Are Traditional Performance Reviews Outdated? An Empirical Analysis on Continuous, Real-Time Feedback in the Workplace

By Michael Rivera (Temple), Liangfei Qiu (Florida Warrington), Subodha Kumar, and Tony Petrucci (Both at Temple)
Presenter: Jingwei Dai, CUHK Business School
jingweidai@link.cuhk.edu.hk

Background and Motivation

- Providing regular, positive feedback is a widely accepted management and coaching practice that supports employee engagement, retention, and performance.
- Traditional approaches to employee performance management may not be ideal for these newest workers. (feel in the dark, yearly basis, no peer feedback)
- Real-time feedback applications differ from traditional systems (including both paper-and-pen systems and other online, non-application-based systems) in several important ways, and these may have implications for their implementation and effectiveness. First, real-time performance feedback applications usually reside on a mobile device like a phone, which provides a unique interface or medium with particular features that may influence the feedback process. Next, the nature of an application that provides real-time, ongoing feedback provides a channel with flexible feedback frequency, controlled by the user.

Research Question

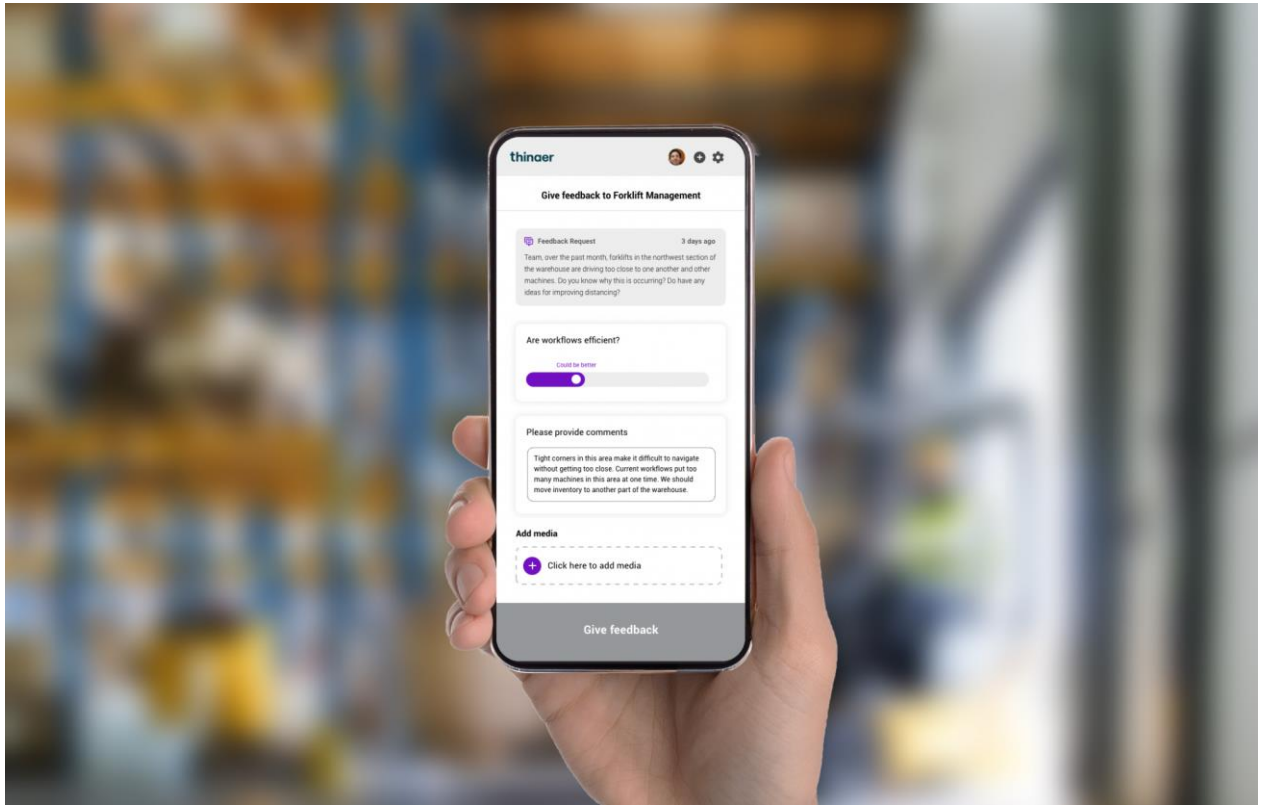
- Whether the real-time environment of application-based digital performance feedback complicates or duplicates the findings of previous performance feedback studies in four main areas: relationships between feedback giver and recipient, gender dynamics, the effects of favoritism and anonymity, and the impact of feedback on behavior.

