Occupational Health Clinics for Ontario Workers

Centre de Santé des Travailleurs(ses) de l'Ontario

Short/"Pulse" survey experience Case Study (hypothetical case ☺)

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background

- Constant demand for a **shorter survey** (pollsters say 7 minutes is optimum – ours is typically a median of 18-23 minutes)
- **Past experience** was that when the results from a shortened survey were presented, we answered a number of questions about the results with “if you would have used the full version, we could have answered that question”.
- More recently consulting companies have asked about using COPSOQ questions/scales in **weekly/monthly pulse surveys**
- Originally we dissed these enquiries out of hand (we can barely detect a meaningful difference a year later, let alone weeks or months), however, the enquiries became persistent so we thought we would **take the question more seriously**

Workplace Psychosocial Fac

Welcome to StressAssess

Face validity question: can this be a valid assessment if so many factors are missing?

Demands at work:
quantitative demands (QD2, QD3)
work pace (WP1, WP2)
emotional demands (ED1, EDX2, ED3)

Work organization & job content:
influence at work (INX1, IN3)
possibilities for development (PD1, PD2, PD3)
meaning of work (MW1, MW2)
commitment to the workplace (CW2, CWX3)

Interpersonal relationships & leadership:
Predictability (PR1, PR2)
Recognition (RE1, RE3)
role clarity (CL1, CL3)
quality of leadership (QL2, QL3, QL4)
supervisor support (SSX1, SSX2)
colleague support (SCX1, SW1)
role conflicts (CO2, CO3, IT1)

Work-individual interface:
insecurity over employmer
conditions (JI1, JI3, IW1)
job satisfaction (JS4)
work life conflict (WFX1, WF2, WF3)

Social Capital (workplace values):
vertical trust (TM1, TMX2)
justice & respect (JU1, JU4)

Workplace culture/climate:
accident investigation orientation
tolerance of behaviours harmful to mental health
rating of psychological H&S

Offensive behaviours:
sexual harassment (SH); **threats of violence** (TV); **physical violence** (PV) **bullying**(BU); **discrimination; vicarious offensive behaviours**

nd H&S concerns

Quality of Work (QW1)

ergonomics
dangerous chemicals
biological
radiation
driving
safety
working alone

COPSOQ International Network

Symptoms & health:
self-rated health (GH1)
burnout (BO1, BO2, BO3, BO4)
sleeping troubles (SL2, SL4)
somatic symptoms (SO1, SO2)
cognitive symptoms (CS2, CS4)
GAD-2 (anxiety symptom screening)
PHQ-2 (depression symptom screening)

Workplace simulation example

- We have a (non-COPSOQ) question in StressAssess that was originally developed by a PhD candidate in organizational psychology (although she abandoned it after it didn't produce the results she had hoped for)
- A simple global question: How would you rate the psychological health and safety climate in your workplace?

  - ☐1 healthy/supportive
  - √ ☐2 good
  - ☐3 fair
  - ☐4 neutral
  - ☐5 not so good
  - ☐6 poor
  - ☐7 toxic

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RESEARCH ARTICLE

WILEY AMERICAN JOURNAL OF INDUSTRIAL MEDICINE

Dissecting the effect of workplace exposures on workers' rating of psychological health and safety

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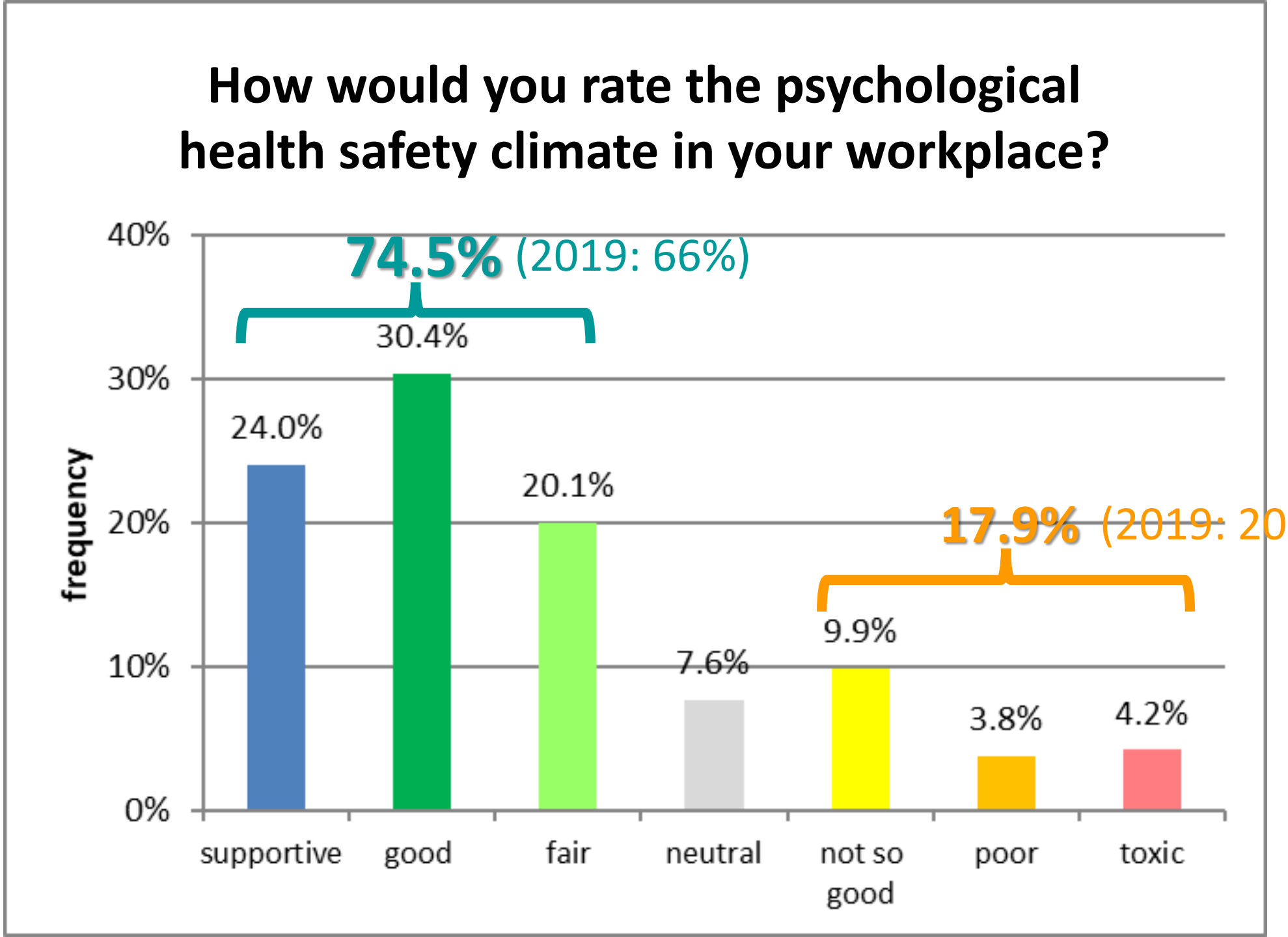
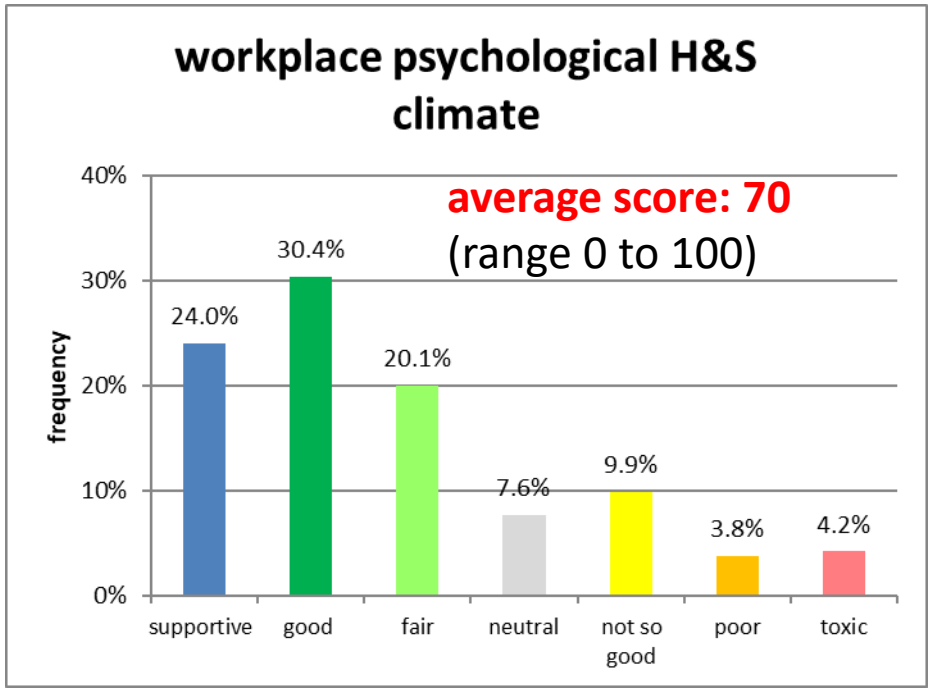
Workplace culture:



