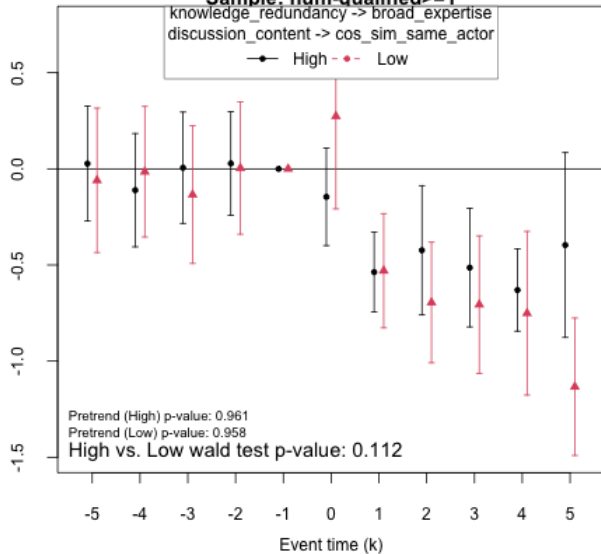


major\_minor\_release\_count rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy->broad\_expertise  
discussion\_content->cos\_sim\_same\_actor

—●— High —●— Low

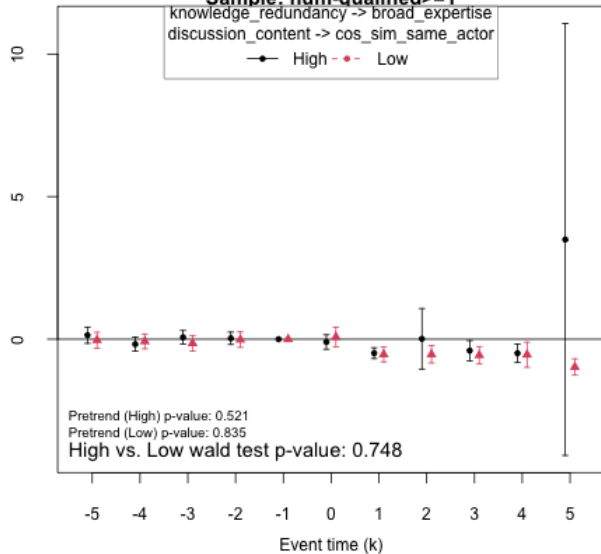


overall\_new\_release\_count rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy->broad\_expertise  
discussion\_content->cos\_sim\_same\_actor

—●— High —●— Low

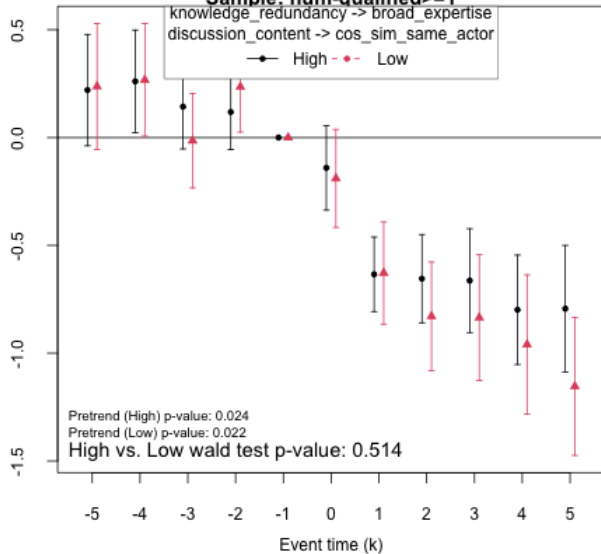


pull\_request\_merged rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy->broad\_expertise  
discussion\_content->cos\_sim\_same\_actor

—●— High —●— Low

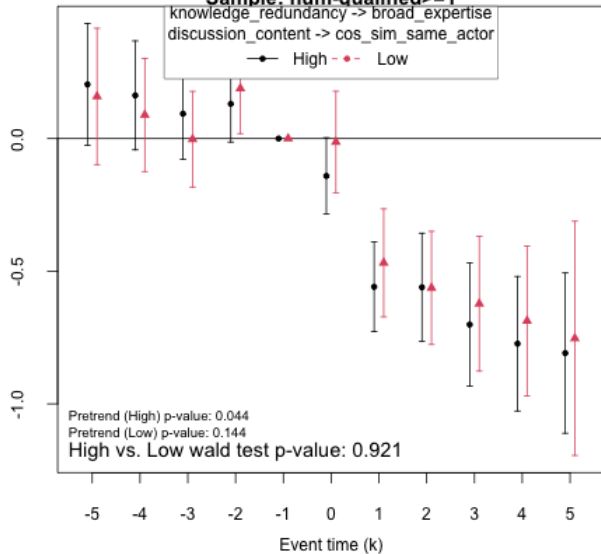


pull\_request\_opened rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy->broad\_expertise  
discussion\_content->cos\_sim\_same\_actor

—●— High —●— Low



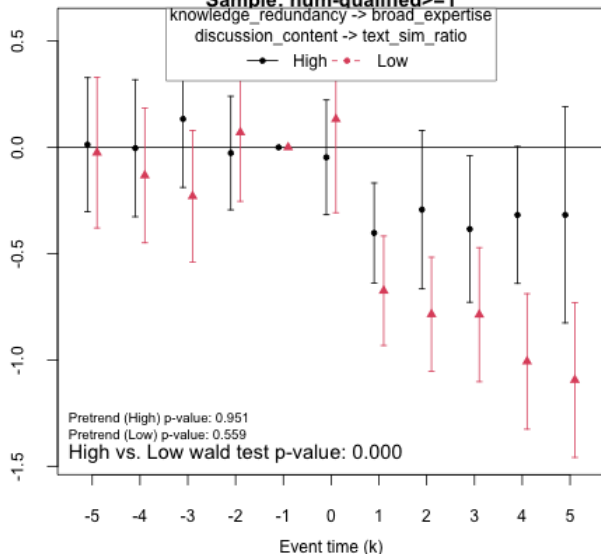
major\_minor\_release\_count\_rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy-&gt;broad\_expertise

discussion\_content-&gt;text\_sim\_ratio

● High - ● Low



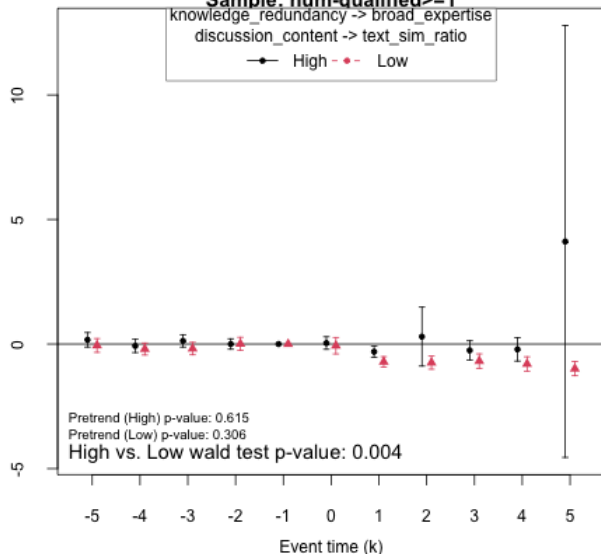
overall\_new\_release\_count\_rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy-&gt;broad\_expertise

discussion\_content-&gt;text\_sim\_ratio

● High - ● Low



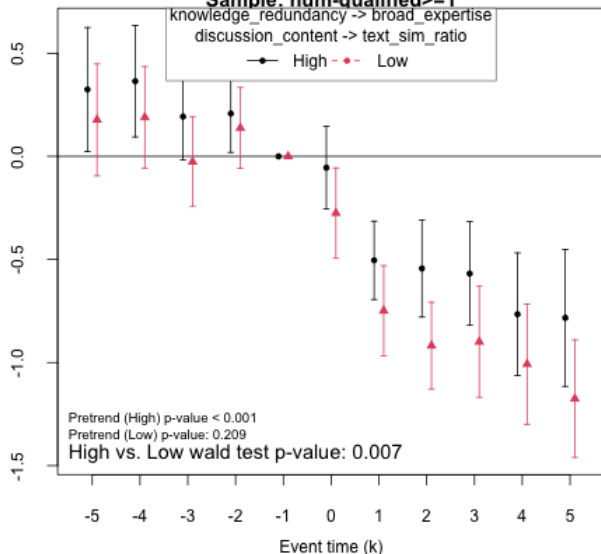
pull\_request\_merged\_rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy-&gt;broad\_expertise

discussion\_content-&gt;text\_sim\_ratio

● High - ● Low



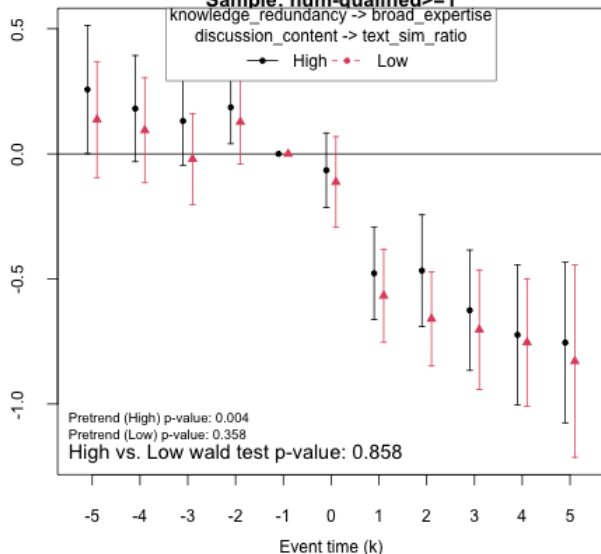
pull\_request\_opened\_rolling5

Sample: num-qualified&gt;=1

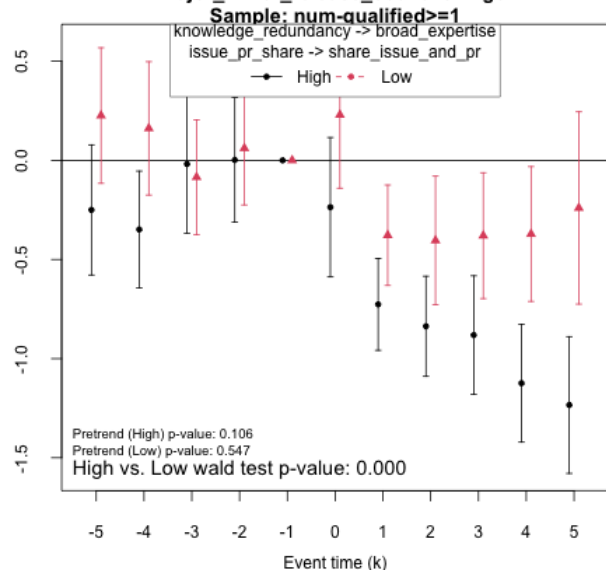
knowledge\_redundancy-&gt;broad\_expertise