Hypotheses

- H1: Recipients tend to receive lower scores from supervisors than from subordinates and peers.
- H2: When providing real-time feedback through an application, men will rate women less harshly than their male counterparts.
- H3: Employees adopt a tit-for-tat strategy when rating each other in a real-time application-based environment.
- H4: Anonymity will negatively impact real-time ratings in an application-based environment.
- H5: In a real-time feedback environment, scores of recipients with initial low scores increase more significantly than those of other recipients.

Context: DevelapMe

The DevelapMe application (https://www.develapme.com/) enables employees to give, seek, and receive real-time, competency-based feedback using their computers, smartphones, or other devices.



Pic Source: https://thinaer.io/redirect-dm/

Data

The DevelapMe data used in this study includes around 5,000 instances of feedback within the application.
These feedback instances were provided by employees across five different organizations spanning pharmaceutical, healthcare, interior design, and payment processing industries.

Data was collected for four organizations between February 2017 and June 2017

Variables

Table 1. Definition and Summary Statistics of Main Variables

Variable Definition	Variable	Mean	Std. dev.	Min	Max
Feedback score	$Score_{ijt}$	4.699	0.655	1	5
A dummy variable indicating whether rater *i* is ratee *j*'s subordinate	$Subordinate_{ij}$	0.162	0.368	0	1
A dummy variable indicating whether rater *i* is ratee *j*'s peer	$Peer_{ij}$	0.447	0.497	0	1
A dummy variable indicating whether rater *i* is ratee *j*'s supervisor	$Supervisor_{ij}$	0.186	0.389	0	1
A dummy variable indicating whether the rating relation is anonymous	$Anon_{ij}$	0.205	0.404	0	1
A dummy variable indicating whether a female rater rates a female ratee	FF_{ij}	0.259	0.438	0	1
A dummy variable indicating whether a female rater rates a male ratee	FM_{ij}	0.197	0.389	0	1
A dummy variable indicating whether a male rater rates a female ratee	MF_{ij}	0.225	0.418	0	1
A dummy variable indicating whether a male rater rates a male ratee	MM_{ij}	0.319	0.466	0	1
Average rating that recipient *j* receives up until time *t*	$AveRecipientGotRated_{jt}$	4.739	0.314	1	5
Average rating that giver *i* gives up until time *t*	$AveGiverRatedOthers_{it}$	4.734	0.349	1	5
Average rating that giver *i* receives up until time *t*	$AveGiverGotRated_{it}$	4.767	0.294	3	5
Average rating that recipient *j* gives up until time *t*	$AveRecipientRatedOthers_{jt}$	4.722	0.322	2	5

Empirical Application

● Direct Effect of Relationship Status

We first examine the impact of the relationship of the user giving feedback respective to the user receiving the feedback (e.g., Supervisor, Subordinate, Peer) on rating/feedback behavior. We consider the following fixed effects model:

$$Score_{ijt} = a_i + \beta_0 + \beta_1 Subordinate_{ij} + \beta_2 Peer_{ij} + \beta_3 Anon_{ij} + \beta_4 AveRecipientGotRated_{jt} + \beta_5 AveGiverRatedOthers_{it} + \beta_6 AveGiverGotRated_{it} + \beta_7 AveRecipientRatedOthers_{jt} + \beta_8 RecipientTime_{jt} + controls + \varepsilon_{ijt}, \quad (1a)$$

where $Score_{ijt}$ is the score that employee i rates j at time t, a_i is the unobserved individual fixed effect, $Subordinate_{ij}$ is a dummy variable indicating whether employee i is j's subordinate (Yes: 1; No: 0), $Peer_{ij}$ is a dummy variable indicating whether employee i is j's peer (Yes: 1; No: 0), and $Anon_i$ is a dummy variable indicating whether employee i rates j anonymously (Yes: 1; No: 0).