Workplace simulation example

- Now suppose we used this single question as periodic pulse survey in an organization of **60 workers**
- The organization is split into **6 departments** of 10 workers each
- If we convert the 7 option Likert scale into a scale from 0 to 100, the **possible individual scores** would be:

$\square_1$	healthy/supportive	=	100
$\square_2$	good	=	83
$\square_3$	fair	=	67
$\square_4$	neutral	=	50
$\square_5$	not so good	=	33
$\square_6$	poor	=	17
$\square_7$	toxic	=	0


workplace psychological H&S climate
average score: 70
(range 0 to 100)
frequency
40%
30%
20%
10%
0%
24.0%
30.4%
20.1%
7.6%
9.9%
3.8%
4.2%
supportive
good
fair
neutral
not so good
poor
toxic


dept M1
ave: 68
dept M2
ave: 67

dept U1

ave: 83

dept U2

ave: 77

dept M1

ave: 68

dept M2

ave: 67

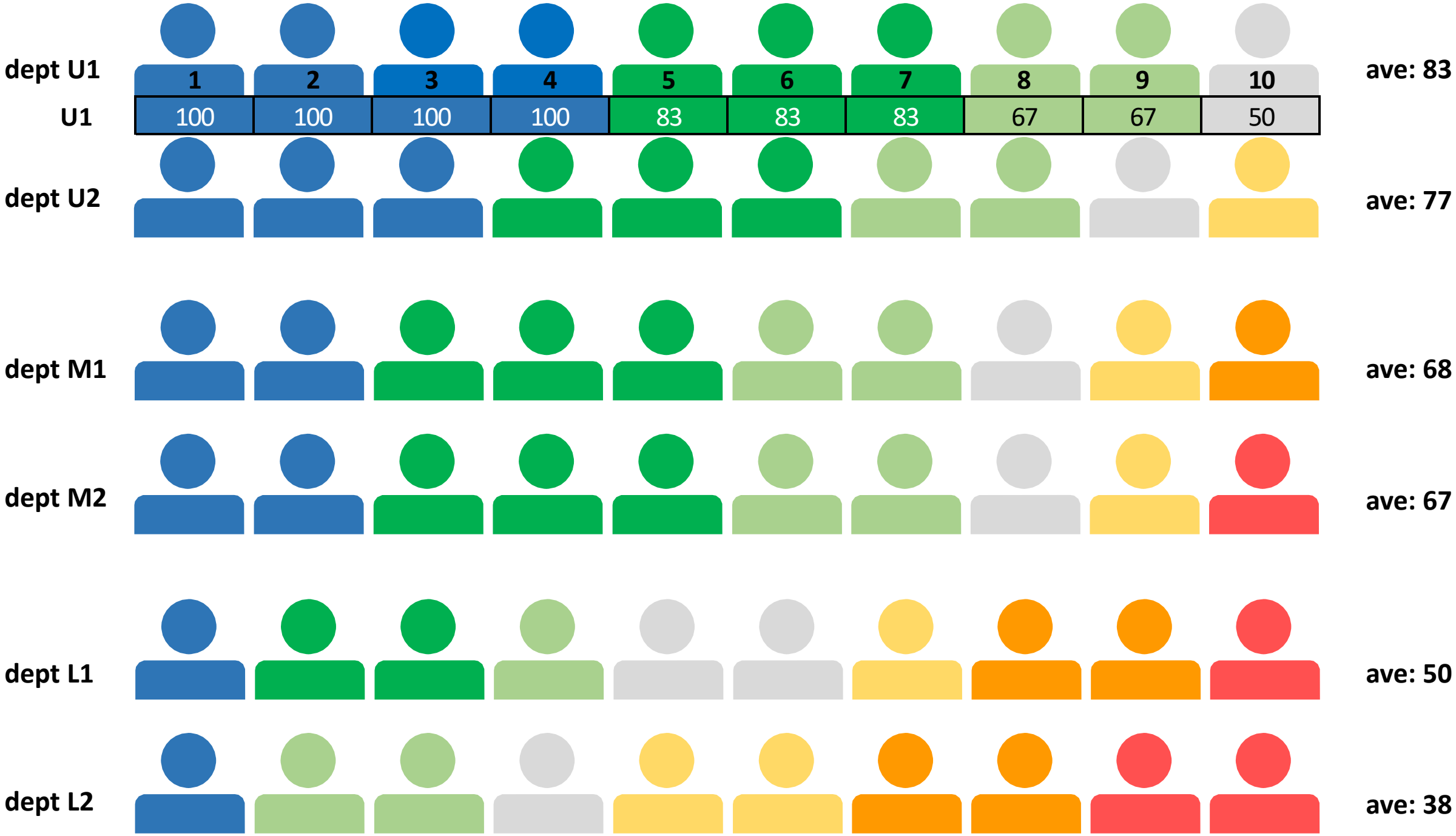
dept L1

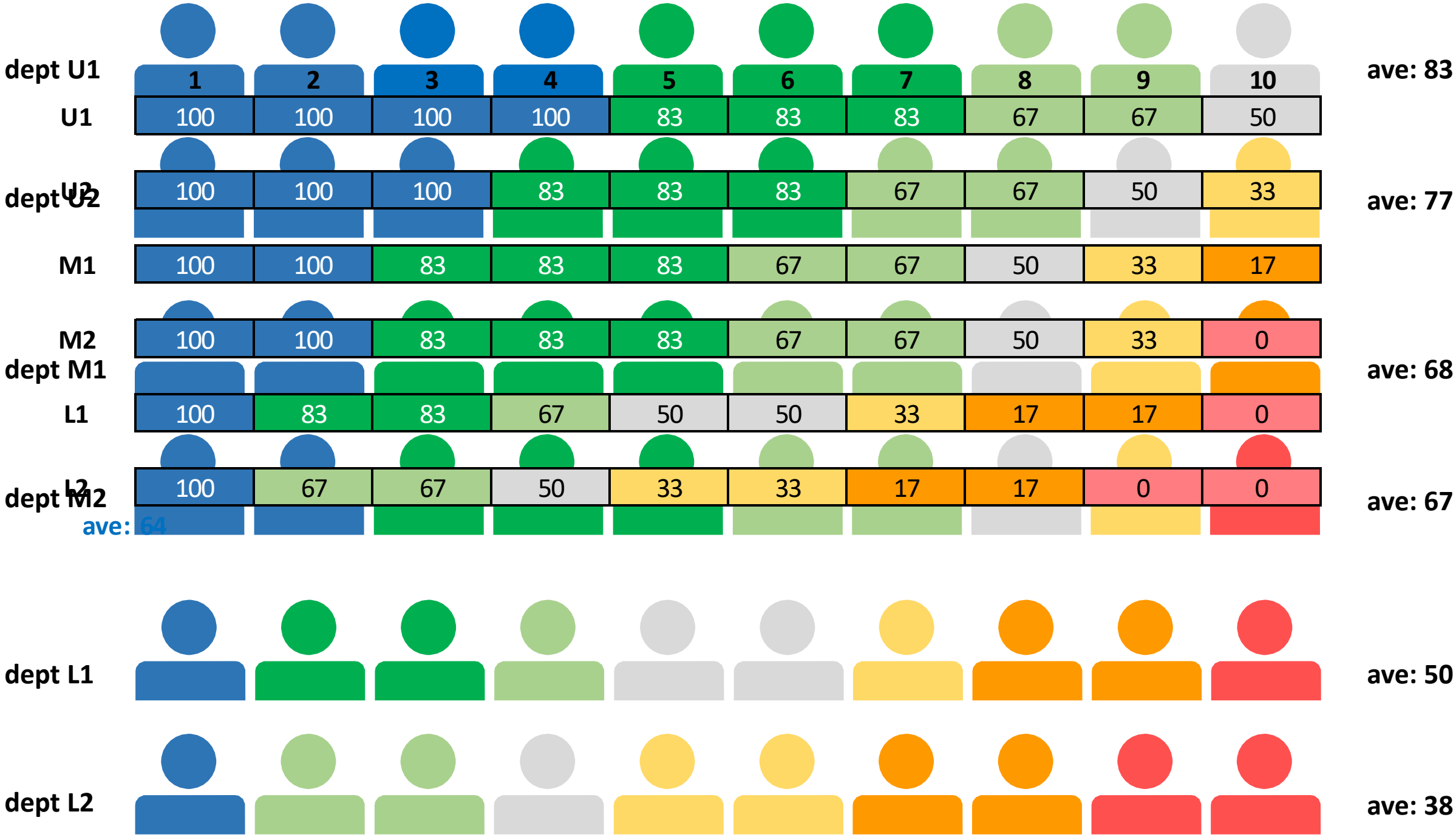
ave: 50

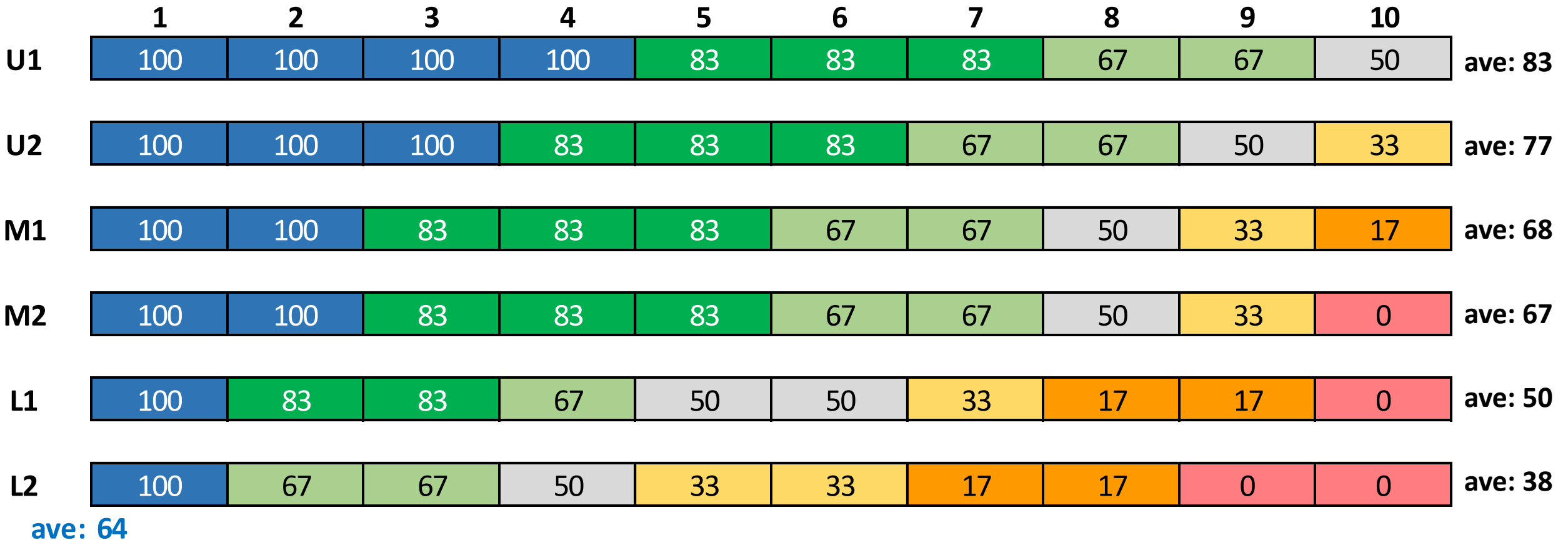
dept L2

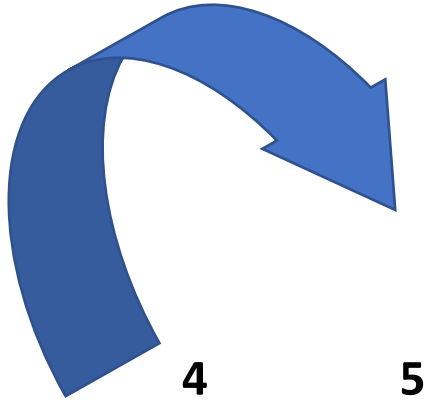
ave: 38


dept U1
ave: 83
dept U2
ave: 77
Our overall average score is 64, a little lower than the typical Canadian worker's rating of 70, but that's why they came to us for help ☺
dept M1
ave: 68
dept M2
ave: 67
dept L1
ave: 50
dept L2
ave: 38