discussion\_content-&gt;text\_sim\_ratio

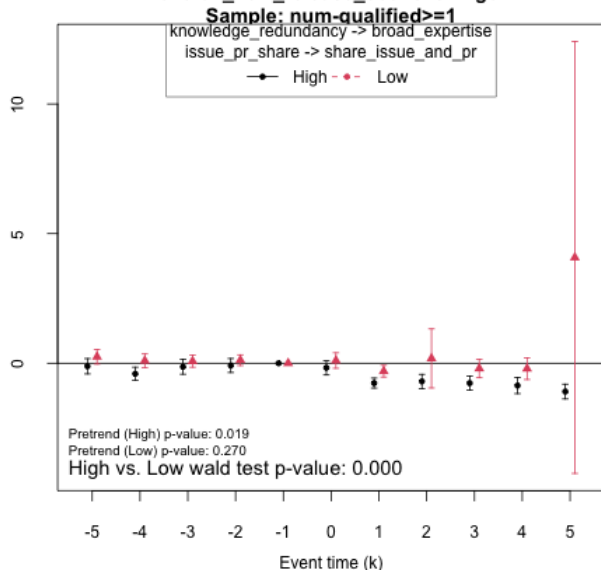
● High - ● Low



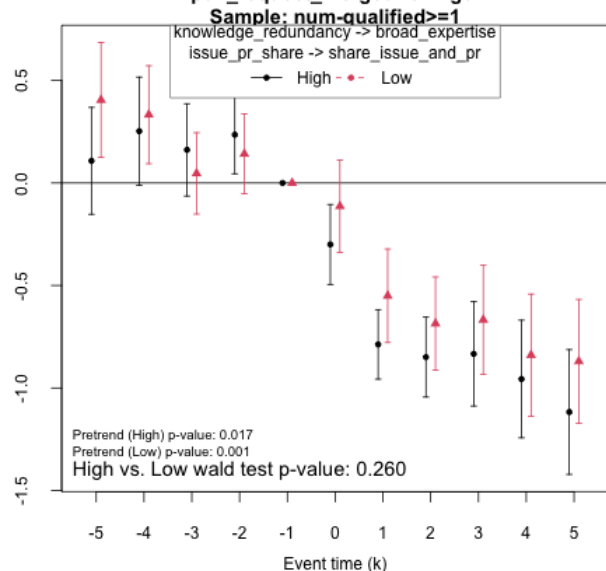
major\_minor\_release\_count rolling5



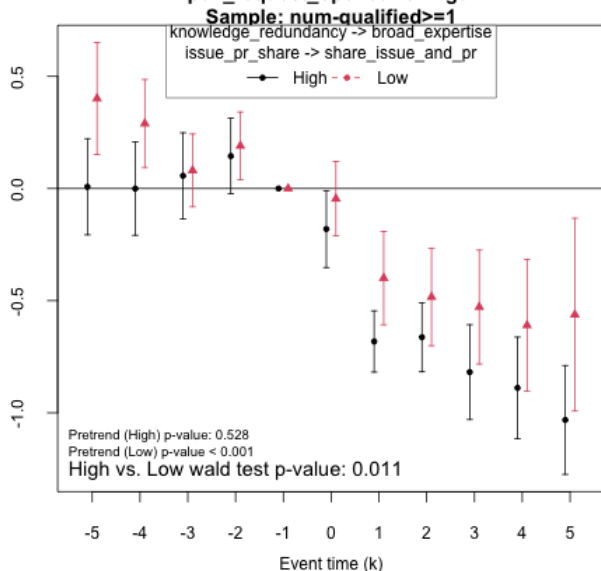
overall\_new\_release\_count rolling5



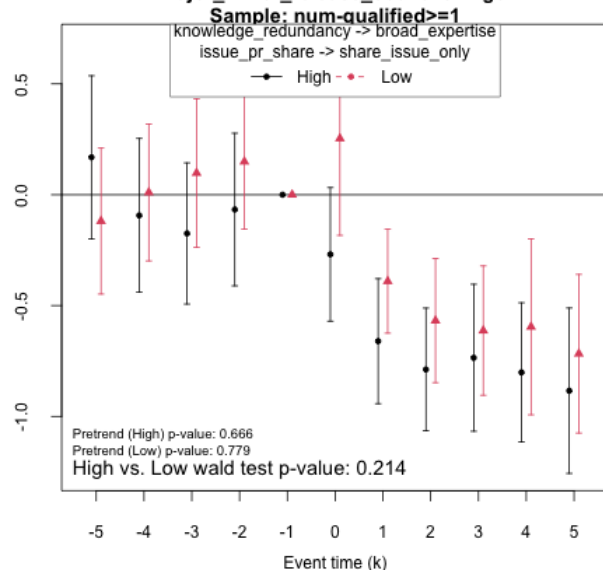
pull\_request\_merged rolling5



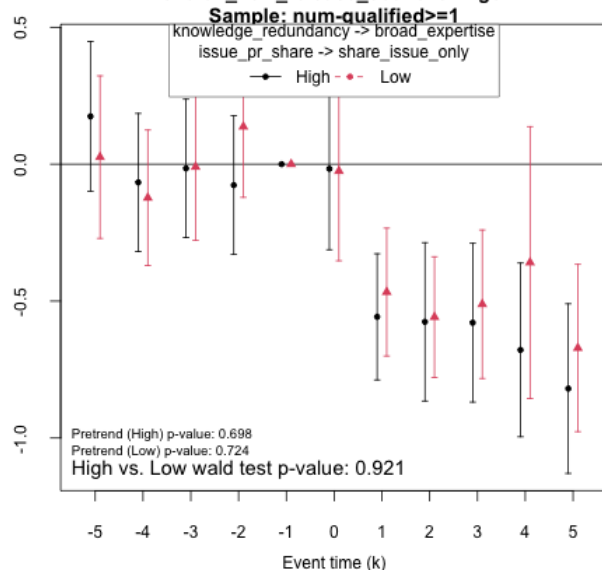
pull\_request\_opened rolling5



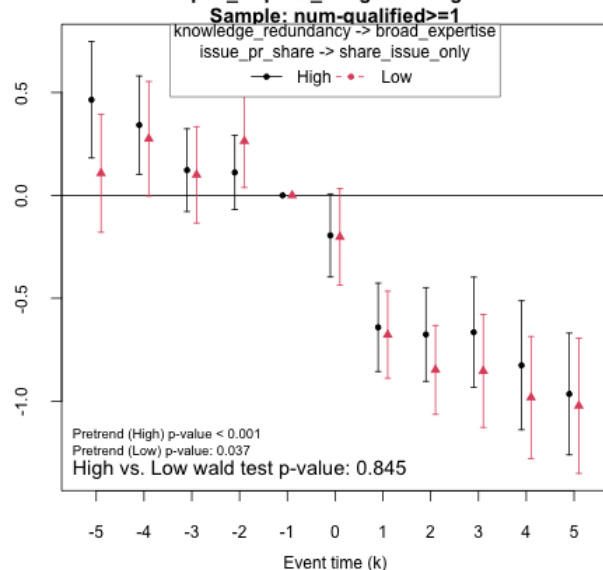
major\_minor\_release\_count rolling5



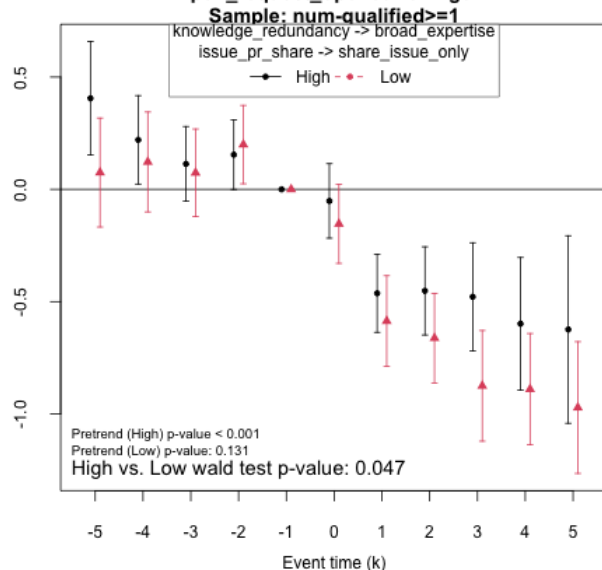
overall\_new\_release\_count rolling5



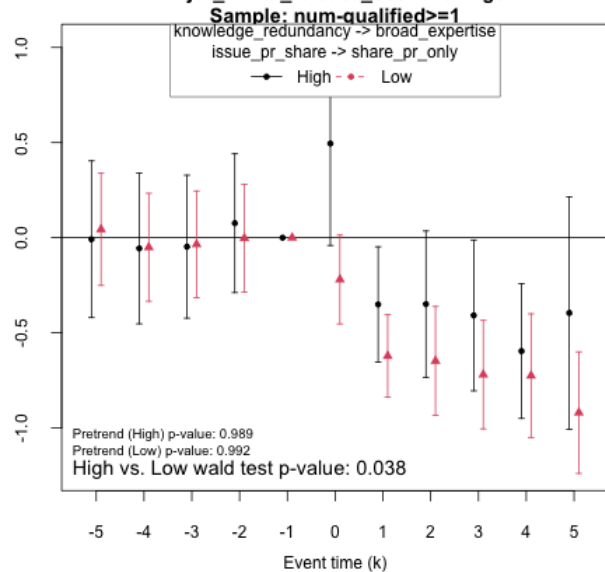
pull\_request\_merged rolling5



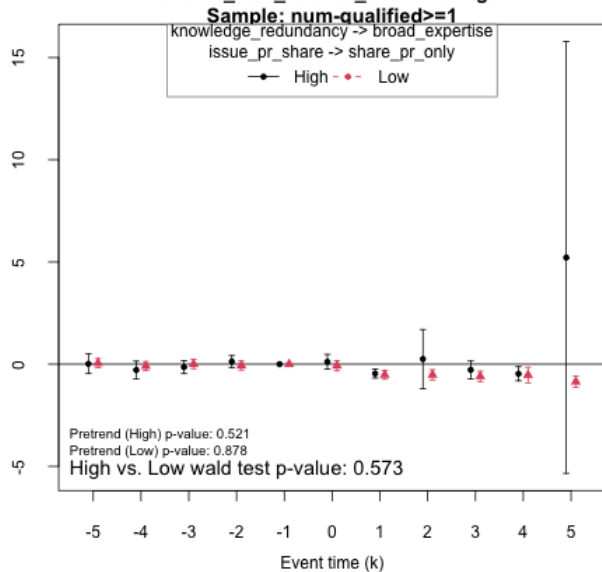
pull\_request\_opened rolling5



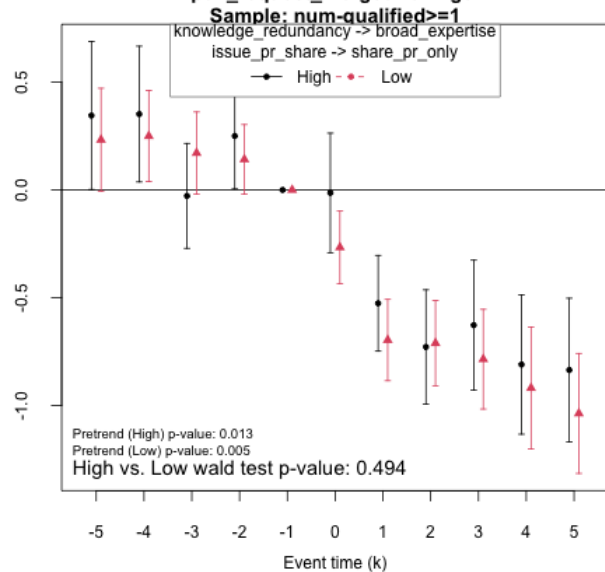
major\_minor\_release\_count rolling5



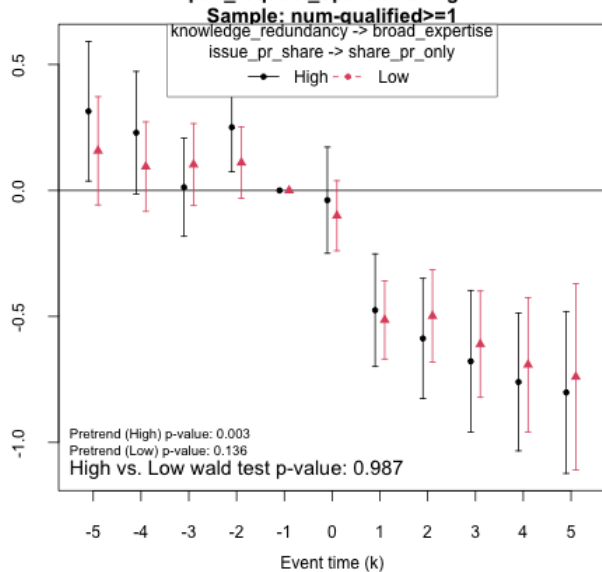
overall\_new\_release\_count rolling5



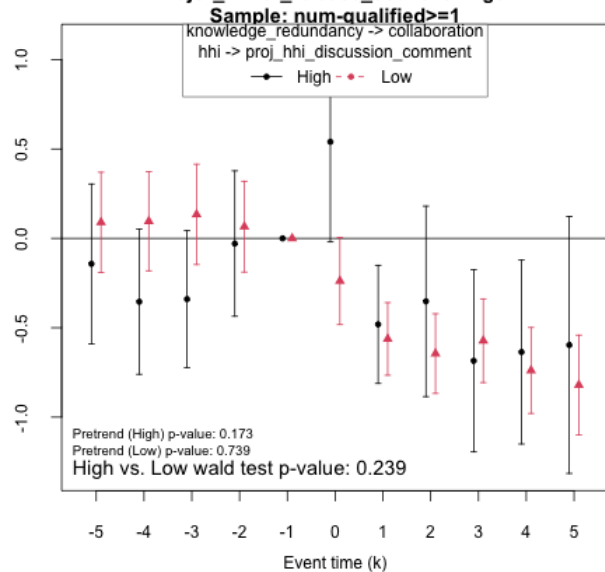
pull\_request\_merged rolling5



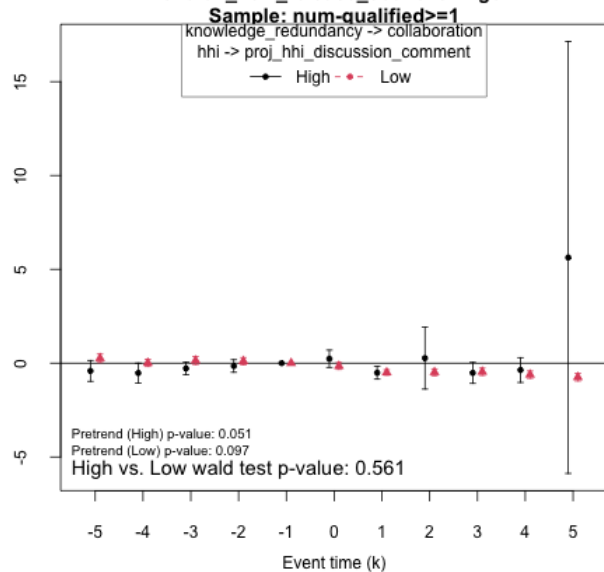
pull\_request\_opened rolling5



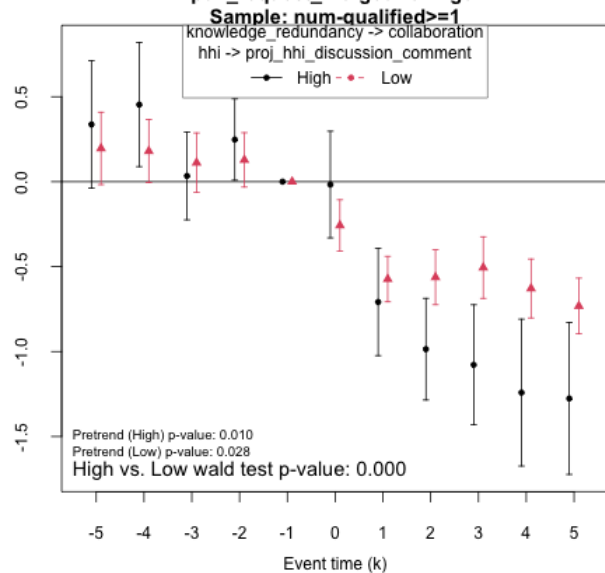
major\_minor\_release\_count rolling5



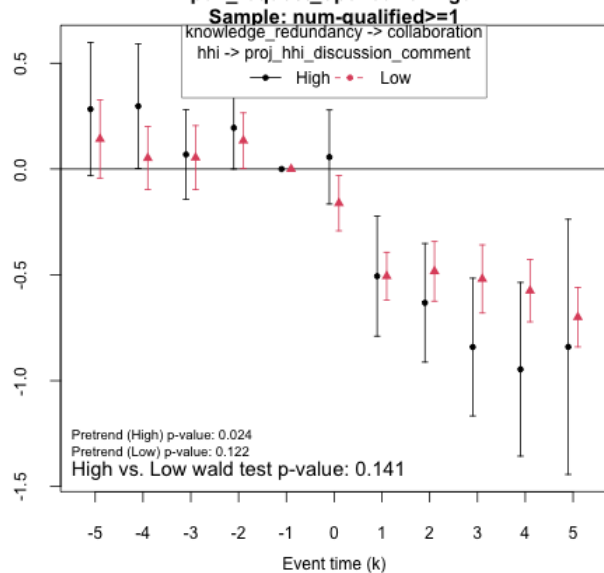
overall\_new\_release\_count rolling5



pull\_request\_merged rolling5



pull\_request\_opened rolling5



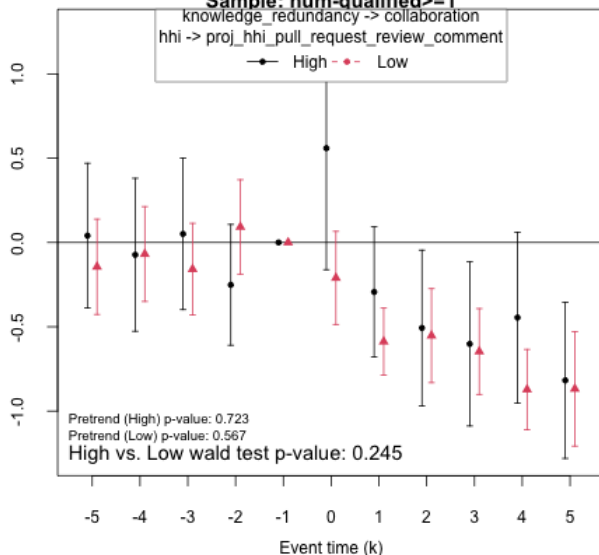
major\_minor\_release\_count\_rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy -&gt; collaboration

hhi -&gt; proj\_hhi\_pull\_request\_review\_comment

—●— High —●— Low



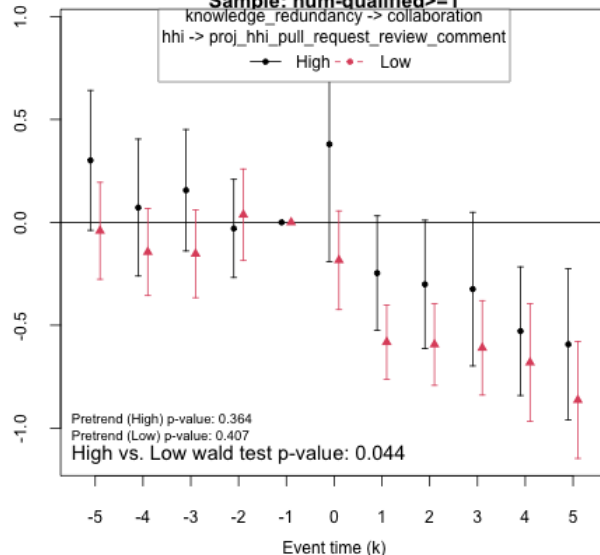
overall\_new\_release\_count\_rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy -&gt; collaboration

hhi -&gt; proj\_hhi\_pull\_request\_review\_comment

—●— High —●— Low



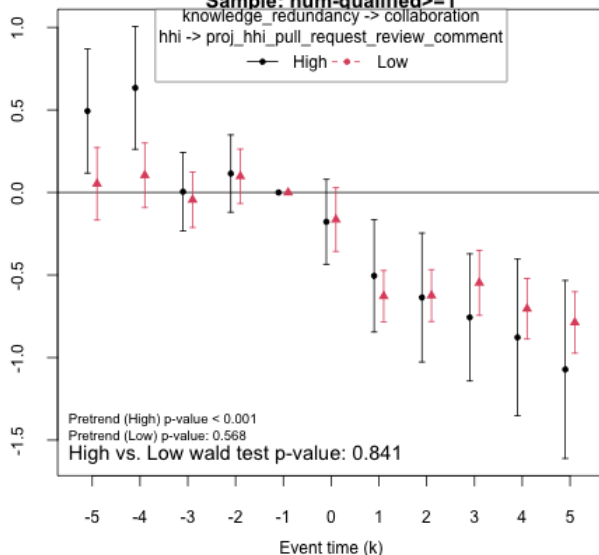
pull\_request\_merged\_rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy -&gt; collaboration

hhi -&gt; proj\_hhi\_pull\_request\_review\_comment

—●— High —●— Low



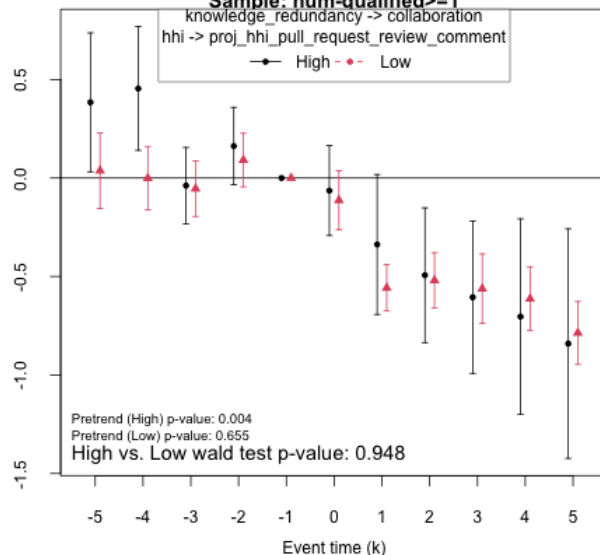
pull\_request\_opened\_rolling5

Sample: num-qualified&gt;=1

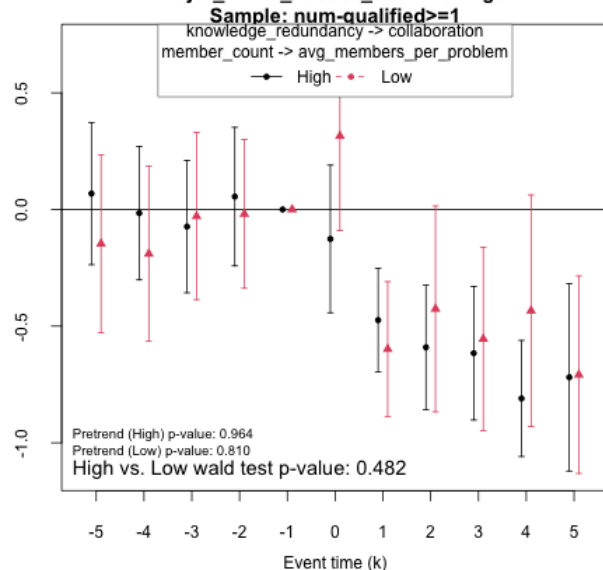
knowledge\_redundancy -&gt; collaboration

hhi -&gt; proj\_hhi\_pull\_request\_review\_comment

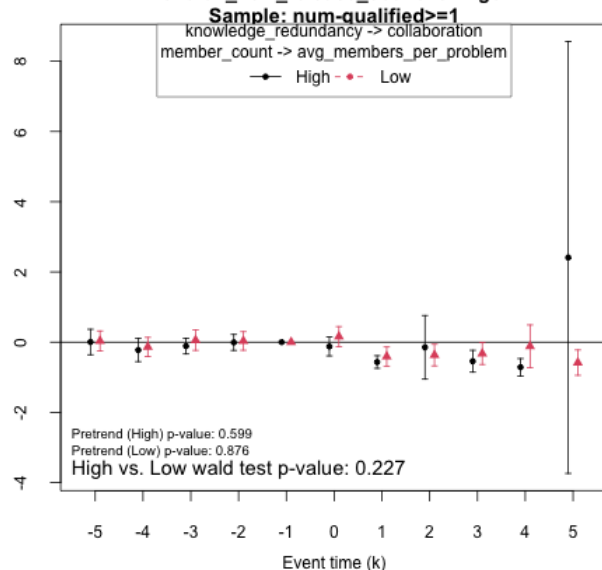
—●— High —●— Low



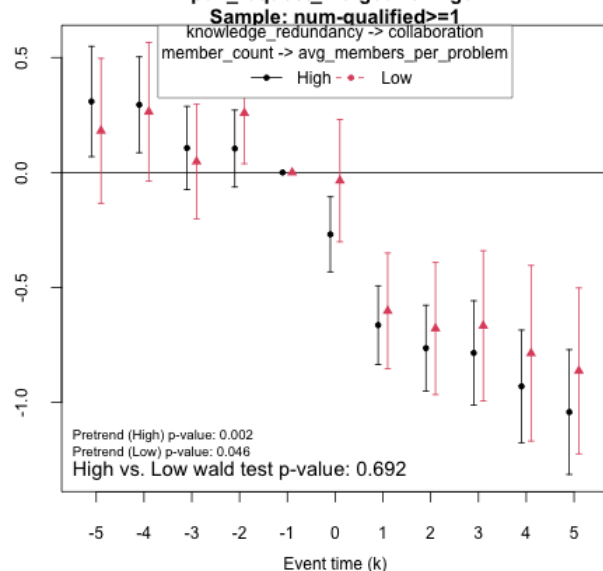
major\_minor\_release\_count rolling5



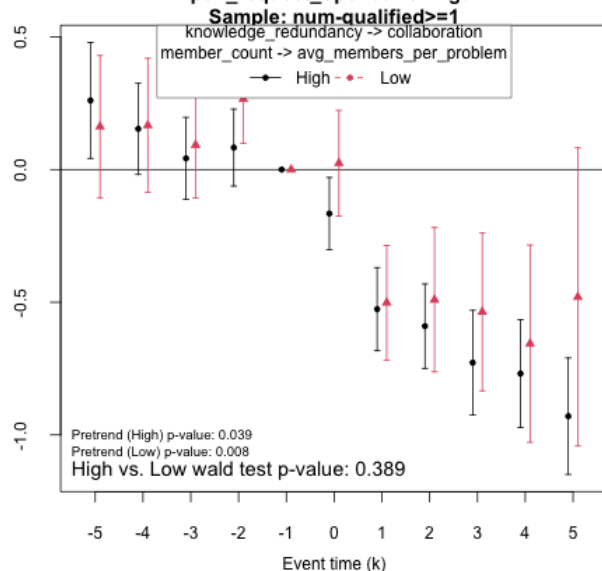
overall\_new\_release\_count rolling5



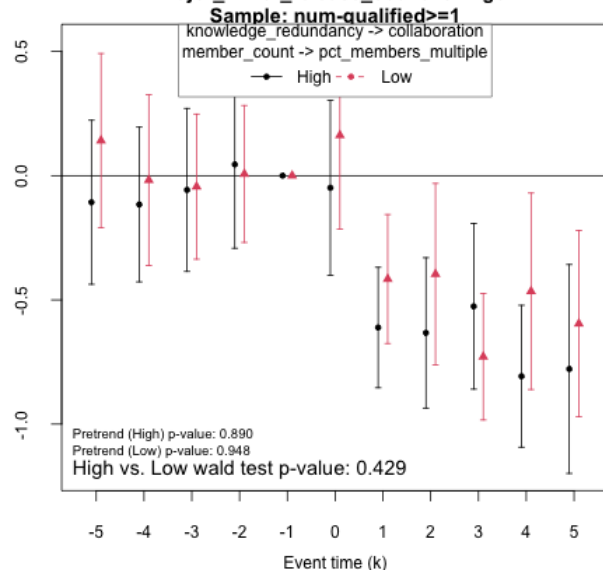
pull\_request\_merged rolling5



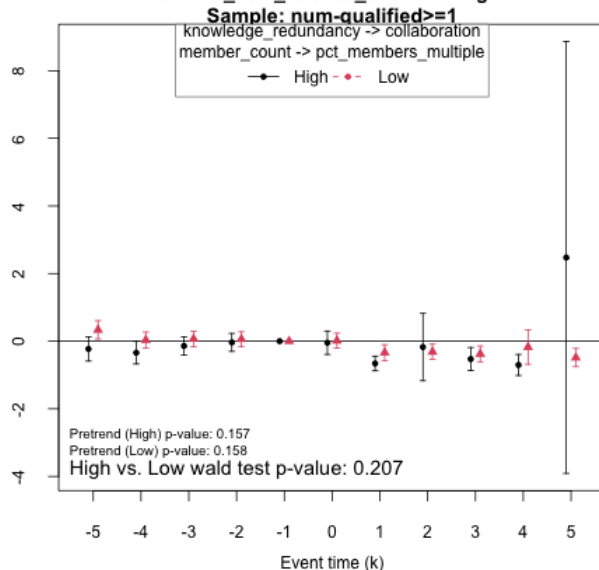
pull\_request\_opened rolling5



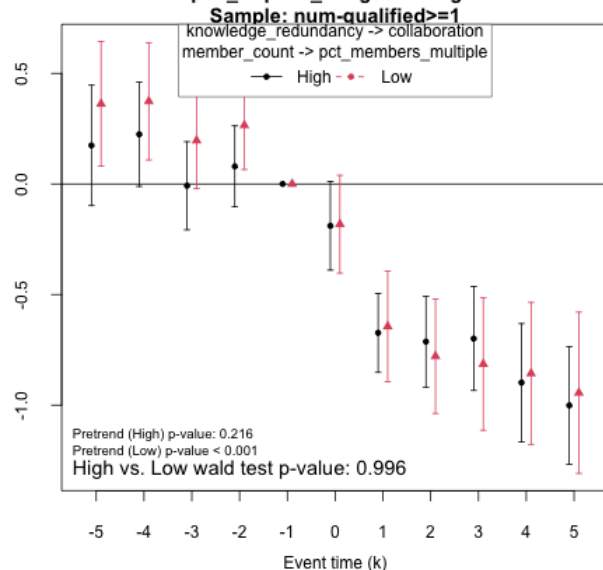
major\_minor\_release\_count rolling5



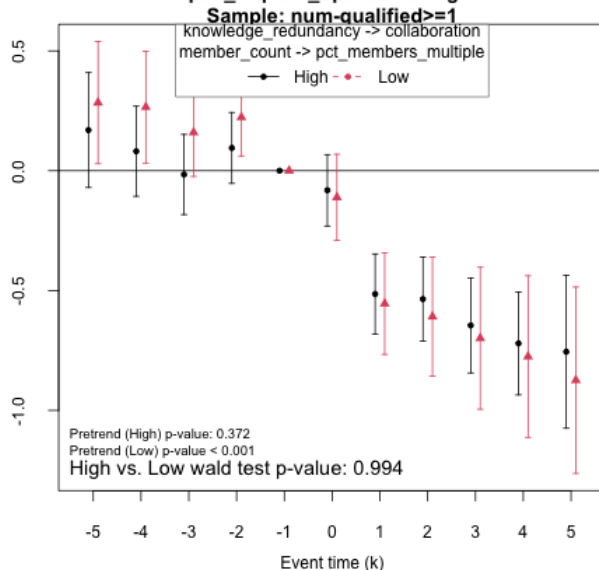
overall\_new\_release\_count rolling5



pull\_request\_merged rolling5



pull\_request\_opened rolling5

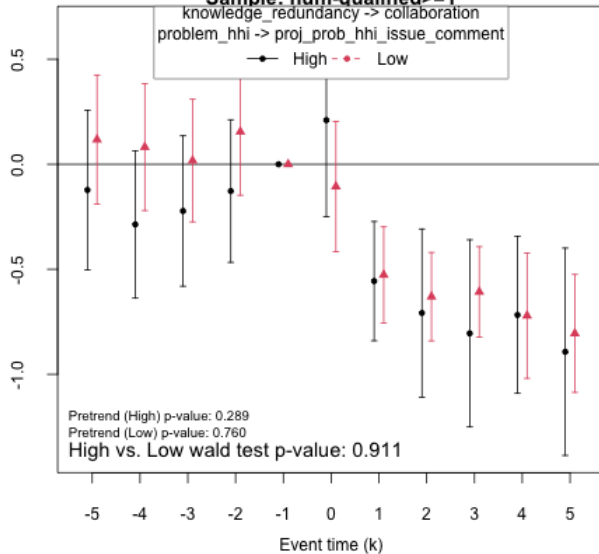


major\_minor\_release\_count rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy -> collaboration  
problem\_hhi -> proj\_prob\_hhi\_issue\_comment