Empirical Application

- **Direct Effect of Relationship Status**

Table 3. The Impact of Rating Relationship on Feedback Scores

VARIABLES	(1) Full Sample	(2) Initial rating <4	(3) Full Sample	(4) Tit-for-tat	(5) Tit-for-tat	(6) Tit-for-tat	(7) Random trend	(8) Heckman model
Subordinate	0.184***	0.184***	0.289***	0.208***	1.081***	0.208***	0.176***	0.164***
	[4.304]	[4.305]	[3.527]	[2.875]	[3.660]	[2.872]	[4.246]	[4.012]
Peer	0.195***	0.195***	0.271***	0.213***	1.102***	0.237	0.186***	0.183***
	[5.605]	[5.587]	[3.832]	[3.404]	[3.696]	[0.843]	[5.237]	[5.137]
Anon	-0.259***	-0.260***	-0.364***	-0.471***	0.414	-0.472***	-0.248***	-0.203***
	[-6.479]	[-6.488]	[-4.369]	[-6.445]	[1.383]	[-6.430]	[-6.365]	[-5.348]
AveRecipientGotRated	-0.00642	-0.000745		0.0294	0.0483	0.0295	-0.00873	-0.00254
	[-0.182]	[-0.0185]		[0.487]	[0.798]	[0.489]	[-0.165]	[-0.226]
AveGiverRatedOthers	-0.0765	-0.0743	-0.369**	-0.0477	-0.0488	-0.0477	-0.0743	-0.0439
	[-1.613]	[-1.556]	[-2.490]	[-0.716]	[-0.734]	[-0.715]	[-1.504]	[-1.523]
AveGiverGotRated	0.316***	0.315***	0.894***	0.114	0.0809	0.114	0.322***	0.287***
	[4.799]	[4.783]	[5.915]	[0.916]	[0.650]	[0.918]	[4.853]	[4.032]
AveRecipientRatedOthers	0.169***	0.168***	0.276***	0.0850	0.0819	0.0845	0.172***	0.154***
	[4.617]	[4.589]	[3.288]	[1.204]	[1.163]	[1.192]	[4.723]	[4.116]
AveRatingFromSubordinate			-0.180***					
			[-3.455]					
AveRatingFromPeer			0.0908					
			[0.963]					
AveRatingFromSupervisor			0.133***					
			[2.981]					
AveRatingFromAnon			-0.0422					
			[-1.235]					
RecipientTime	0.000626	0.000584	0.000637	0.000128	0.000163	-0.000129	0.000612	0.000756
	[1.144]	[1.573]	[0.574]	[0.252]	[0.323]	[-0.254]	[1.103]	[1.325]
RecipientTime*InitialRating<4		0.00372**						
		[2.104]						
InitialRating<4		-0.0125						
		[-0.381]						
Tit-for-tat				0.0427	-0.0148	0.0444		
				[1.339]	[-0.400]	[1.188]		
Supervisor*TitForTat					0.196***			
					[3.049]			
Peer*TitForTat						-0.00515		
						[-0.0865]		
Organization dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Group dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Competency dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,975	4,975	3,860	1,546	1,546	1,546	4,975	4,975

Robust t-statistics in brackets, *** p<0.01, ** p<0.05, * p<0.1

Robustness Check

Correlated Random Trend Model
Heckman-Type Model
Ceiling Effect

Moderating Factors

Previous Ratings
Tit for Tat
Gender
Current Rating on Future Rating
Dimension


THANK
YOU