dept U1
1 2 3 4 5 6 7 8 9 10
U1
100 100 100 100 83 83 83 67 67 50
ave: 83
dept U2
ave: 77
dept M1
ave: 68
dept M2
ave: 67
dept L1
ave: 50
dept L2
ave: 38

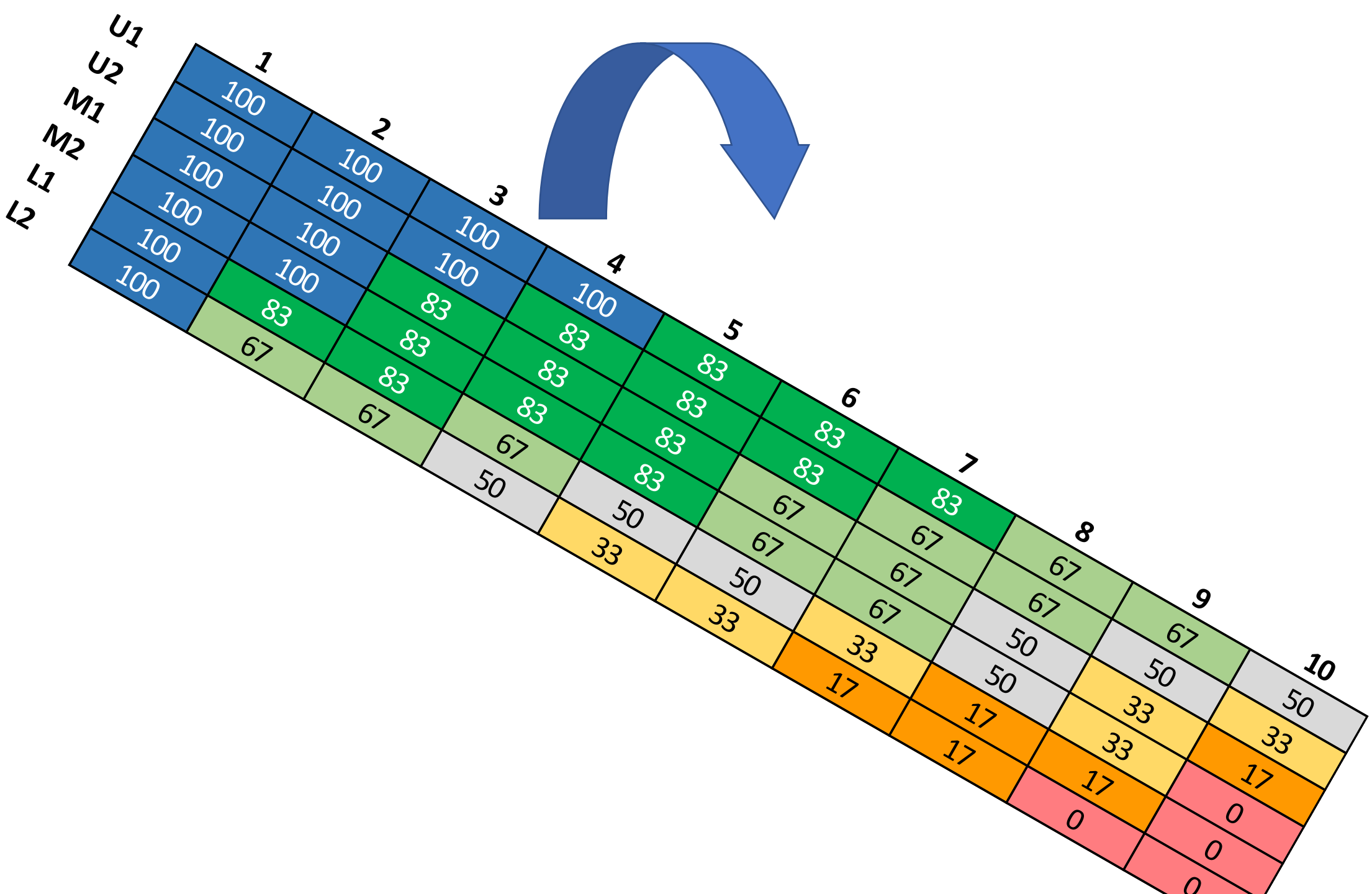

dept U1
1 2 3 4 5 6 7 8 9 10
U1 100 100 100 100 83 83 83 67 67 50
ave: 83
U2 100 100 100 83 83 83 67 67 50 33
dept U2
ave: 77
M1 100 100 83 83 83 67 67 50 33 17
M2 100 100 83 83 83 67 67 50 33 0
dept M1
ave: 68
L1 100 83 83 67 50 50 33 17 17 0
L2 100 67 67 50 33 33 17 17 0 0
dept M2
ave: 67
ave: 64
dept L1
ave: 50
dept L2
ave: 38


1 2 3 4 5 6 7 8 9 10
U1 100 100 100 100 83 83 83 67 67 50 ave: 83
U2 100 100 100 83 83 83 67 67 50 33 ave: 77
M1 100 100 83 83 83 67 67 50 33 17 ave: 68
M2 100 100 83 83 83 67 67 50 33 0 ave: 67
L1 100 83 83 67 50 50 33 17 17 0 ave: 50
L2 100 67 67 50 33 33 17 17 0 0 ave: 38
ave: 64



	1	2	3	4	5	6	7	8	9	10	
U1	100	100	100	100	83	83	83	67	67	50	ave: **83**
U2	100	100	100	83	83	83	67	67	50	33	ave: **77**
M1	100	100	83	83	83	67	67	50	33	17	ave: **68**
M2	100	100	83	83	83	67	67	50	33	0	ave: **67**
L1	100	83	83	67	50	50	33	17	17	0	ave: **50**
L2	100	67	67	50	33	33	17	17	0	0	ave: **38**