—●— High —●— Low

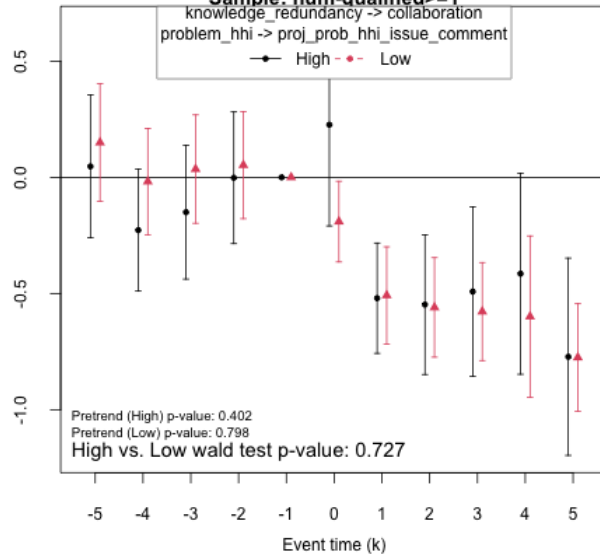


overall\_new\_release\_count rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy -> collaboration  
problem\_hhi -> proj\_prob\_hhi\_issue\_comment

—●— High —●— Low

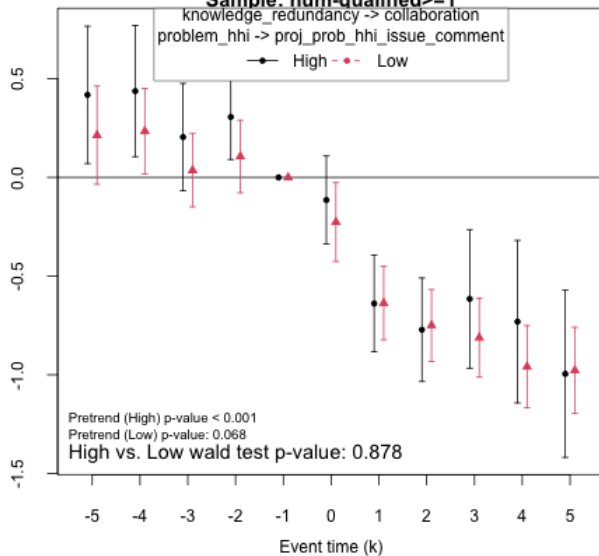


pull\_request\_merged rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy -> collaboration  
problem\_hhi -> proj\_prob\_hhi\_issue\_comment

—●— High —●— Low

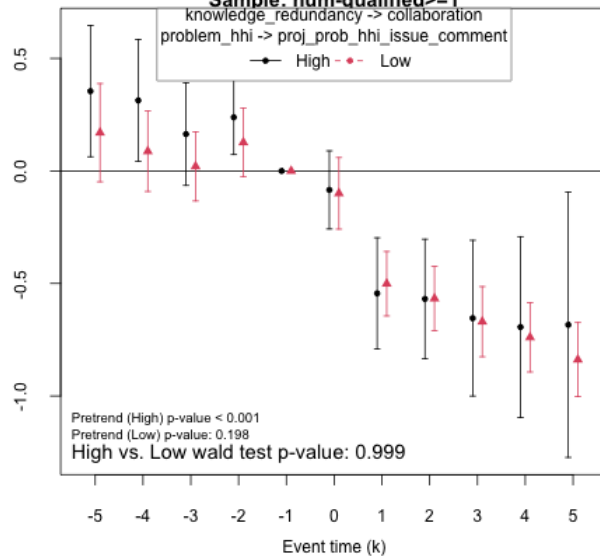


pull\_request\_opened rolling5

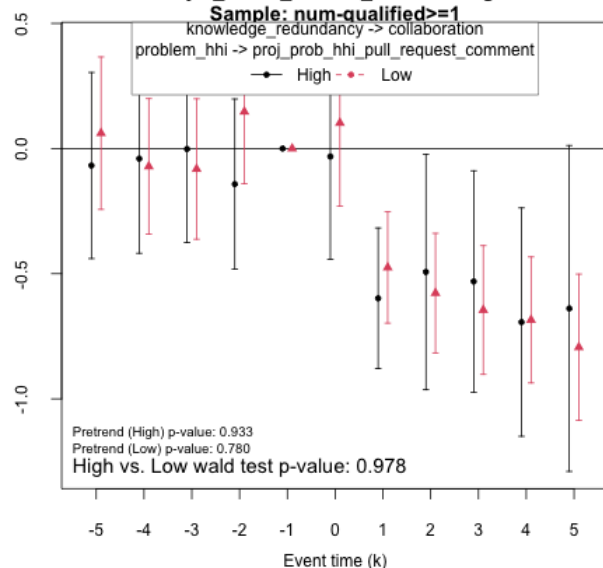
Sample: num-qualified&gt;=1

knowledge\_redundancy -> collaboration  
problem\_hhi -> proj\_prob\_hhi\_issue\_comment

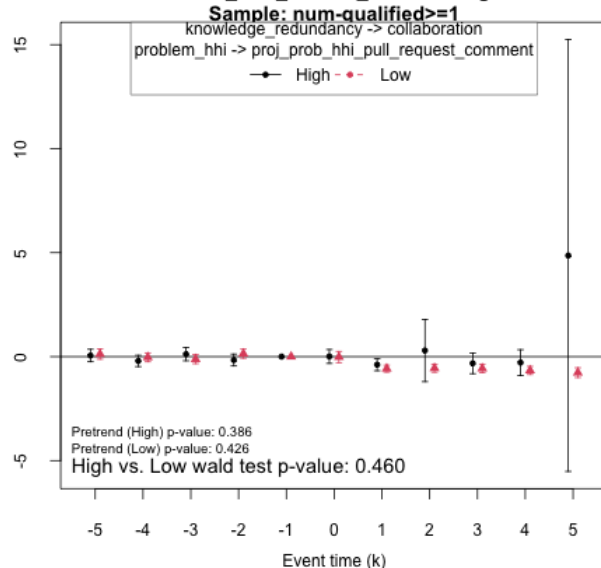
—●— High —●— Low



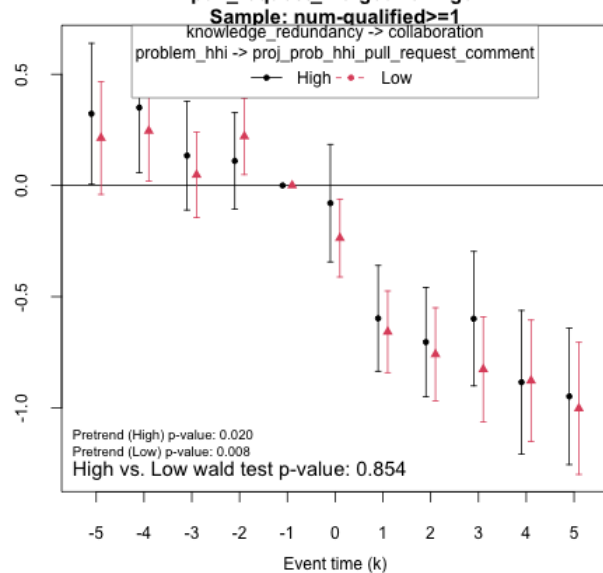
major\_minor\_release\_count rolling5



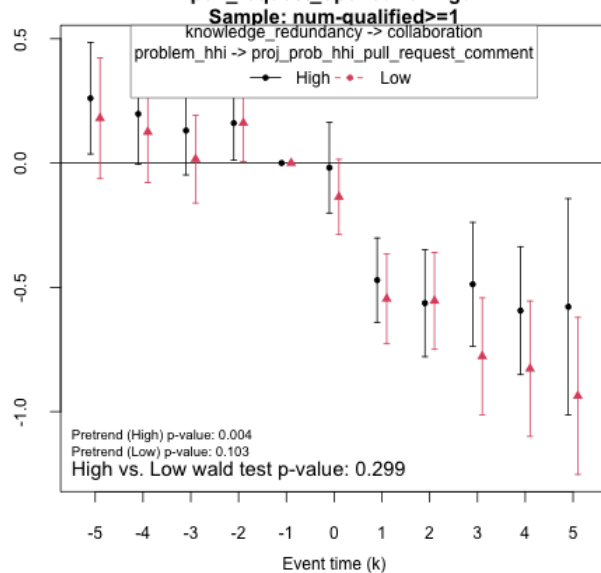
overall\_new\_release\_count rolling5



pull\_request\_merged rolling5



pull\_request\_opened rolling5

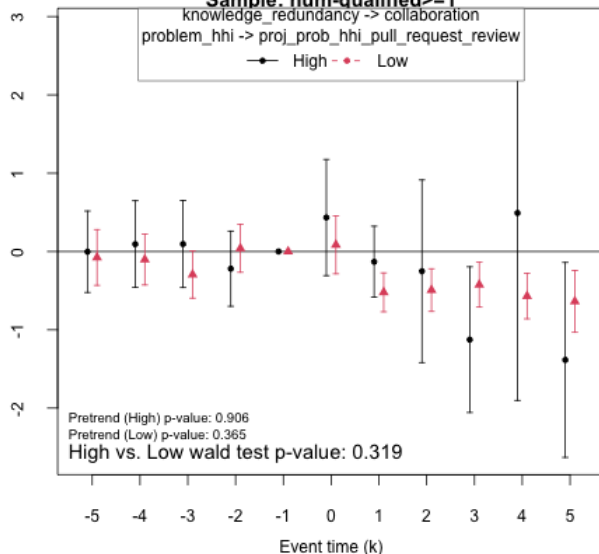


major\_minor\_release\_count\_rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy -> collaboration  
problem\_hhi -> proj\_prob\_hhi\_pull\_request\_review

—●— High —●— Low

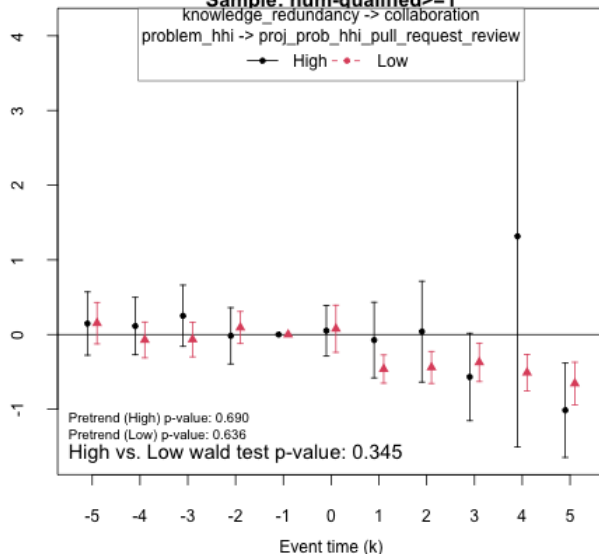


overall\_new\_release\_count\_rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy -> collaboration  
problem\_hhi -> proj\_prob\_hhi\_pull\_request\_review

—●— High —●— Low

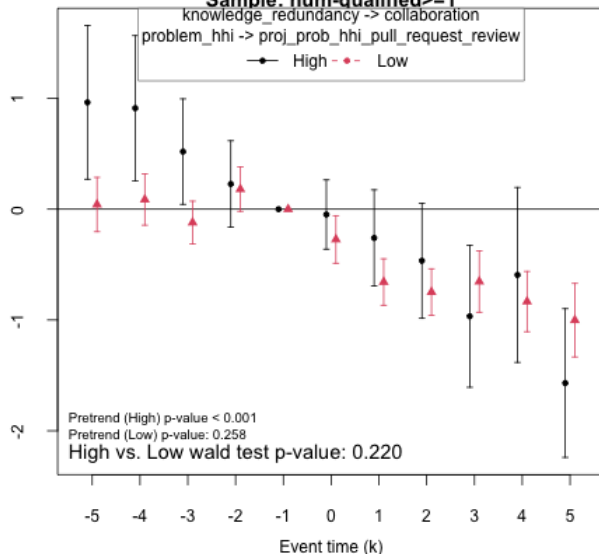


pull\_request\_merged\_rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy -> collaboration  
problem\_hhi -> proj\_prob\_hhi\_pull\_request\_review

—●— High —●— Low

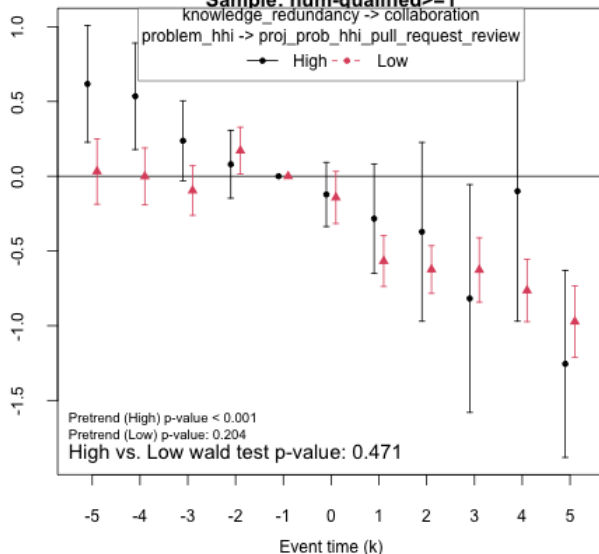


pull\_request\_opened\_rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy -> collaboration  
problem\_hhi -> proj\_prob\_hhi\_pull\_request\_review

—●— High —●— Low



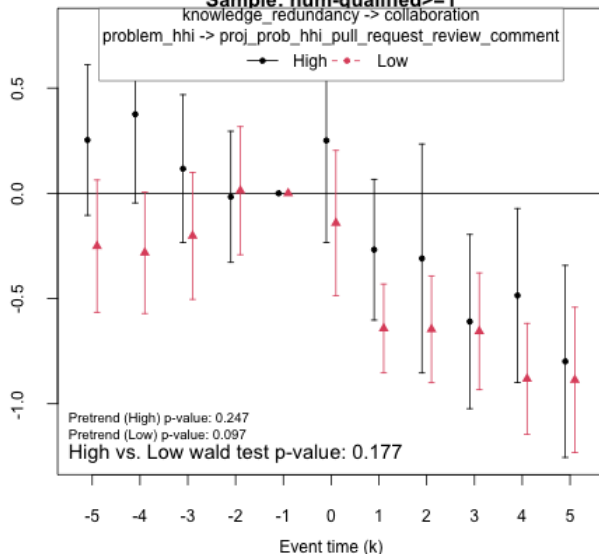
major\_minor\_release\_count\_rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy -&gt; collaboration

problem\_hhi -&gt; proj\_prob\_hhi\_pull\_request\_review\_comment

—●— High —●— Low



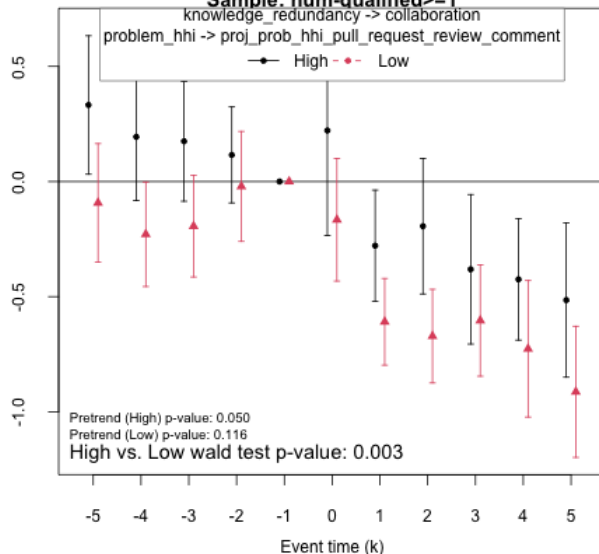
overall\_new\_release\_count\_rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy -&gt; collaboration

problem\_hhi -&gt; proj\_prob\_hhi\_pull\_request\_review\_comment

—●— High —●— Low



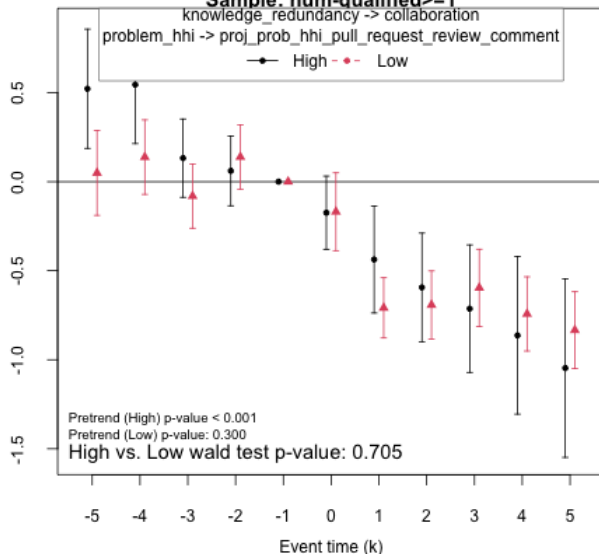
pull\_request\_merged\_rolling5

Sample: num-qualified&gt;=1

knowledge\_redundancy -&gt; collaboration

problem\_hhi -&gt; proj\_prob\_hhi\_pull\_request\_review\_comment

—●— High —●— Low



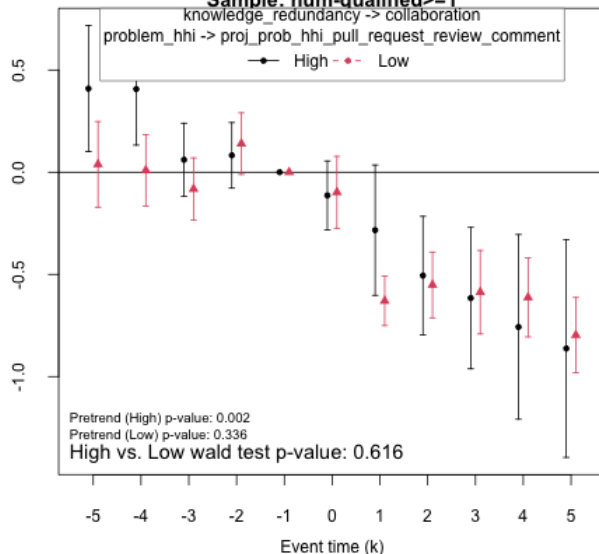
pull\_request\_opened\_rolling5

Sample: num-qualified&gt;=1

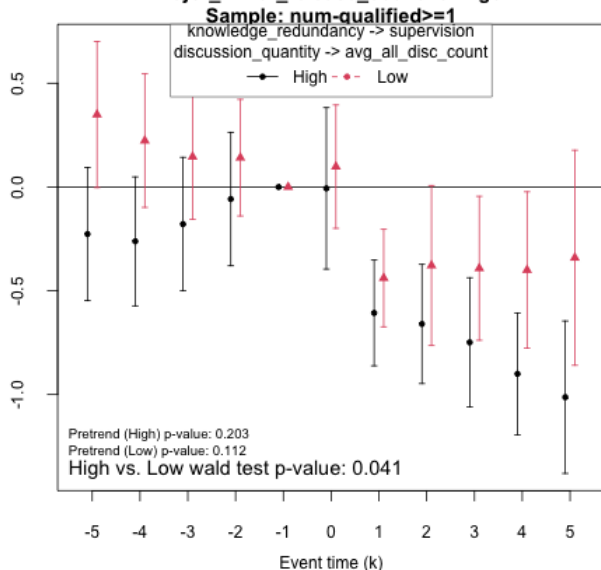
knowledge\_redundancy -&gt; collaboration