100% response rate, average score = **64**


U1
U2
M1
M2
L1
L2
1
2
3
4
5
6
7
8
9
10
100 100 100 100 100 100 100 100 100 100
100 100 100 100 100 100 100 100 100 83
100 100 100 100 100 100 100 100 83 67
100 100 100 100 100 100 100 83 67 50
100 100 100 100 100 100 83 67 50 33
100 100 100 100 100 83 67 50 33 17
100 100 100 100 83 67 50 33 17 0
100 100 100 83 67 50 33 17 0 0
100 100 83 67 50 33 17 0 0 0
100 83 67 50 33 17 0 0 0 0

	1	2	3	4	5	6	7	8	9	10
U1	100	100	100	100	83	83	83	67	67	50
U2	100	100	100	83	83	83	67	67	50	33
M1	100	100	83	83	83	67	67	50	33	17
M2	100	100	83	83	83	67	67	50	33	0
L1	100	83	83	67	50	50	33	17	17	0
L2	100	67	67	50	33	33	17	17	0	0

	1	2	3	4	5	6	7	8	9	10
U1	100	100	100	100	83	83	83	67	67	50
U2	100	100	100	83	83	83	67	67	50	33
M1	100	100	83	83	83	67	67	50	33	17
M2	100	100	83	83	83	67	67	50	33	0
L1	100	83	83	67	50	50	33	17	17	0
L2	100	67	67	50	33	33	17	17	0	0

	1	2	3	4	5	6
U1	100	100	100	100	83	83
U2	100	100	100	83	83	83
M1	100	100	83	83	83	67
M2	100	100	83	83	83	67
L1	100	83	83	67	50	50
L2	100	67	67	50	33	33

	1	2	3	4	5	6	7	8	9	10
U1	100	100	100	100	83	83	83	67	50	33
U2	100	100	100	83	83	83	67	50	33	17
M1	100	100	83	83	83	67	67	50	33	17
M2	100	100	83	83	83	67	67	50	33	17
L1	100	83	83	67	50	50	33	17	17	0
L2	100	67	67	50	33	33	17	17	0	0

	1	2	3	4	5	6	7	8	9	10
U1	100	100	100	100	83	83	83	67	50	33
U2	100	100	100	83	83	83	67	50	33	17
M1	100	100	83	83	83	67	67	50	33	17
M2	100	100	83	83	83	67	67	50	33	17
L1	100	83	83	67	50	50	33	17	17	0
L2	100	67	67	50	33	33	17	17	0	0

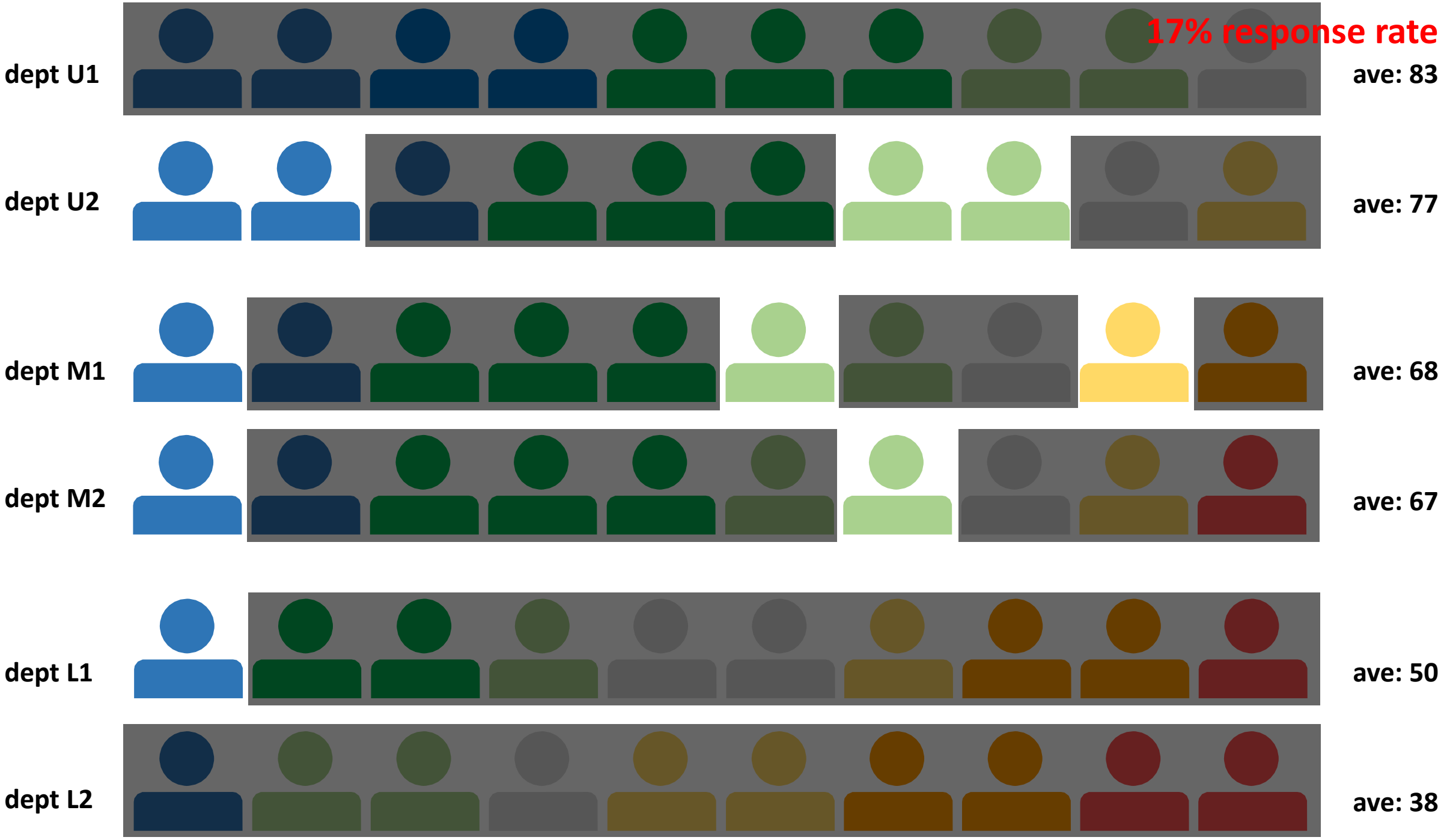
	U1	U2	M1	M2	L1	L2
1	100	100	100	100	100	100
2	100	100	100	100	83	67
3	100	100	83	83	83	67
4	100	83	83	83	67	50
5	83	83	83	83	50	33
6	83	83	67	67	50	33
7	83	67	67	67	33	17
8	67	67	50	50	17	17
9	67	50	33	33	17	0
10	50	33	17	0	0	0

	U1	U2	M1	M2	L1	L2
1	100	100	100	100	100	100
2	100	100	100	100	83	67
3	100	100	83	83	83	67
4	100	83	83	83	67	50
5	83	83	83	83	50	33
6	83	83	67	67	50	33
7	83	67	67	67	33	17
8	67	67	50	50	17	17
9	67	50	33	33	17	0
10	50	33	17	0	0	0
	ave: **83**	ave: **77**	ave: **68**	ave: **67**	ave: **50**	ave: **38**

overall average: 64


dept U1
ave: 83
dept U2
ave: 77
dept M1
ave: 68
dept M2
ave: 67
dept L1
ave: 50
dept L2
ave: 38