problem\_hhi -&gt; proj\_prob\_hhi\_pull\_request\_review\_comment

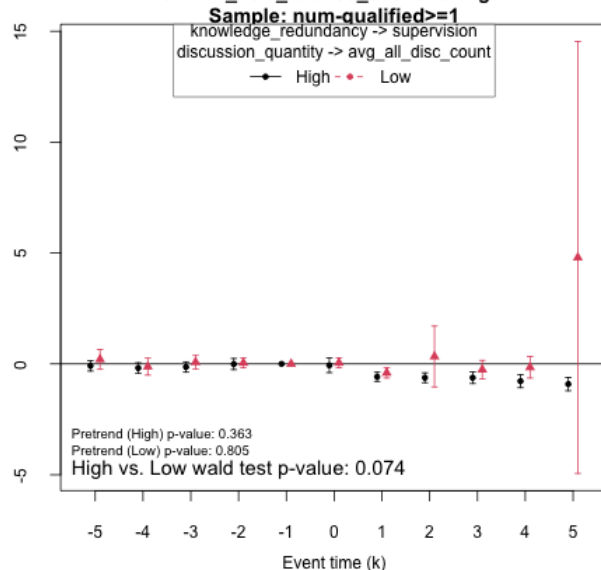
—●— High —●— Low



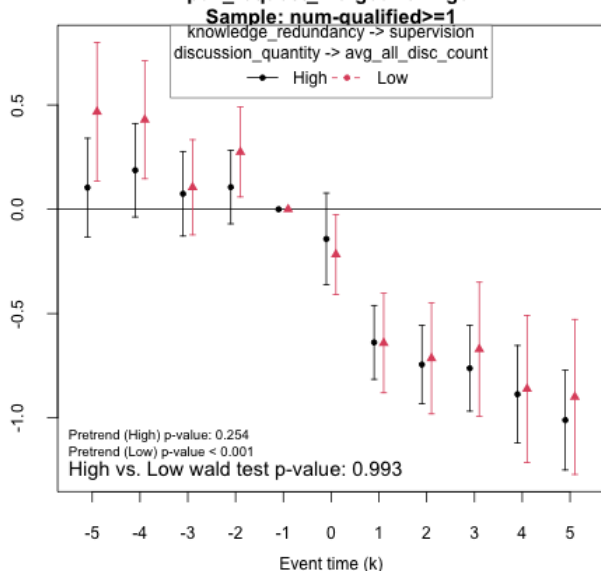
major\_minor\_release\_count rolling5



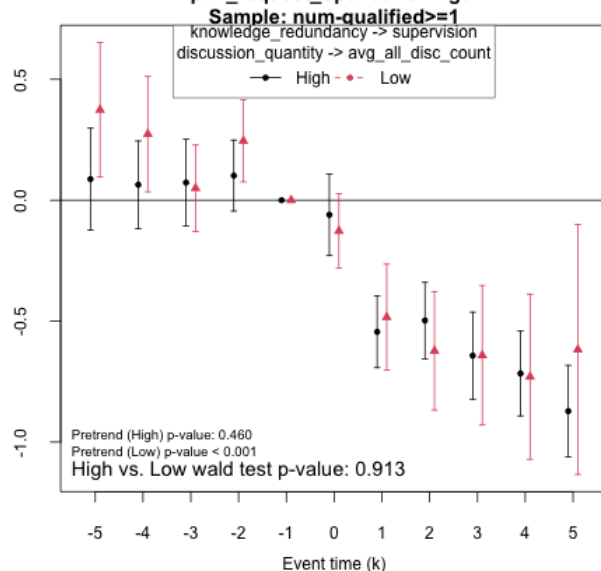
overall\_new\_release\_count rolling5



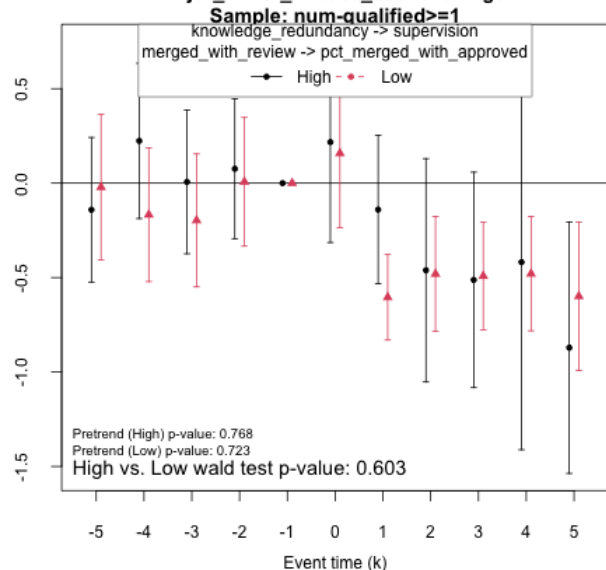
pull\_request\_merged rolling5



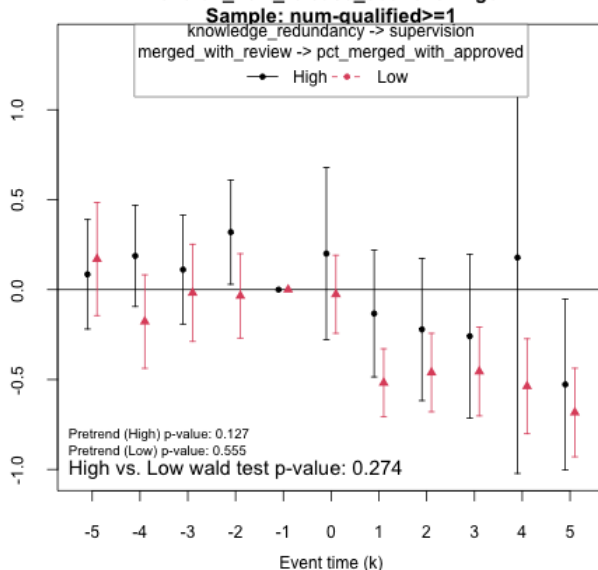
pull\_request\_opened rolling5



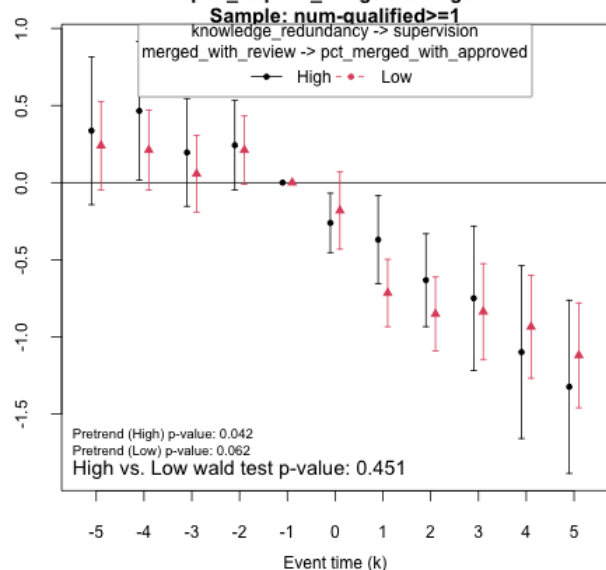
major\_minor\_release\_count rolling5



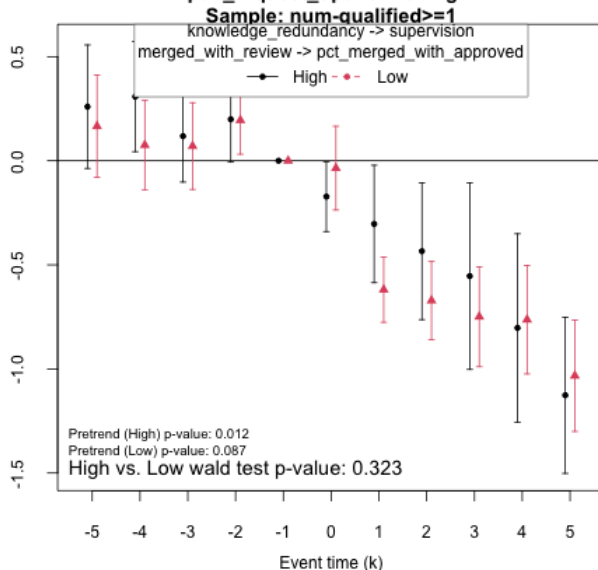
overall\_new\_release\_count rolling5



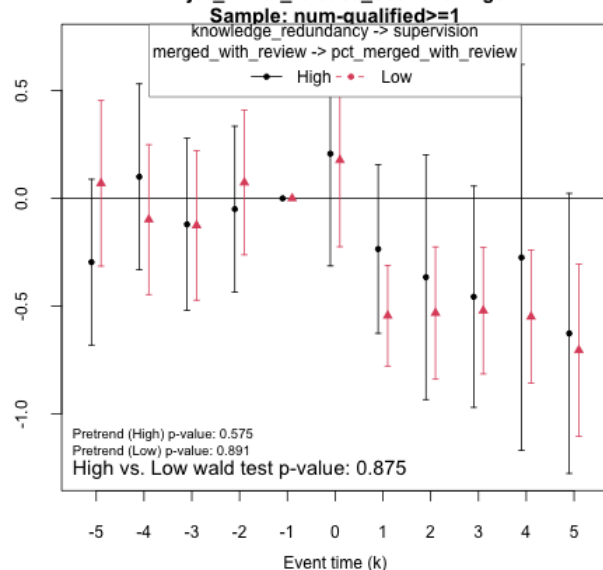
pull\_request\_merged rolling5



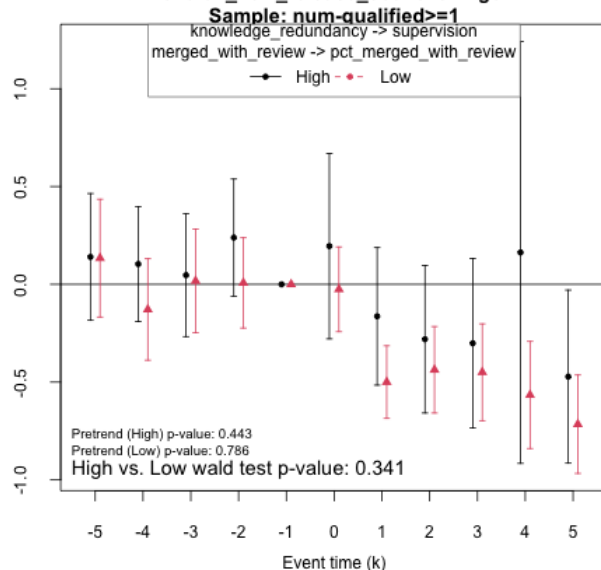
pull\_request\_opened rolling5



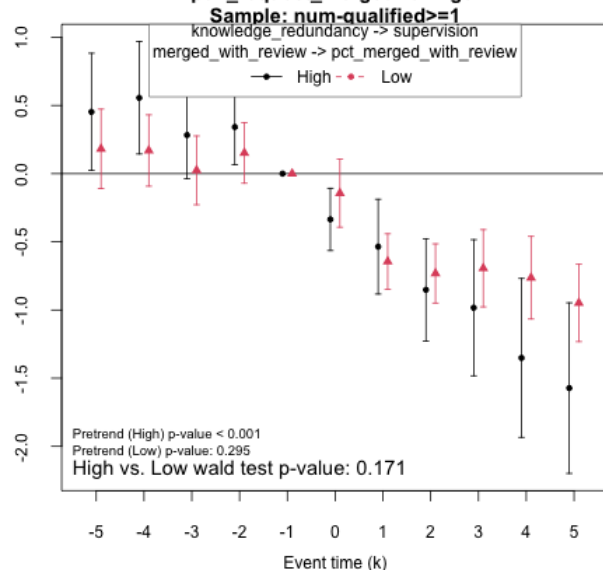
major\_minor\_release\_count rolling5



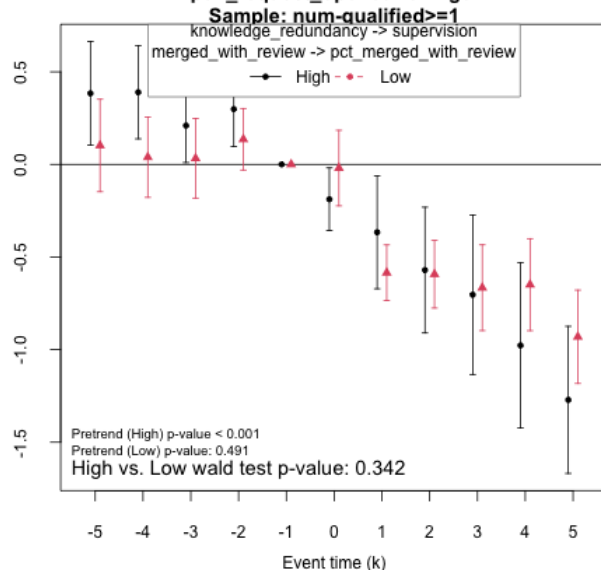
overall\_new\_release\_count rolling5



pull\_request\_merged rolling5



pull\_request\_opened rolling5

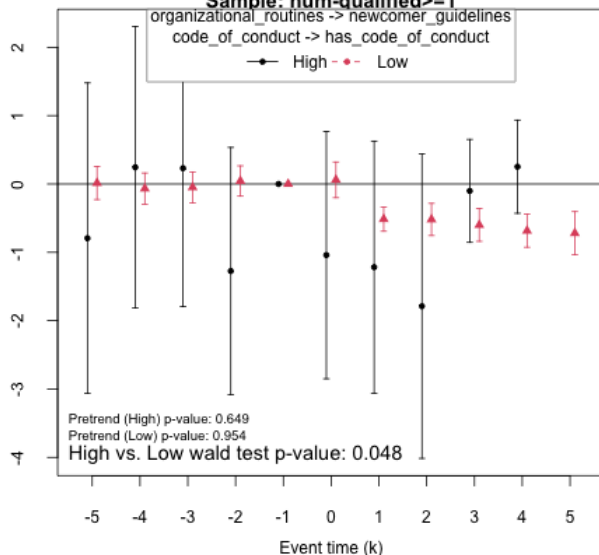


major\_minor\_release\_count rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> newcomer\_guidelines  
code\_of\_conduct -> has\_code\_of\_conduct

—●— High —●— Low

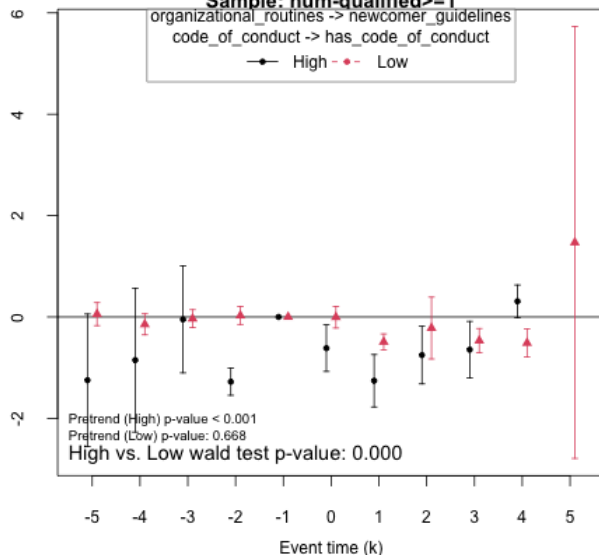


overall\_new\_release\_count rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> newcomer\_guidelines  
code\_of\_conduct -> has\_code\_of\_conduct

—●— High —●— Low

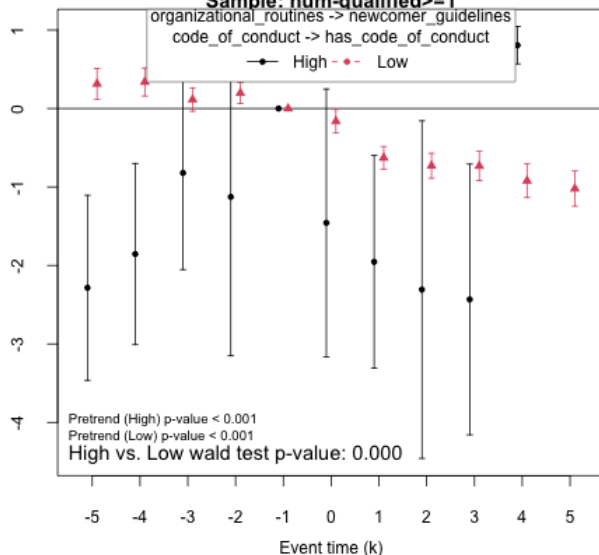


pull\_request\_merged rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> newcomer\_guidelines  
code\_of\_conduct -> has\_code\_of\_conduct

—●— High —●— Low

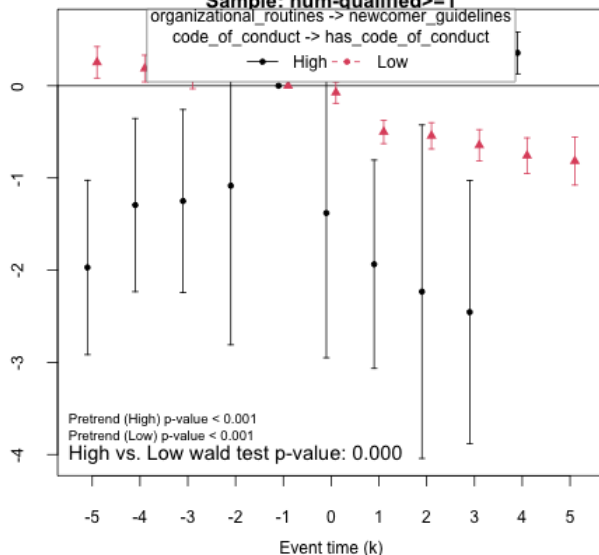


pull\_request\_opened rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> newcomer\_guidelines  
code\_of\_conduct -> has\_code\_of\_conduct

—●— High —●— Low

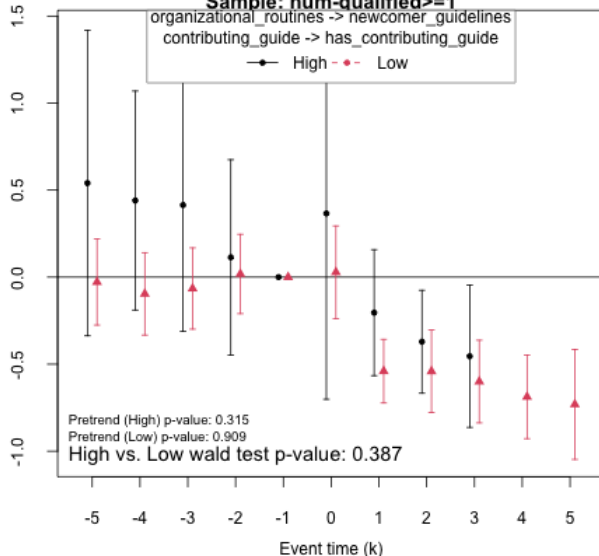


major\_minor\_release\_count rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> newcomer\_guidelines  
contributing\_guide -> has\_contributing\_guide