17% response rate

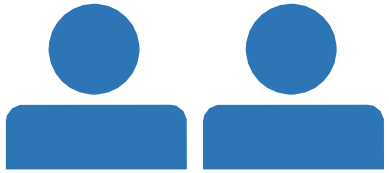


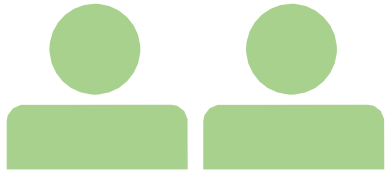
17% response rate

dept U1

ave: n/a
actual: 83

dept U2





ave: 84
actual: 77

dept M1

ave: 67
actual: 68

dept M2

ave: 83
actual: 67

dept L1

ave: 100
actual: 50

dept L2

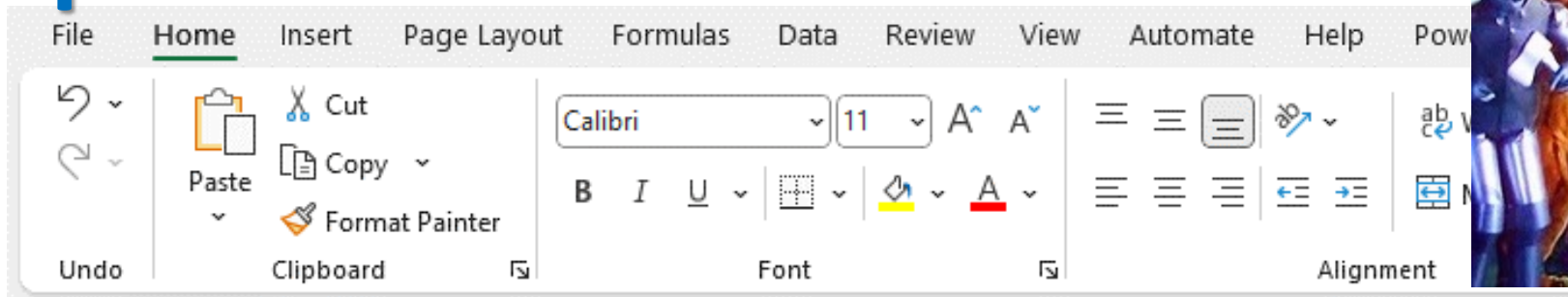
ave: n/a
actual: 38

17% response rate

	0% rr U1	40% rr U2	30% rr M1	20% rr M2	10% rr L1	0% rr L2
1		100	100	100	100	
2		100				
3						
4						
5						
6			67			
7		67		67		
8		67				
9			33			
10						
	ave: n/a	ave: **85**	ave: **67**	ave: **84**	ave: **100**	ave: n/a

overall average: 82

A peek behind the curtain:



J14 | =RAND()

	A	B	C	D	E	F	G
1		U1	U2	M1	M2	L1	L2
2	1		100	100	100	100	
3	2		100				
4	3		100				
5	4		83				
6	5		83				
7	6		83	67			
8	7		67		67		
9	8		67				
10	9			33			
11	10						
12							
13		0.2	10	16.7%			

17% response rate

	U1	U2	M1	M2	L1	L2
1		100	100	100	100	
2		100				
3						
4						
5						
6			67			
7		67		67		
8		67				
9			33			
10						

overall average: 82

35% response rate

	30% rr U1	30% rr U2	30% rr M1	40% rr M2	40% rr L1	40% rr L2
1						100
2		100				
3		100		83		
4	100	83		83	67	50
5			83		50	
6	83				50	
7			67			17
8						17
9				33	17	
10	50		17	0		
	ave: **78**	ave: **94**	ave: **56**	ave: **50**	ave: **46**	ave: **46**

overall average: 60

62% response rate

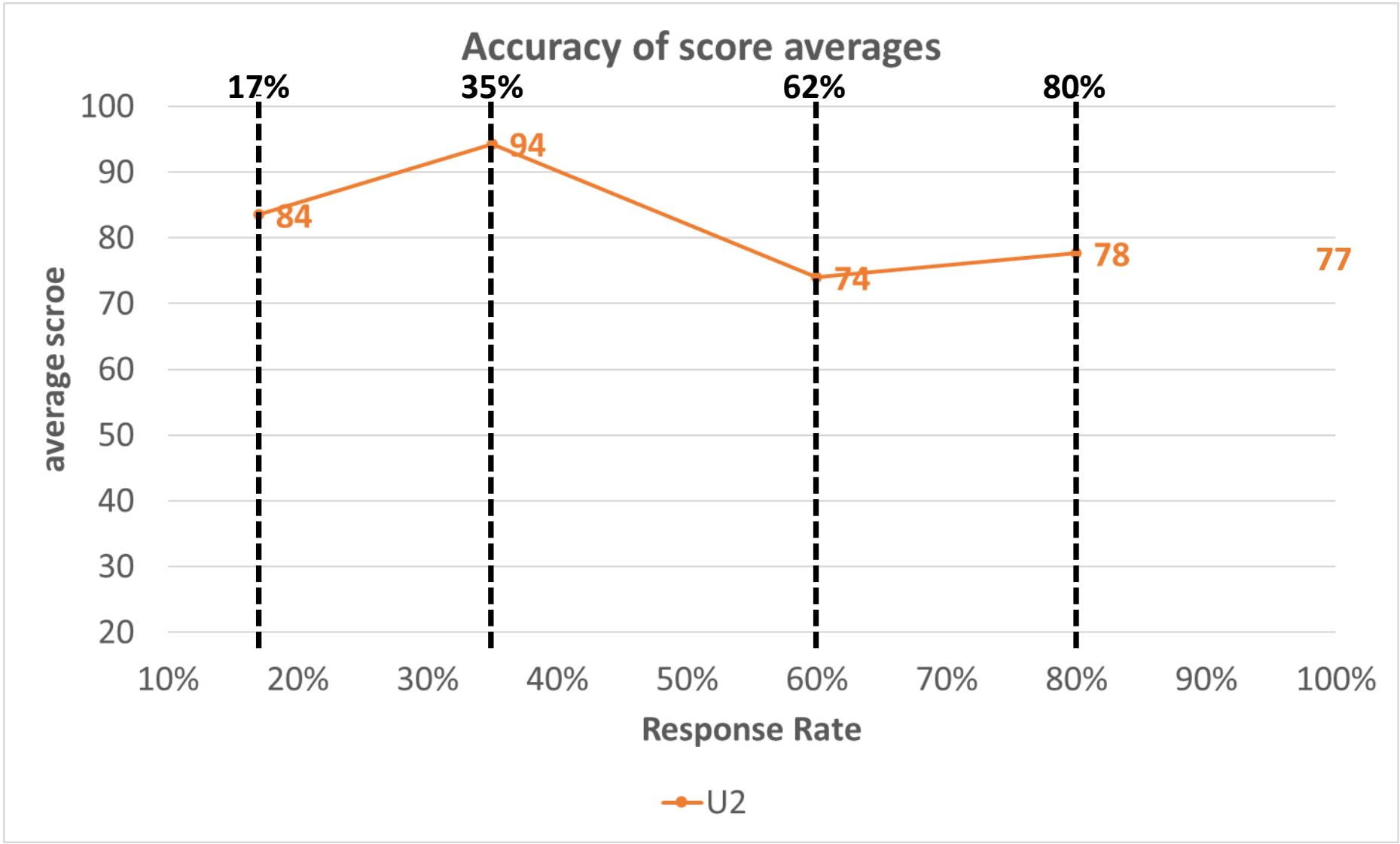
	80% rr U1	60% rr U2	30% rr M1	70% rr M2	60% rr L1	80% rr L2
1	100				100	
2	100	100		100	83	67
3	100	100			83	67
4				83		
5	83	83	83		50	33
6	83	83	67	67	50	33
7				67	33	17
8	67	67		50		17
9	67		33	33		0
10	50	33		0		0
	ave: **81**	ave: **78**	ave: **61**	ave: **57**	ave: **67**	ave: **29**