—●— High —●— Low

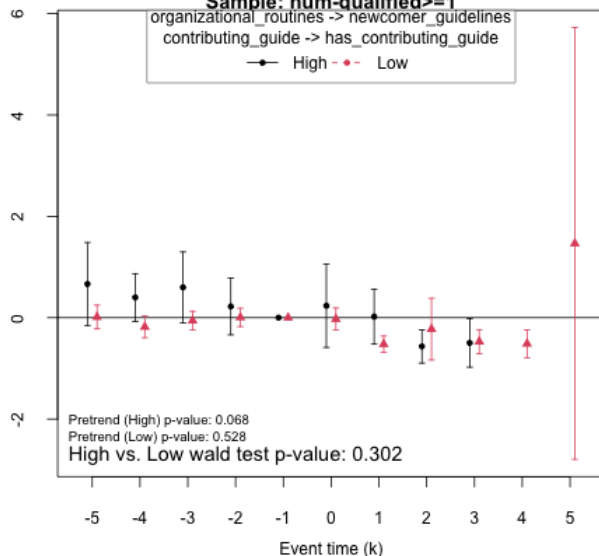


overall\_new\_release\_count rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> newcomer\_guidelines  
contributing\_guide -> has\_contributing\_guide

—●— High —●— Low

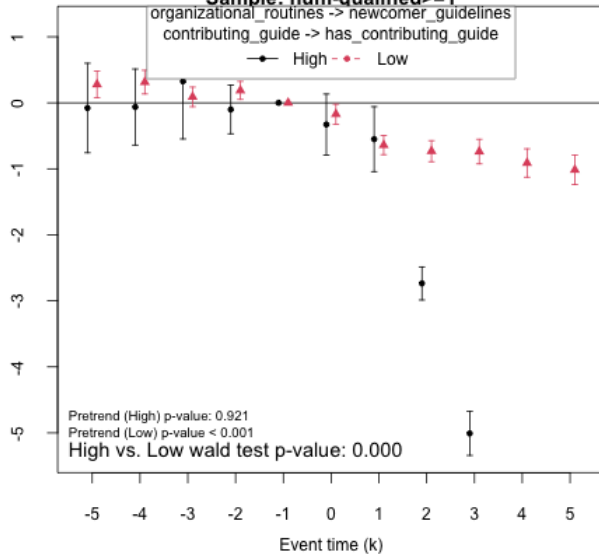


pull\_request\_merged rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> newcomer\_guidelines  
contributing\_guide -> has\_contributing\_guide

—●— High —●— Low

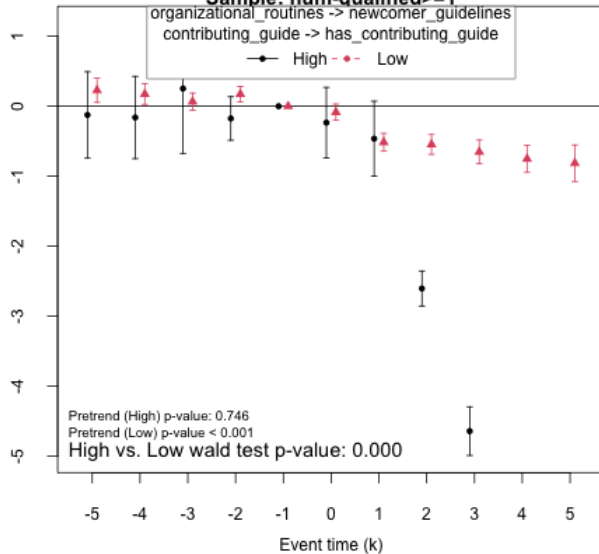


pull\_request\_opened rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> newcomer\_guidelines  
contributing\_guide -> has\_contributing\_guide

—●— High —●— Low

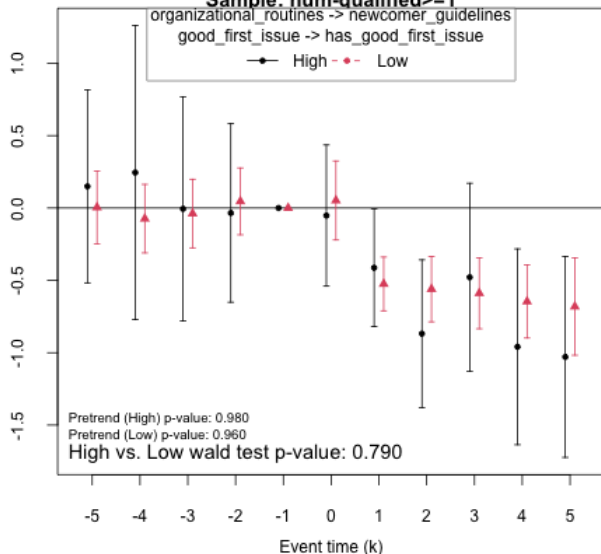


major\_minor\_release\_count rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> newcomer\_guidelines  
good\_first\_issue -> has\_good\_first\_issue

—●— High —●— Low

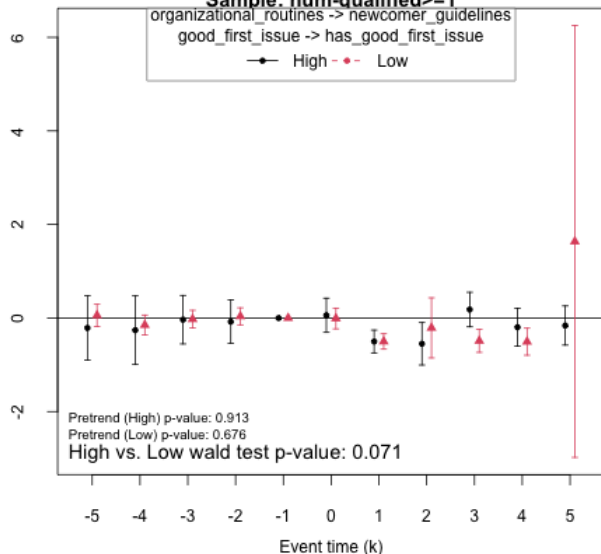


overall\_new\_release\_count rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> newcomer\_guidelines  
good\_first\_issue -> has\_good\_first\_issue

—●— High —●— Low

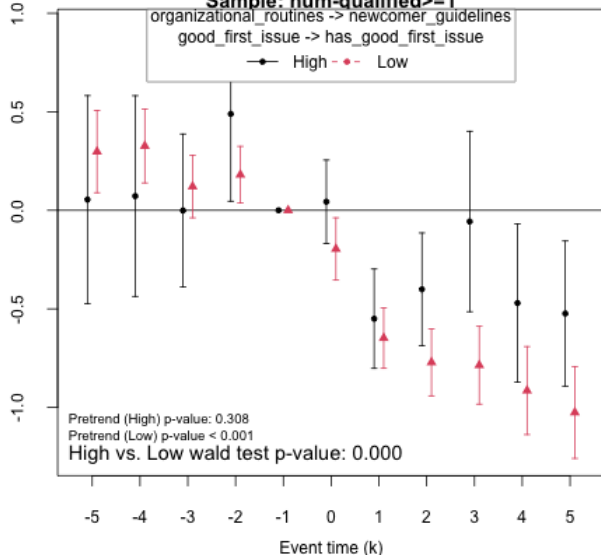


pull\_request\_merged rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> newcomer\_guidelines  
good\_first\_issue -> has\_good\_first\_issue

—●— High —●— Low

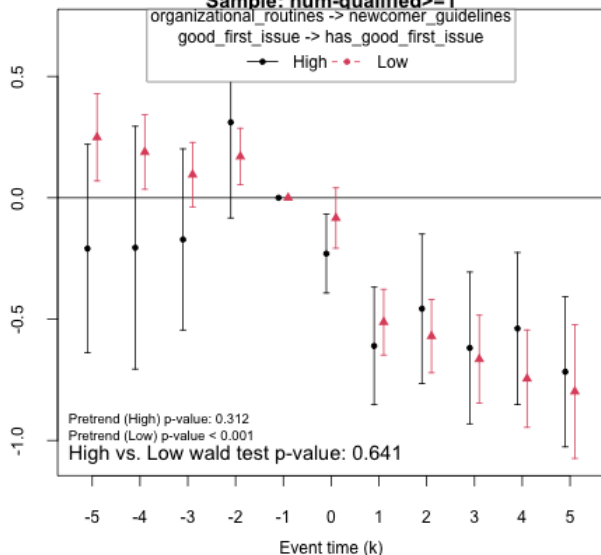


pull\_request\_opened rolling5

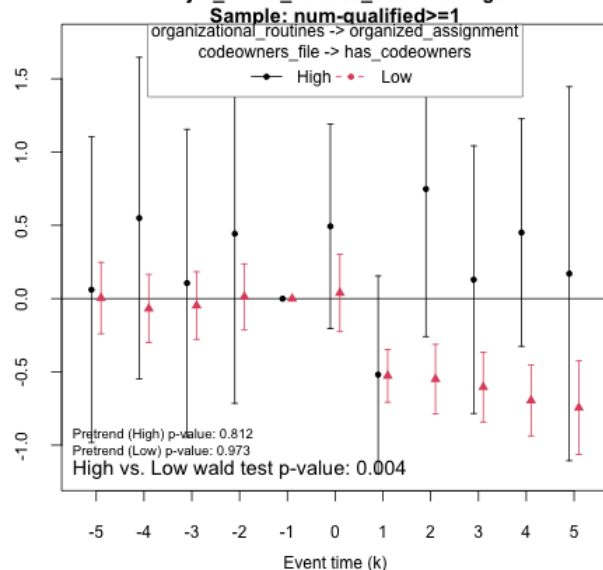
Sample: num-qualified&gt;=1

organizational\_routines -> newcomer\_guidelines  
good\_first\_issue -> has\_good\_first\_issue

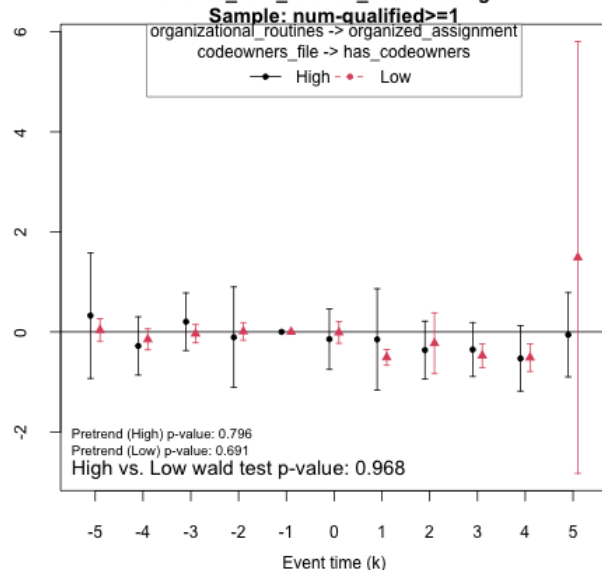
—●— High —●— Low



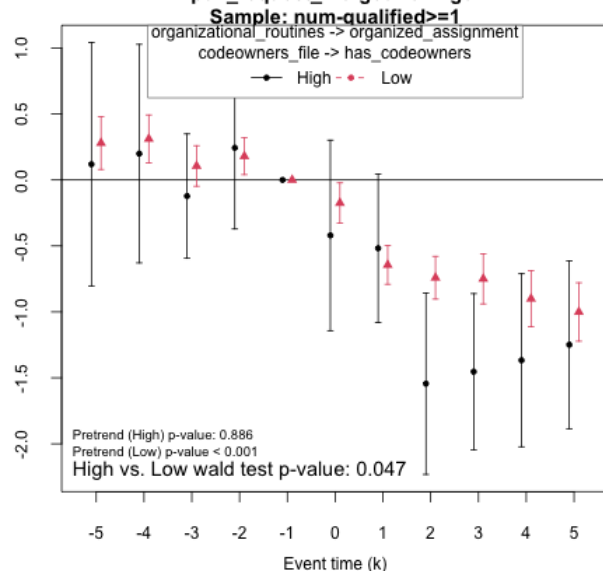
major\_minor\_release\_count rolling5



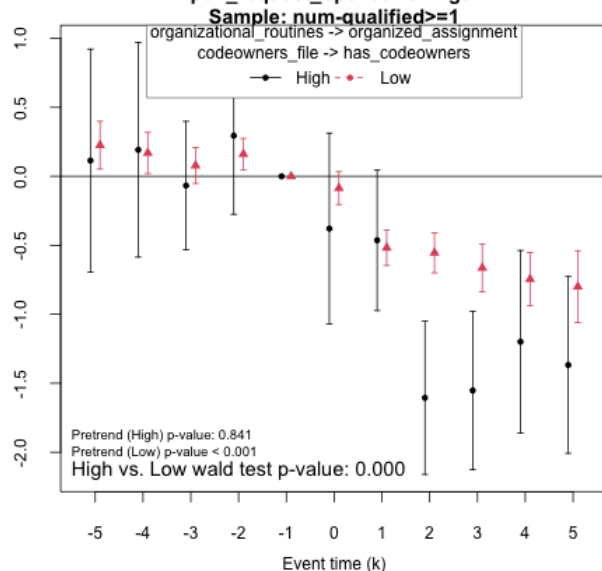
overall\_new\_release\_count rolling5



pull\_request\_merged rolling5



pull\_request\_opened rolling5

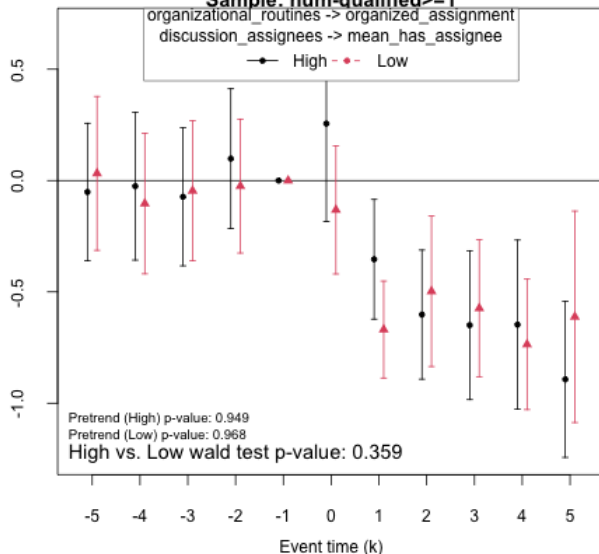


major\_minor\_release\_count rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> organized\_assignment  
discussion\_assignees -> mean\_has\_assignee

—●— High —●— Low

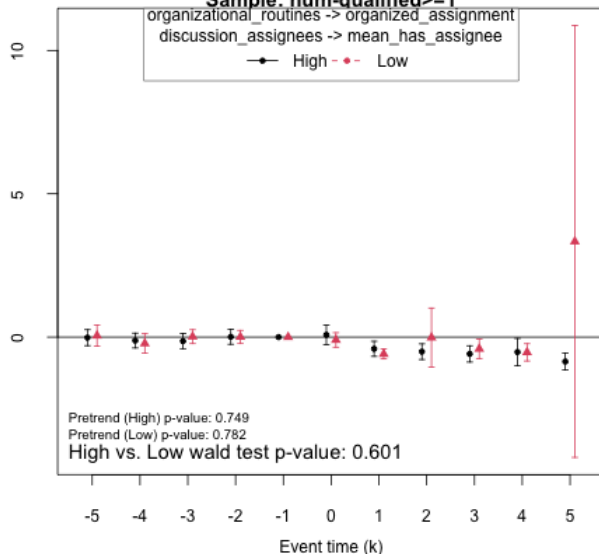


overall\_new\_release\_count rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> organized\_assignment  
discussion\_assignees -> mean\_has\_assignee

—●— High —●— Low

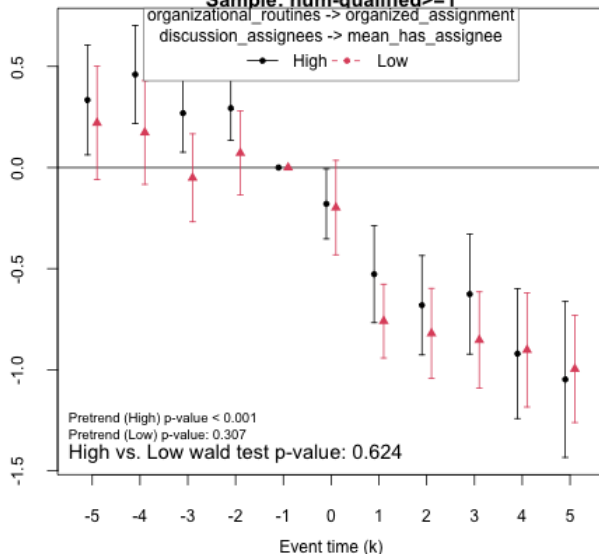


pull\_request\_merged rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> organized\_assignment  
discussion\_assignees -> mean\_has\_assignee

—●— High —●— Low

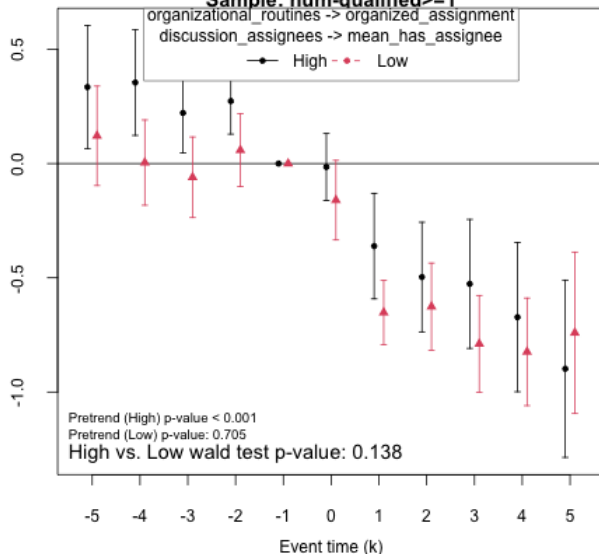


pull\_request\_opened rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> organized\_assignment  
discussion\_assignees -> mean\_has\_assignee

—●— High —●— Low

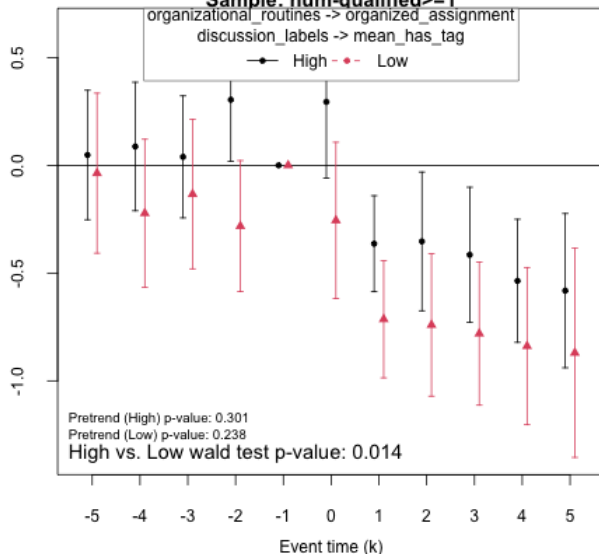


major\_minor\_release\_count rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> organized\_assignment  
discussion\_labels -> mean\_has\_tag

—●— High —●— Low

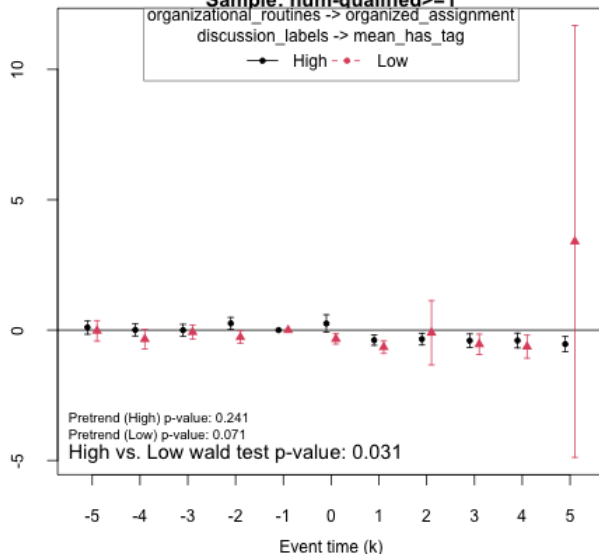


overall\_new\_release\_count rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> organized\_assignment  
discussion\_labels -> mean\_has\_tag

—●— High —●— Low

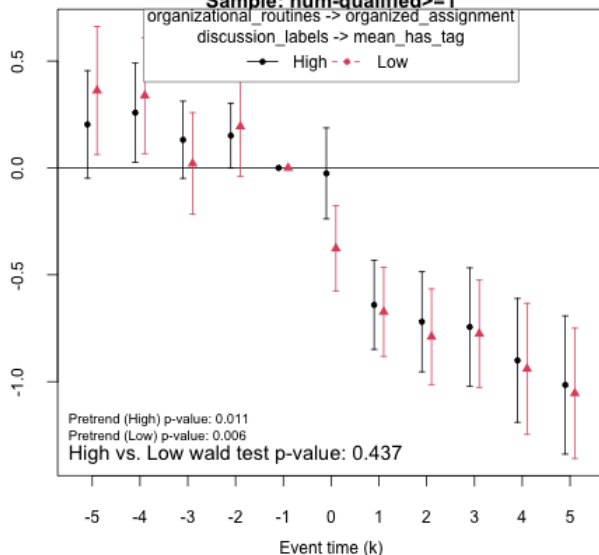


pull\_request\_merged rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> organized\_assignment  
discussion\_labels -> mean\_has\_tag