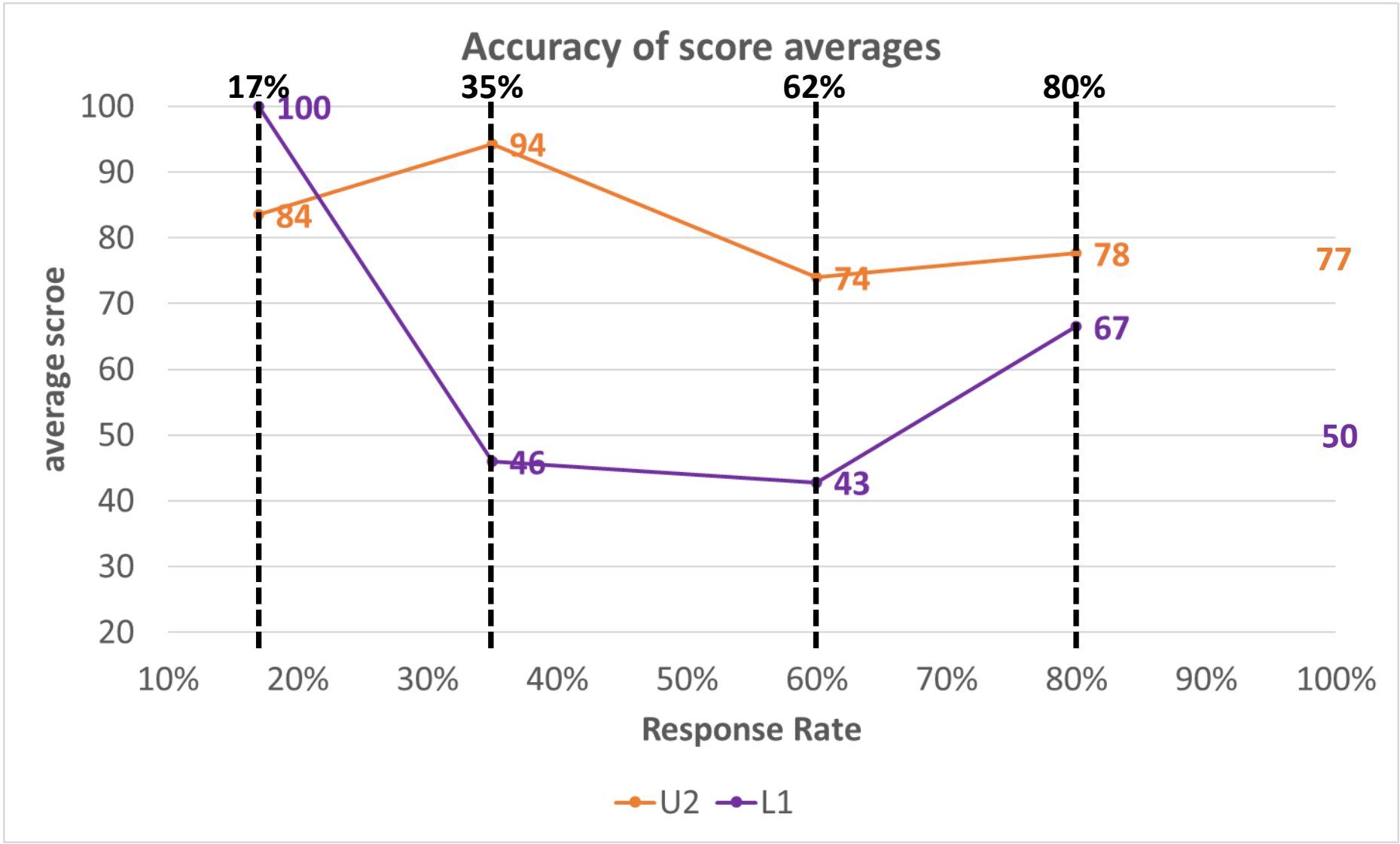
overall average: 61

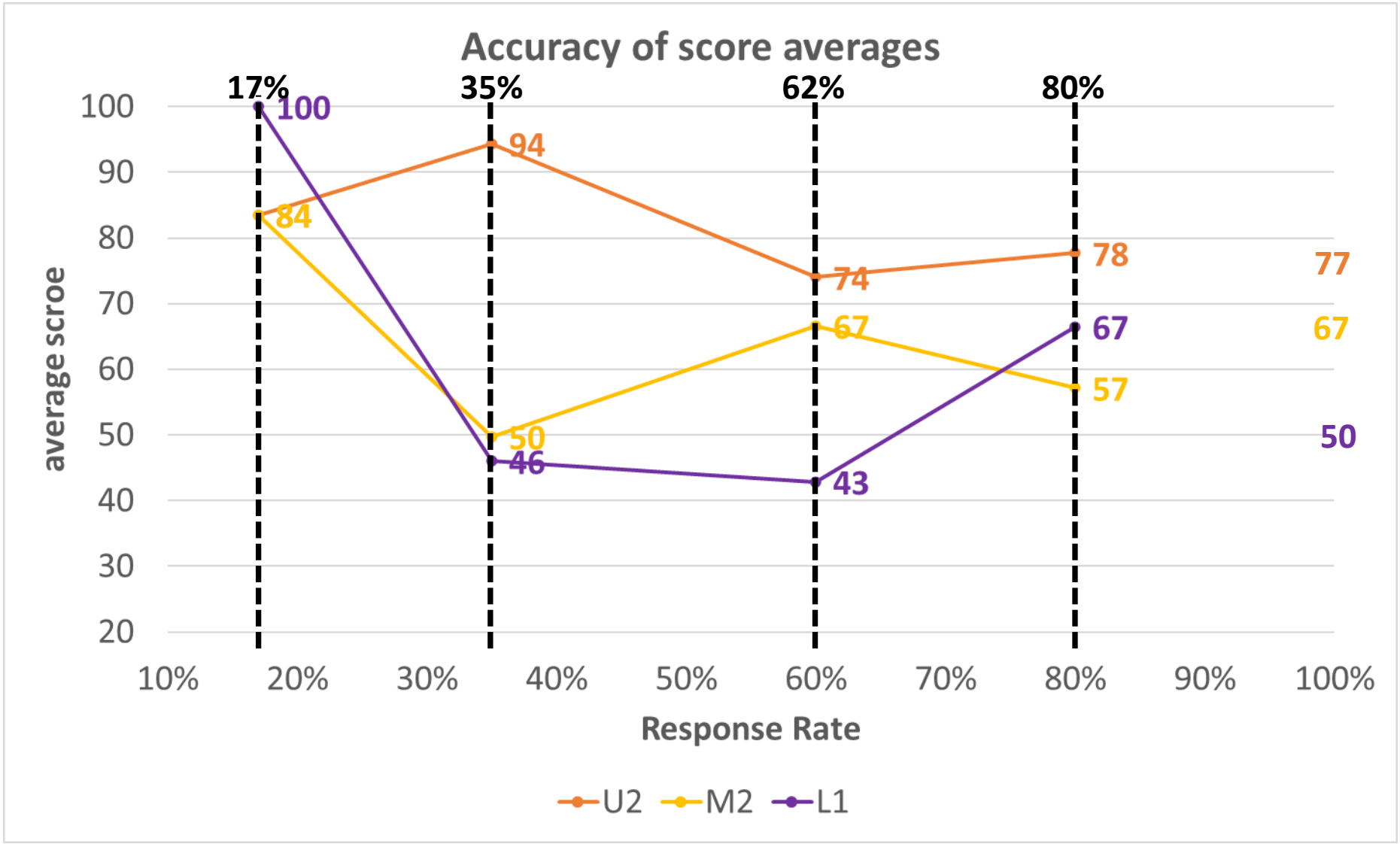
80% response rate

	90% rr U1	90% rr U2	70% rr M1	100% rr M2	70% rr L1	60% rr L2
1	100	100	100	100	100	
2	100		100	100		
3	100	100	83	83	83	67
4		83		83		
5	83	83	83	83		33
6	83	83		67	50	33
7	83	67	67	67	33	17
8	67	67	50	50	17	
9	67	50	33	33	17	0
10	50	33		0	0	0
	ave: **81**	ave: **74**	ave: **74**	ave: **67**	ave: **43**	ave: **25**

overall average: 63


Accuracy of score averages
17%
35%
62%
80%
100
90
80