—●— High —●— Low

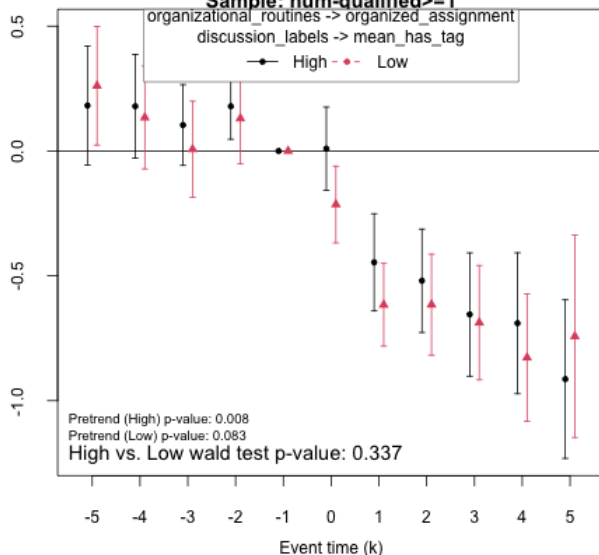


pull\_request\_opened rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> organized\_assignment  
discussion\_labels -> mean\_has\_tag

—●— High —●— Low

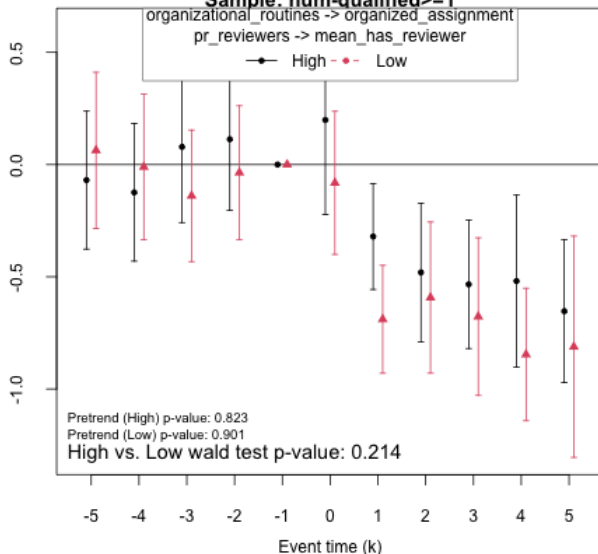


major\_minor\_release\_count rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> organized\_assignment  
pr\_reviewers -> mean\_has\_reviewer

—●— High —●— Low

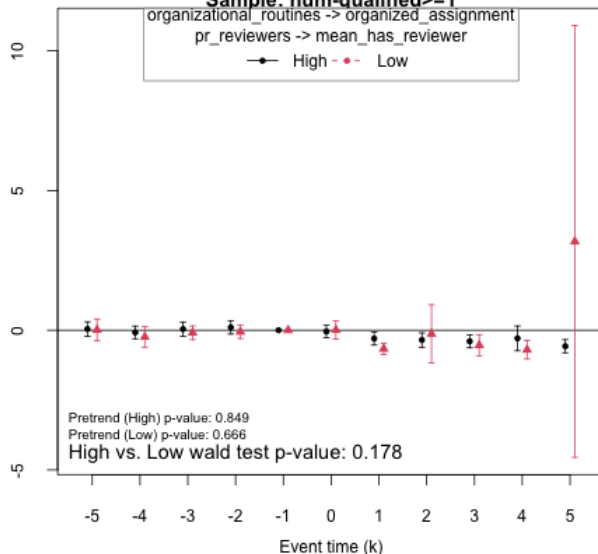


overall\_new\_release\_count rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> organized\_assignment  
pr\_reviewers -> mean\_has\_reviewer

—●— High —●— Low

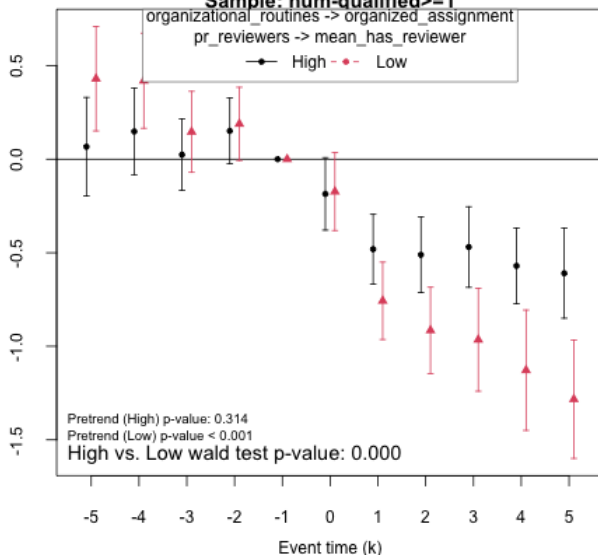


pull\_request\_merged rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> organized\_assignment  
pr\_reviewers -> mean\_has\_reviewer

—●— High —●— Low

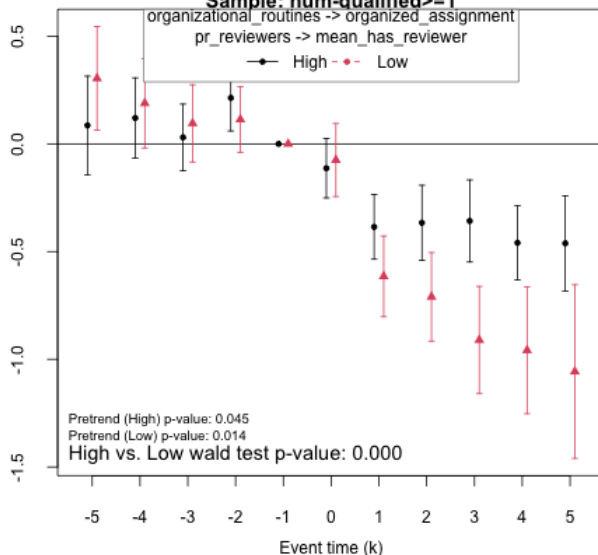


pull\_request\_opened rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> organized\_assignment  
pr\_reviewers -> mean\_has\_reviewer

—●— High —●— Low

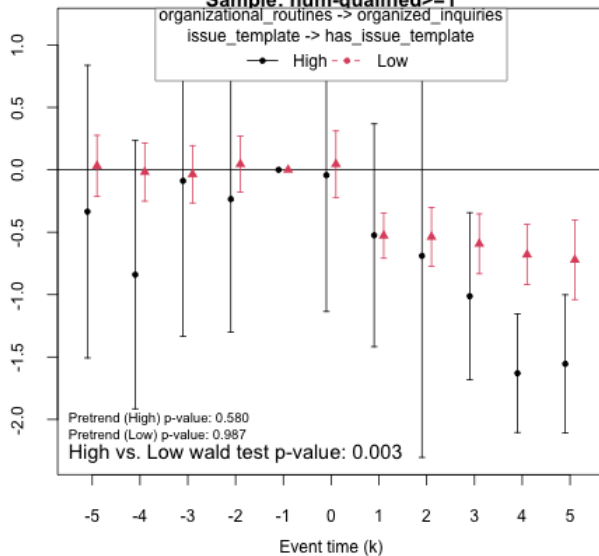


major\_minor\_release\_count rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> organized\_inquiries  
issue\_template -> has\_issue\_template

—●— High —●— Low

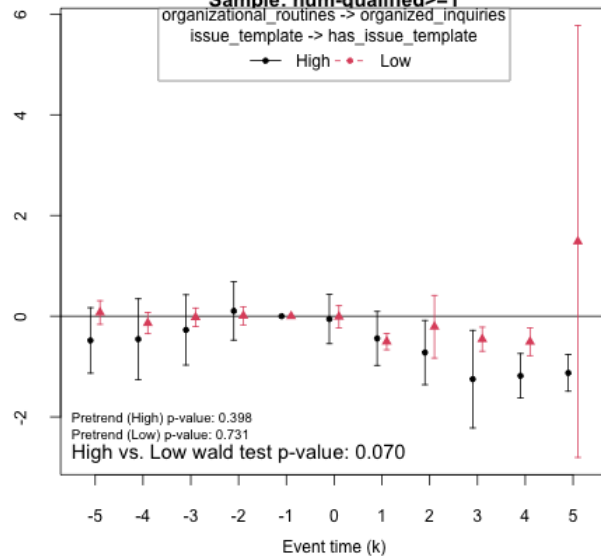


overall\_new\_release\_count rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> organized\_inquiries  
issue\_template -> has\_issue\_template

—●— High —●— Low

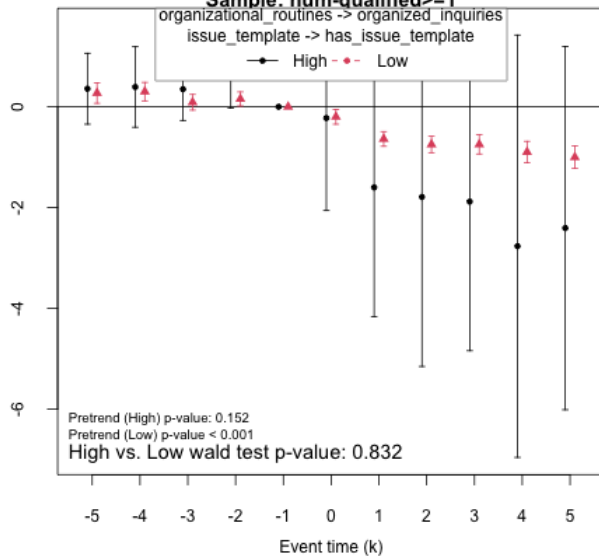


pull\_request\_merged rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> organized\_inquiries  
issue\_template -> has\_issue\_template

—●— High —●— Low

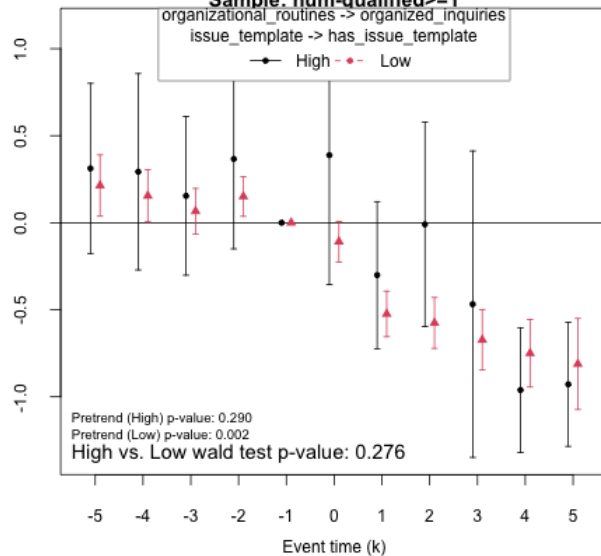


pull\_request\_opened rolling5

Sample: num-qualified&gt;=1

organizational\_routines -> organized\_inquiries  
issue\_template -> has\_issue\_template

—●— High —●— Low



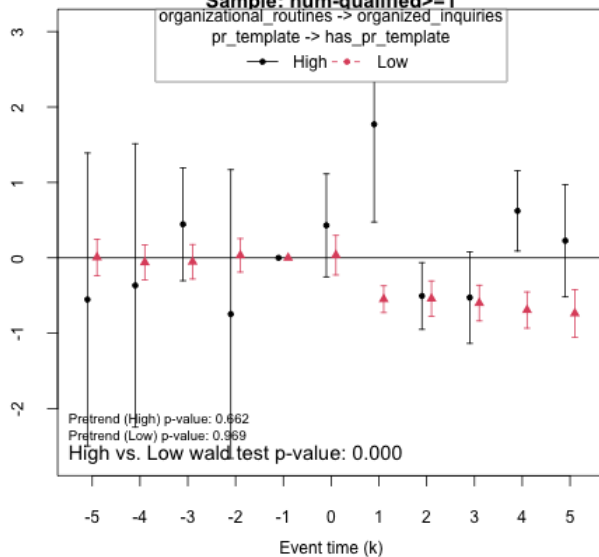
major\_minor\_release\_count rolling5

Sample: num-qualified&gt;=1

organizational\_routines -&gt; organized\_inquiries

pr\_template -&gt; has\_pr\_template

—●— High —●— Low



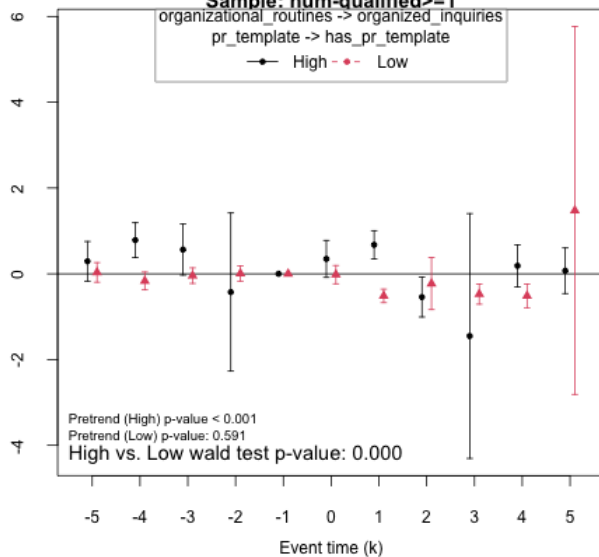
overall\_new\_release\_count rolling5

Sample: num-qualified&gt;=1

organizational\_routines -&gt; organized\_inquiries

pr\_template -&gt; has\_pr\_template

—●— High —●— Low



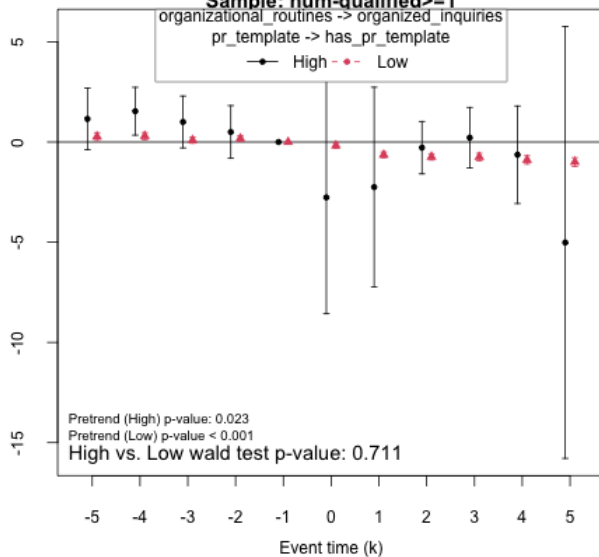
pull\_request\_merged rolling5

Sample: num-qualified&gt;=1

organizational\_routines -&gt; organized\_inquiries

pr\_template -&gt; has\_pr\_template

—●— High —●— Low



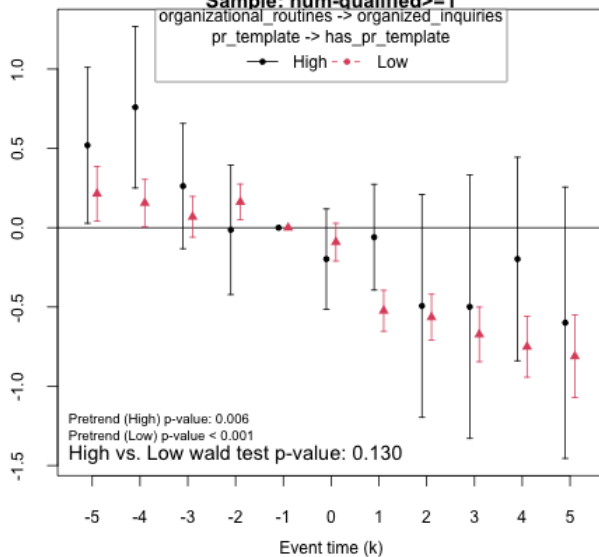
pull\_request\_opened rolling5

Sample: num-qualified&gt;=1

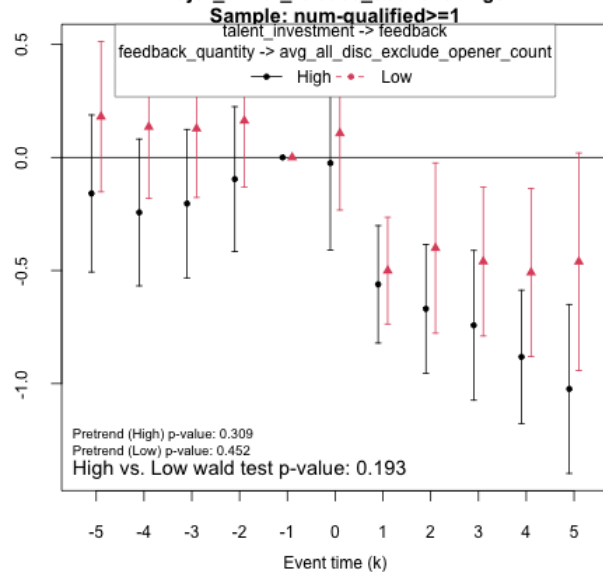
organizational\_routines -&gt; organized\_inquiries

pr\_template -&gt; has\_pr\_template

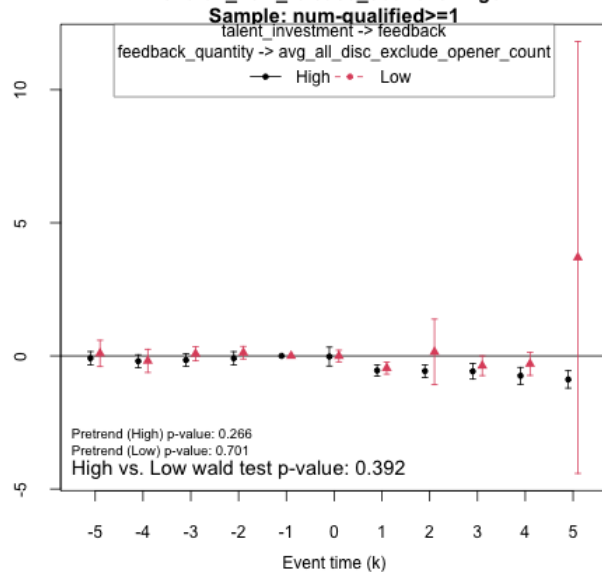
—●— High —●— Low



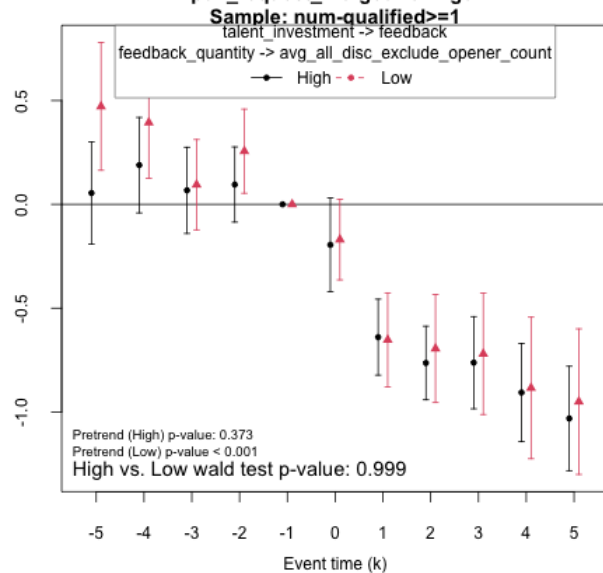
major\_minor\_release\_count rolling5



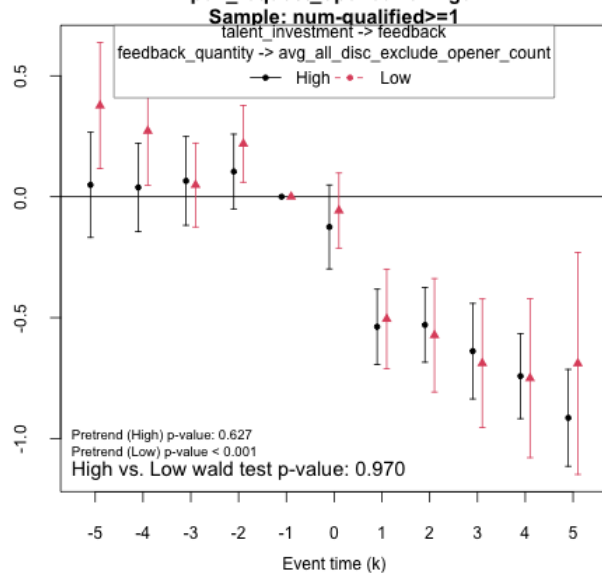
overall\_new\_release\_count rolling5



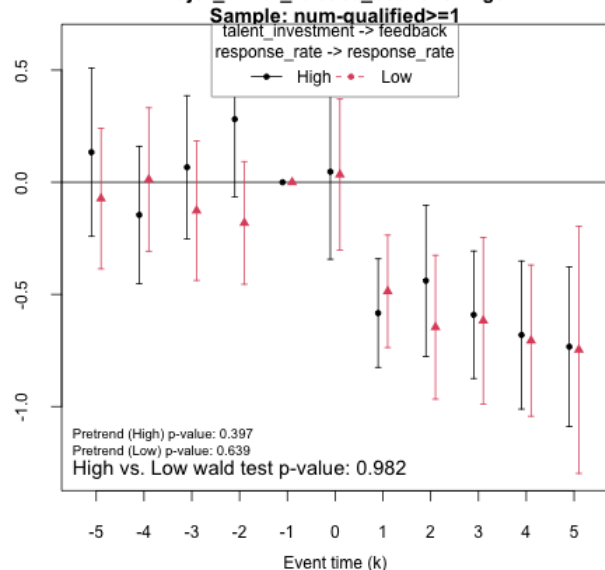
pull\_request\_merged rolling5



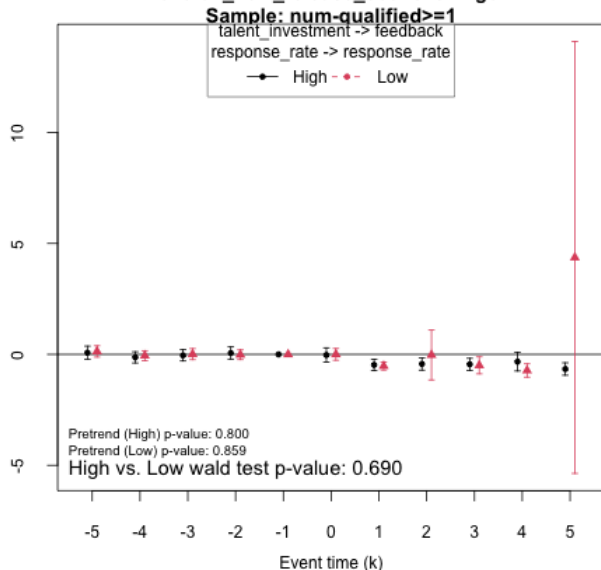
pull\_request\_opened rolling5



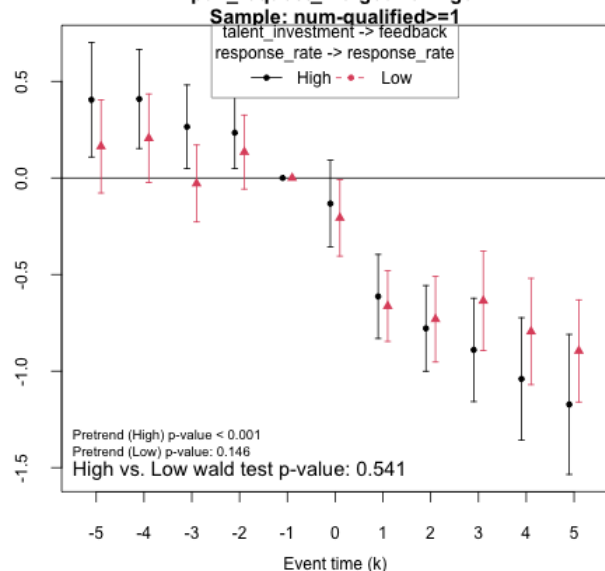
major\_minor\_release\_count rolling5



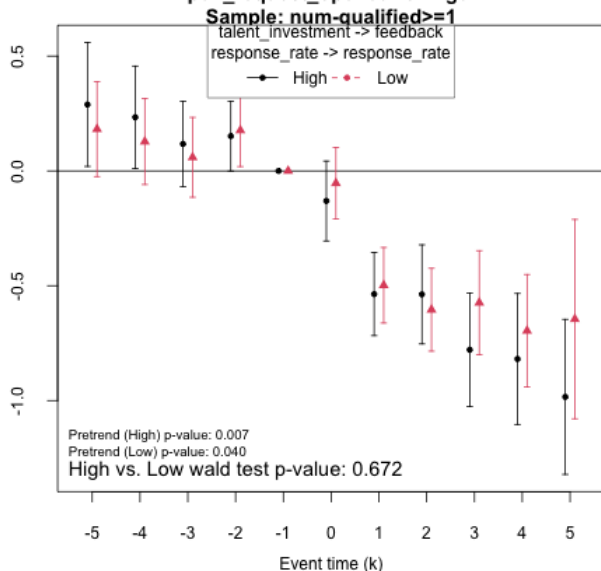
overall\_new\_release\_count rolling5



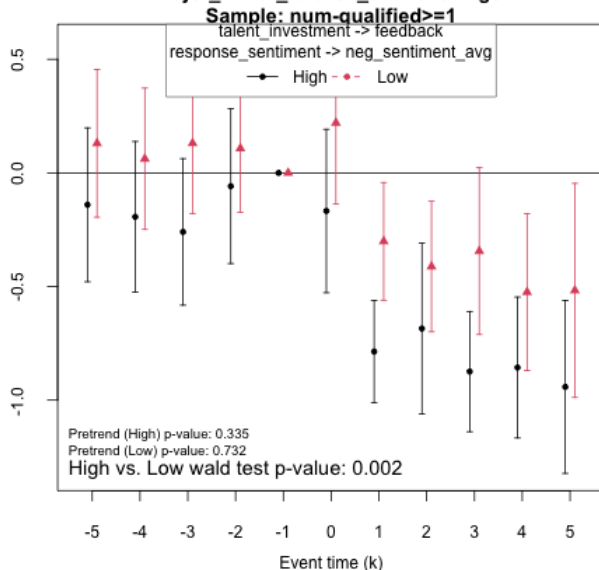
pull\_request\_merged rolling5



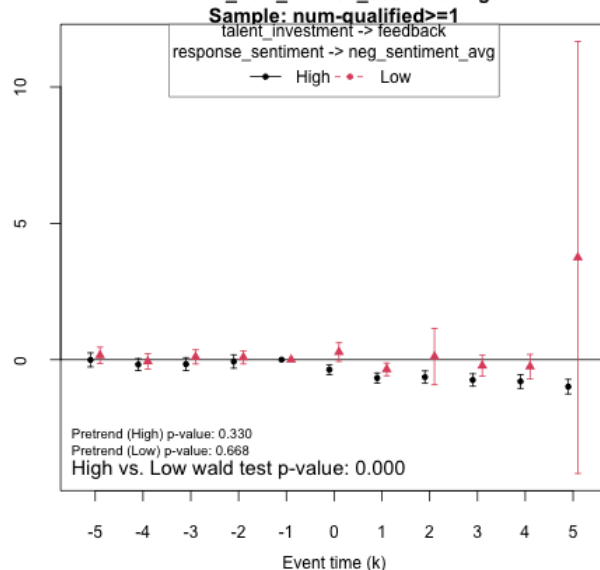
pull\_request\_opened rolling5



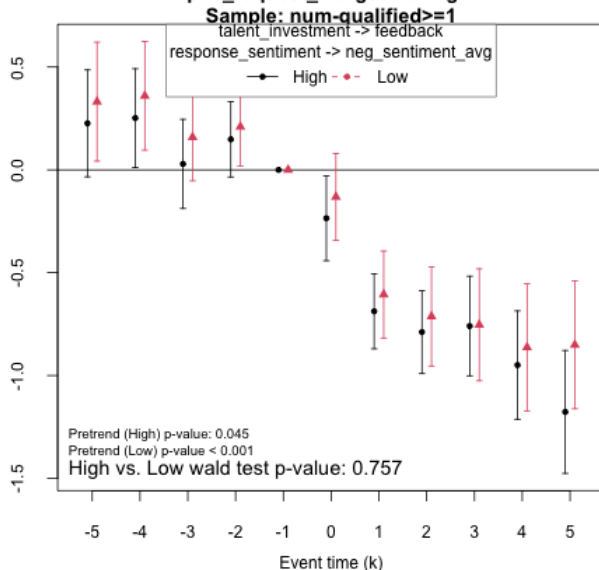
major\_minor\_release\_count rolling5



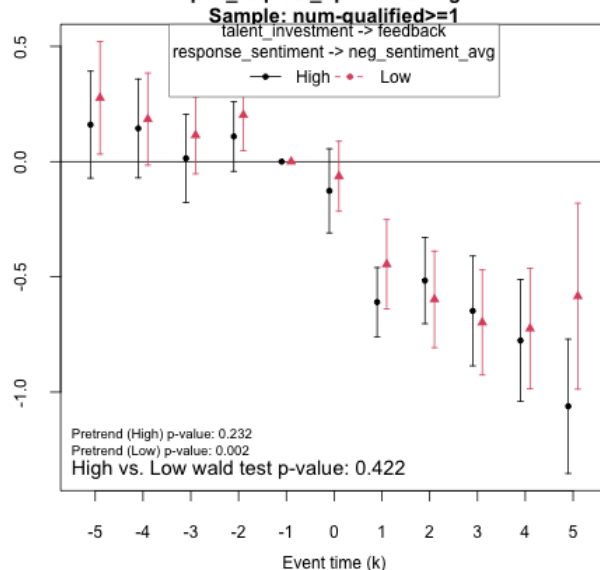
overall\_new\_release\_count rolling5



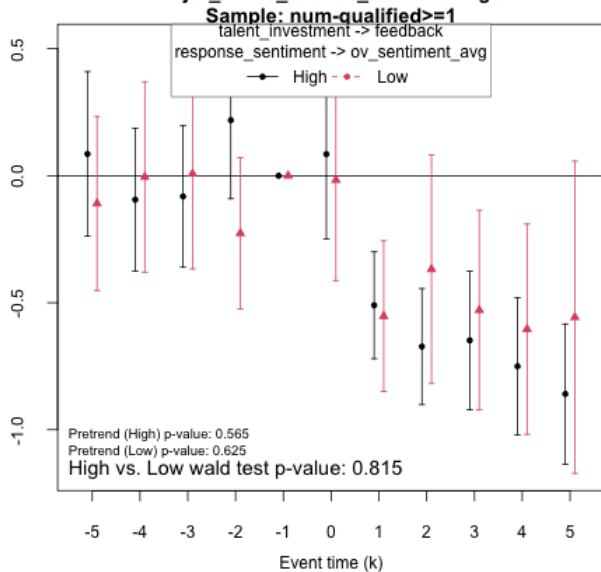
pull\_request\_merged rolling5



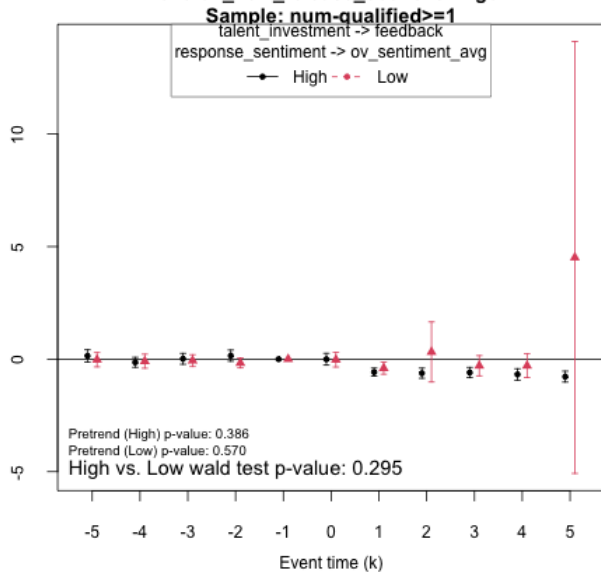
pull\_request\_opened rolling5



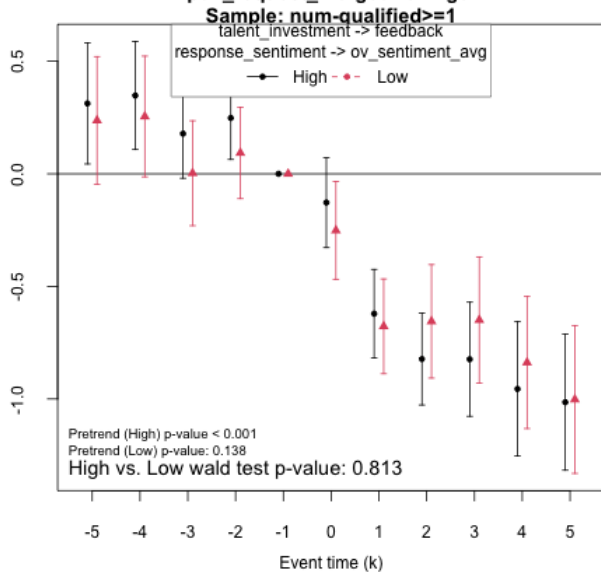
major\_minor\_release\_count rolling5



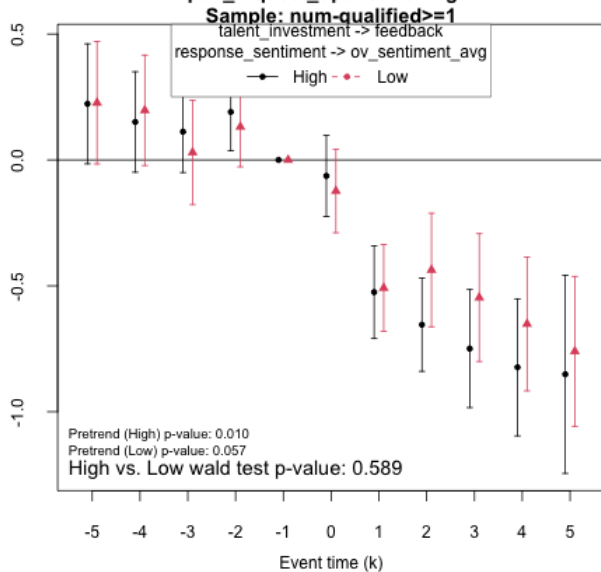
overall\_new\_release\_count rolling5



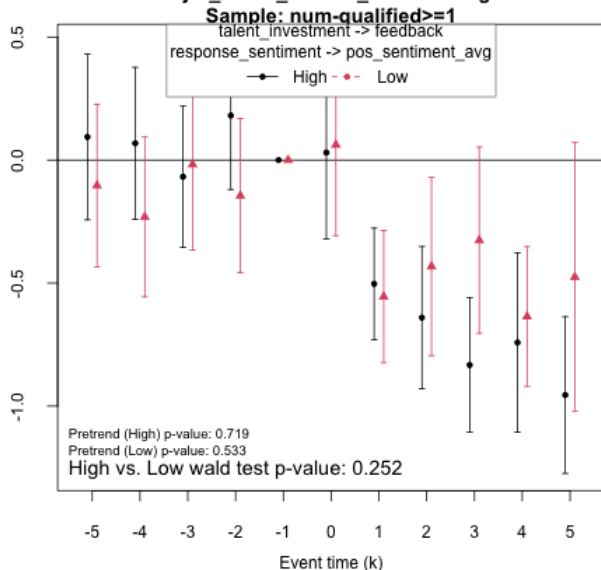
pull\_request\_merged rolling5



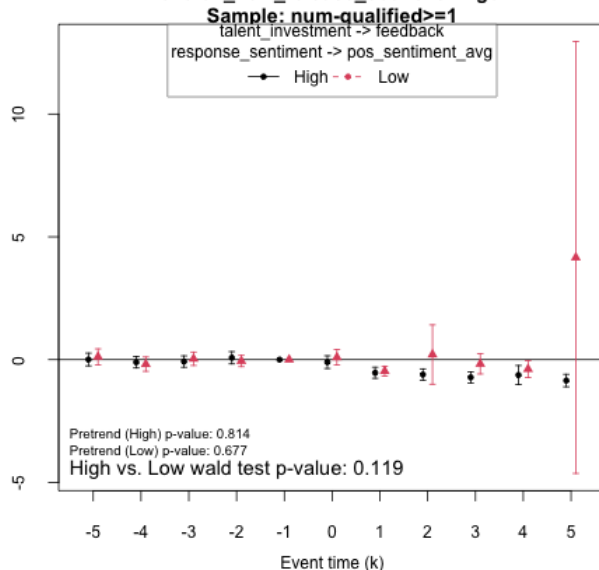
pull\_request\_opened rolling5



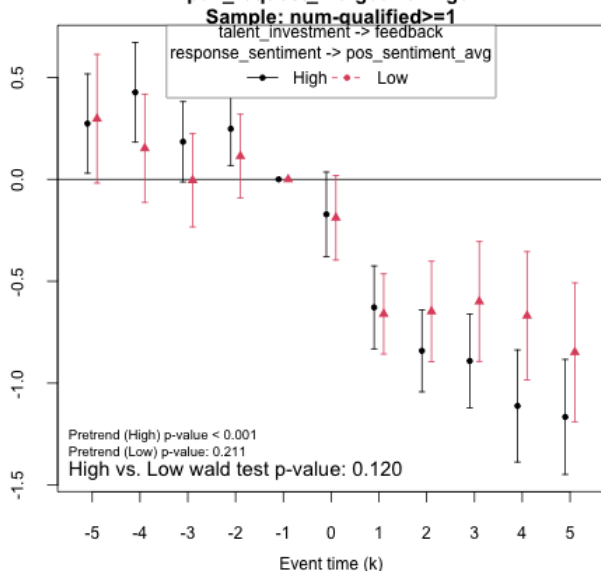
major\_minor\_release\_count rolling5



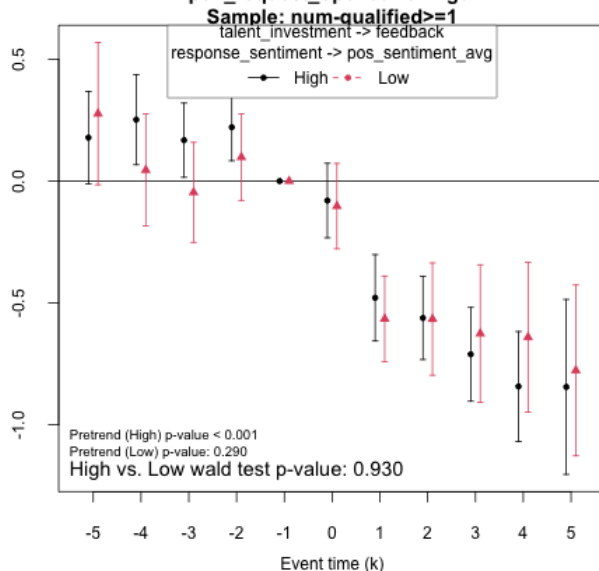
overall\_new\_release\_count rolling5



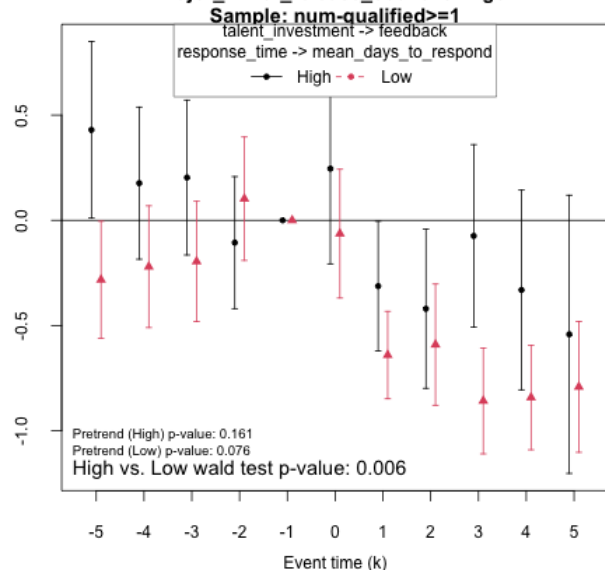
pull\_request\_merged rolling5



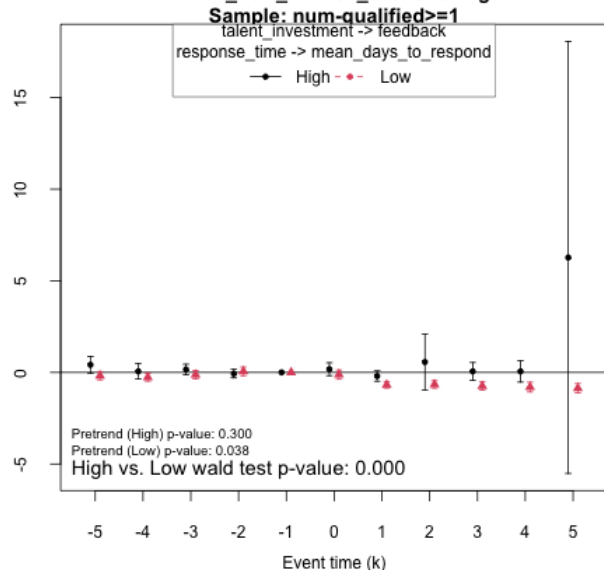
pull\_request\_opened rolling5



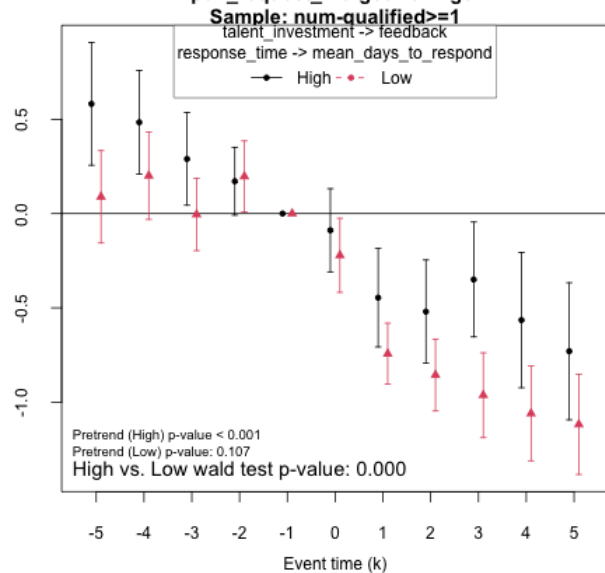
major\_minor\_release\_count rolling5



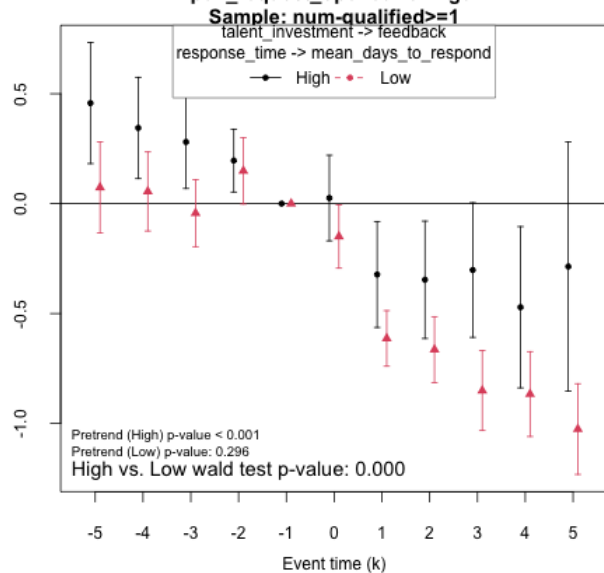
overall\_new\_release\_count rolling5



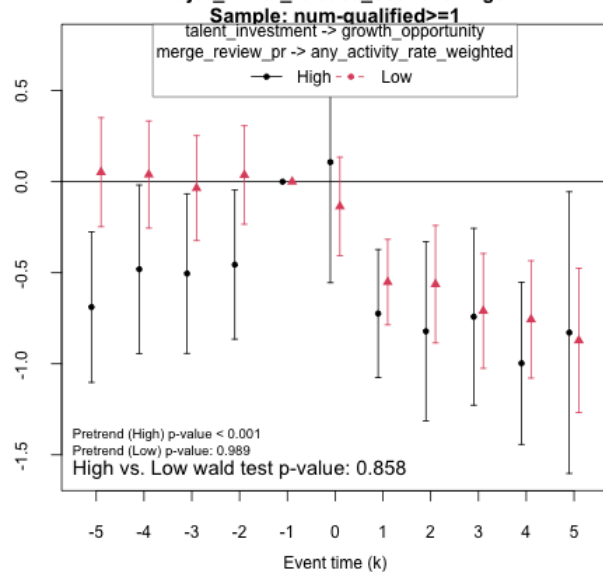
pull\_request\_merged rolling5



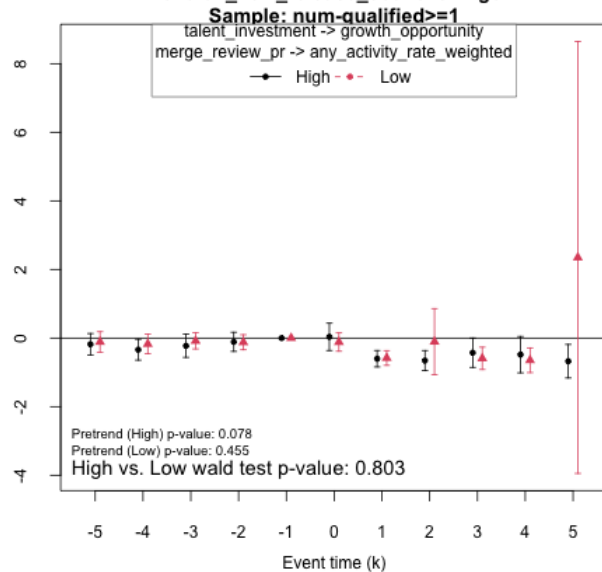
pull\_request\_opened rolling5



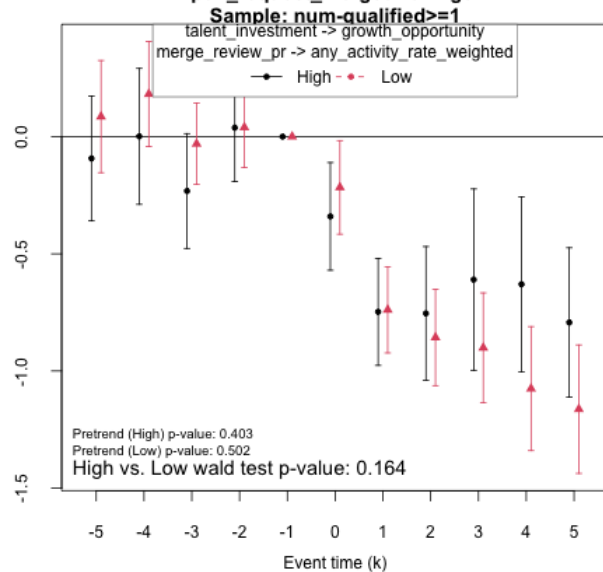
major\_minor\_release\_count rolling5



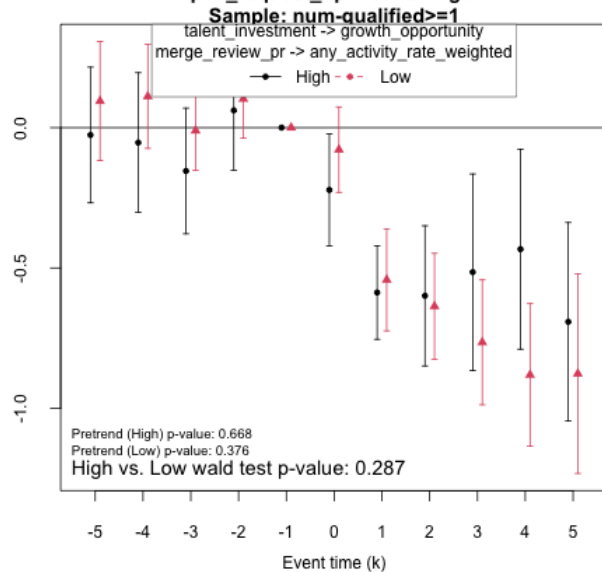
overall\_new\_release\_count rolling5



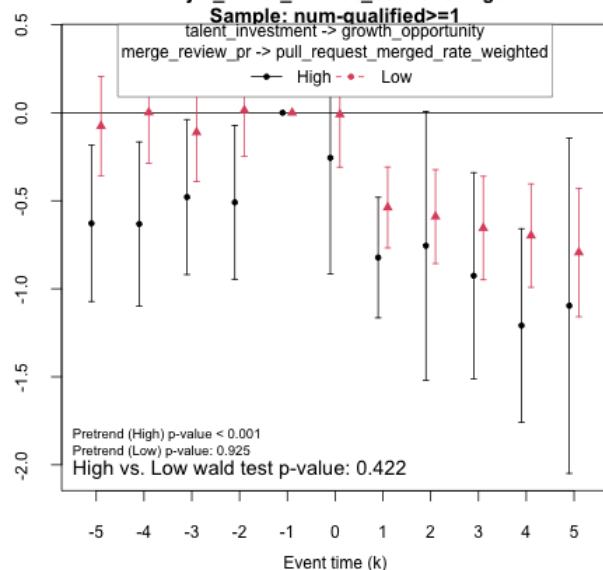
pull\_request\_merged rolling5



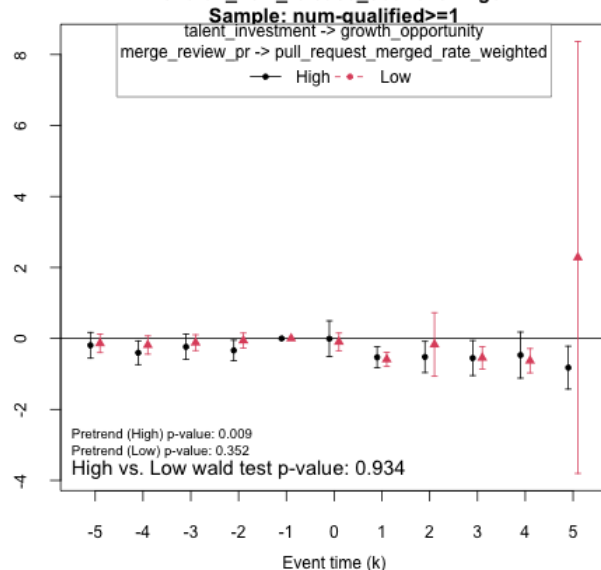
pull\_request\_opened rolling5



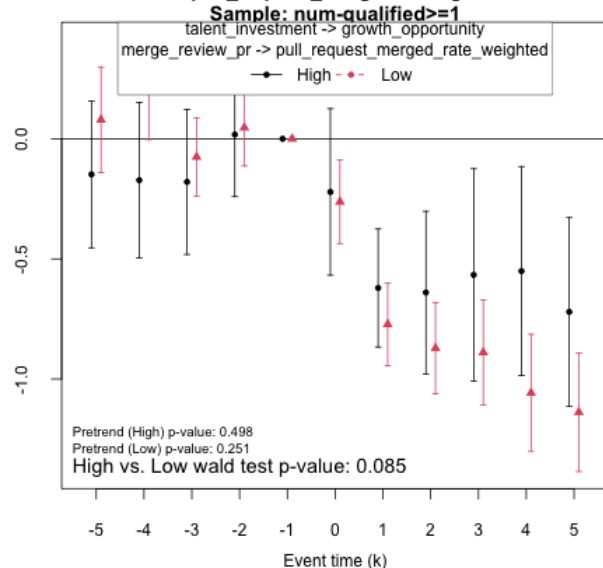
major\_minor\_release\_count rolling5



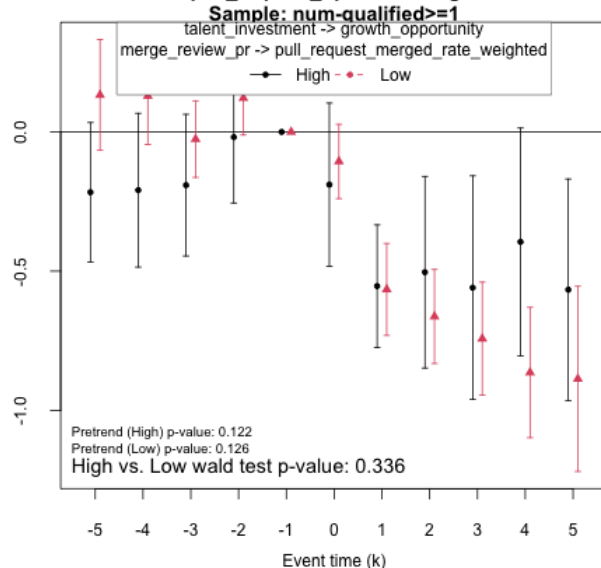
overall\_new\_release\_count rolling5



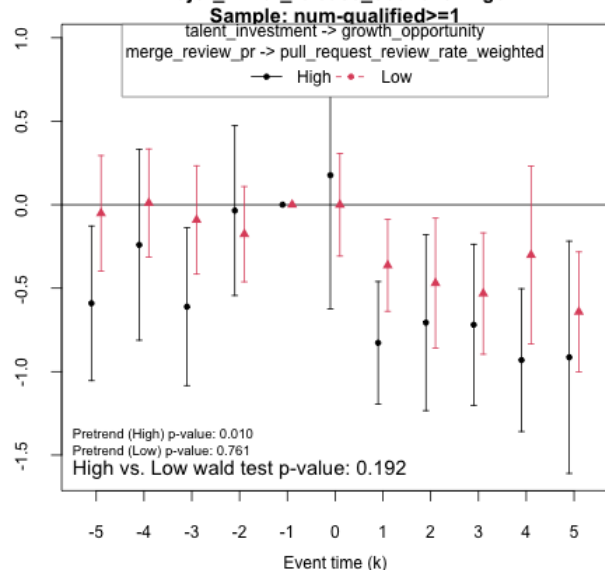
pull\_request\_merged rolling5



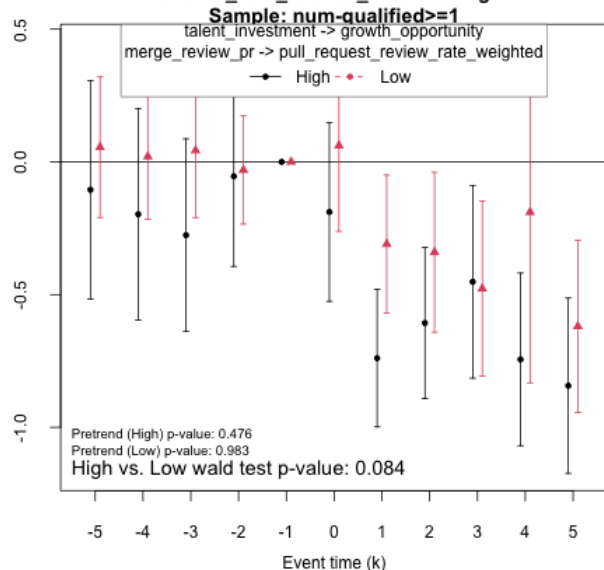
pull\_request\_opened rolling5



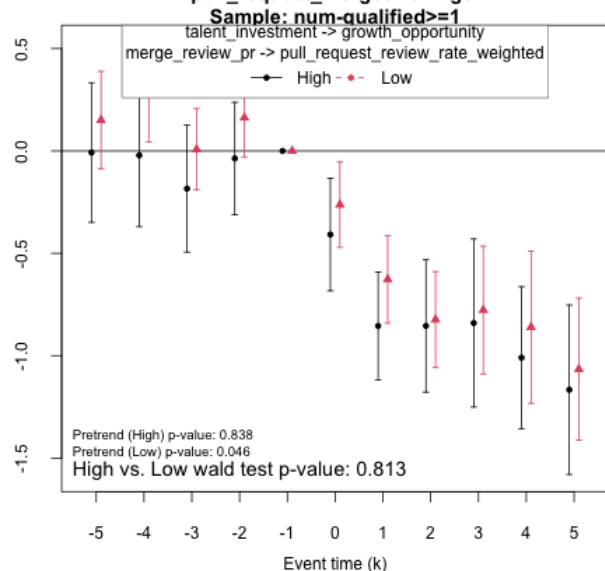
### major\_minor\_release\_count rolling5



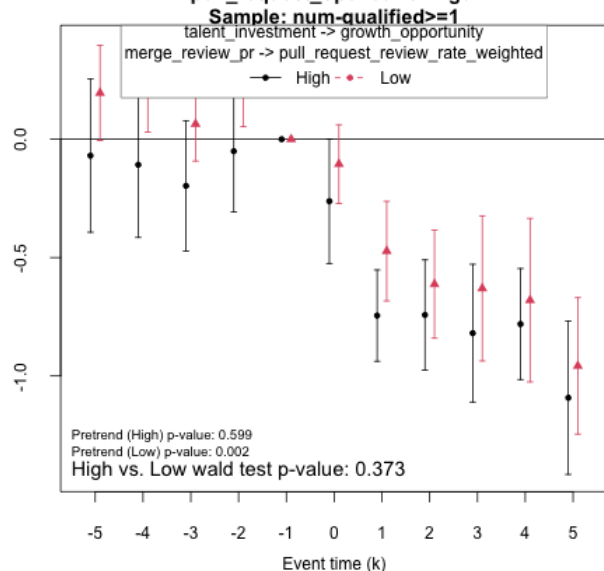
### overall\_new\_release\_count rolling5



### pull\_request\_merged rolling5



### pull\_request\_opened rolling5



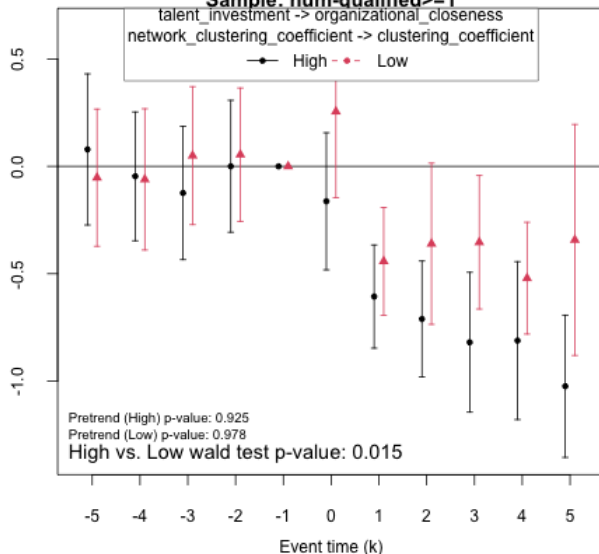
major\_minor\_release\_count rolling5

Sample: num-qualified&gt;=1

talent\_investment -&gt; organizational\_closeness

network\_clustering\_coefficient -&gt; clustering\_coefficient

—●— High —●— Low



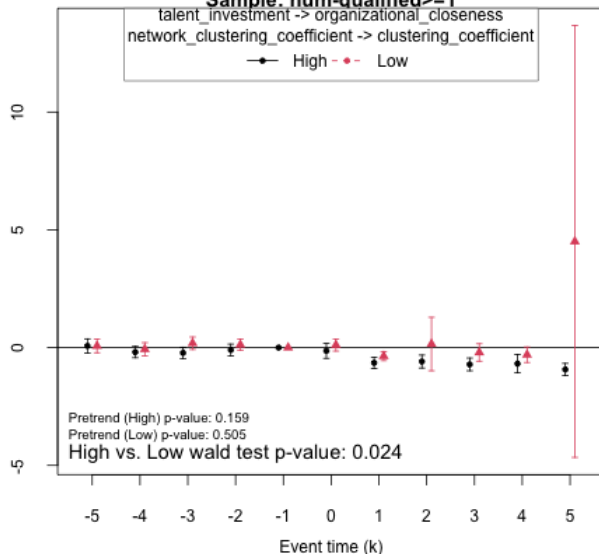
overall\_new\_release\_count rolling5

Sample: num-qualified&gt;=1

talent\_investment -&gt; organizational\_closeness

network\_clustering\_coefficient -&gt; clustering\_coefficient

—●— High —●— Low



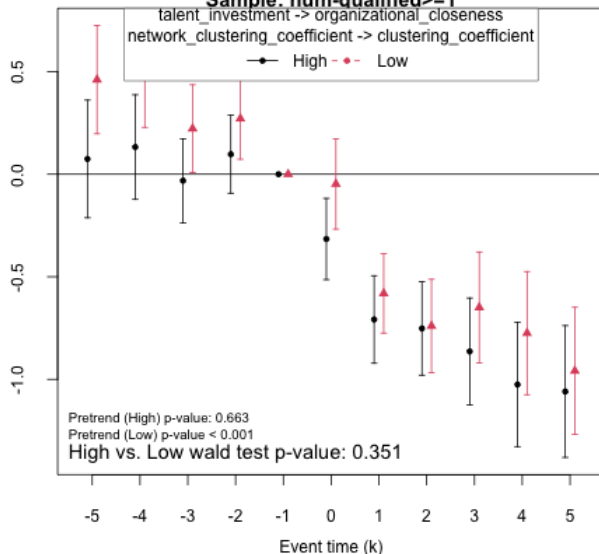
pull\_request\_merged rolling5

Sample: num-qualified&gt;=1

talent\_investment -&gt; organizational\_closeness

network\_clustering\_coefficient -&gt; clustering\_coefficient

—●— High —●— Low



pull\_request\_opened rolling5

Sample: num-qualified&gt;=1

talent\_investment -&gt; organizational\_closeness

network\_clustering\_coefficient -&gt; clustering\_coefficient

—●— High —●— Low