70
60
50
40
30
20
average scroe
84
94
74
78
77
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Response Rate
U2


Accuracy of score averages
17%
35%
62%
80%
100
90
80
70
60
50
40
30
20
average scroe
100
94
84
74
78
77
67
50
46
43
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Response Rate
U2
L1


Accuracy of score averages
17%
35%
62%
80%
100
90
80
70
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40
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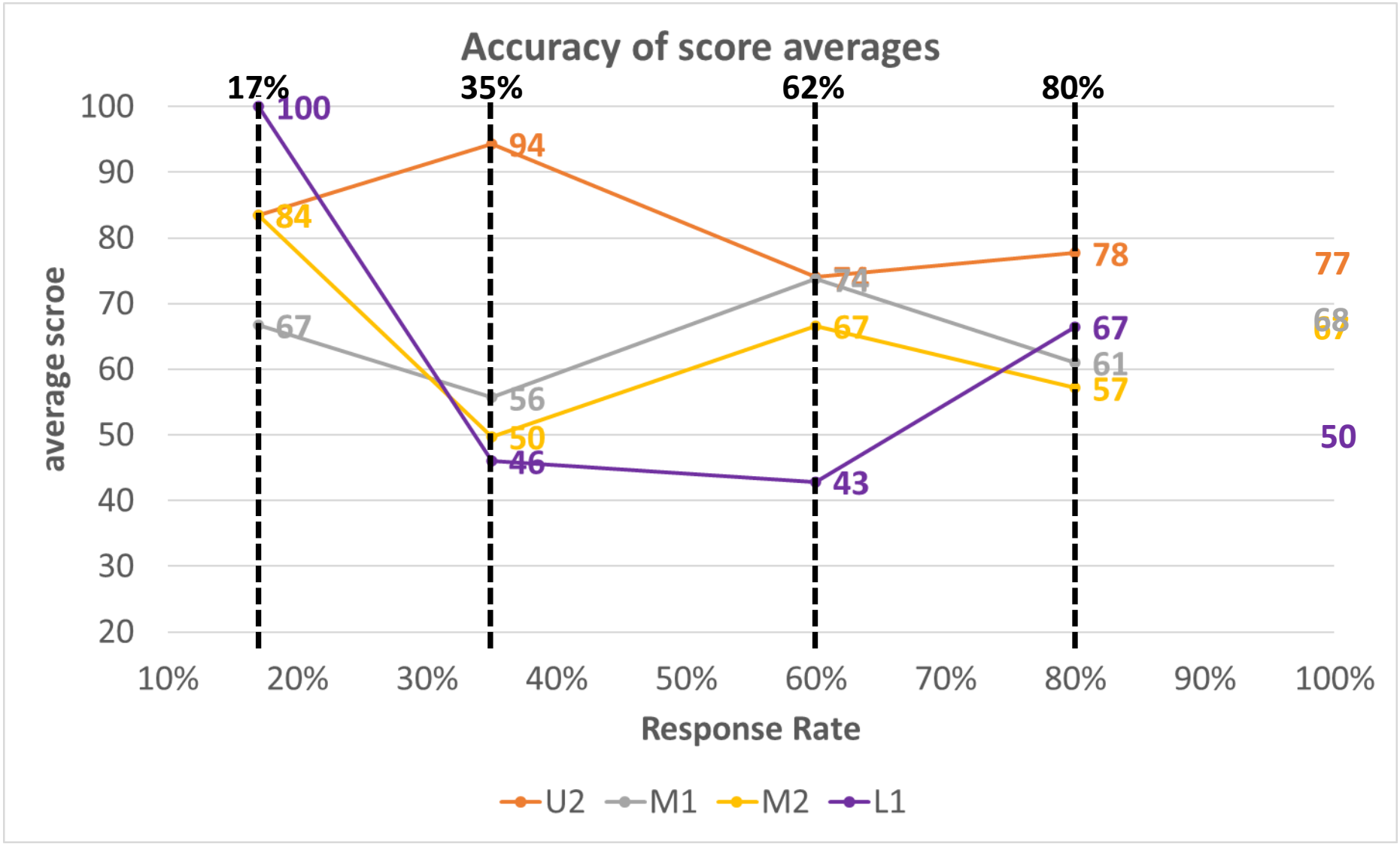
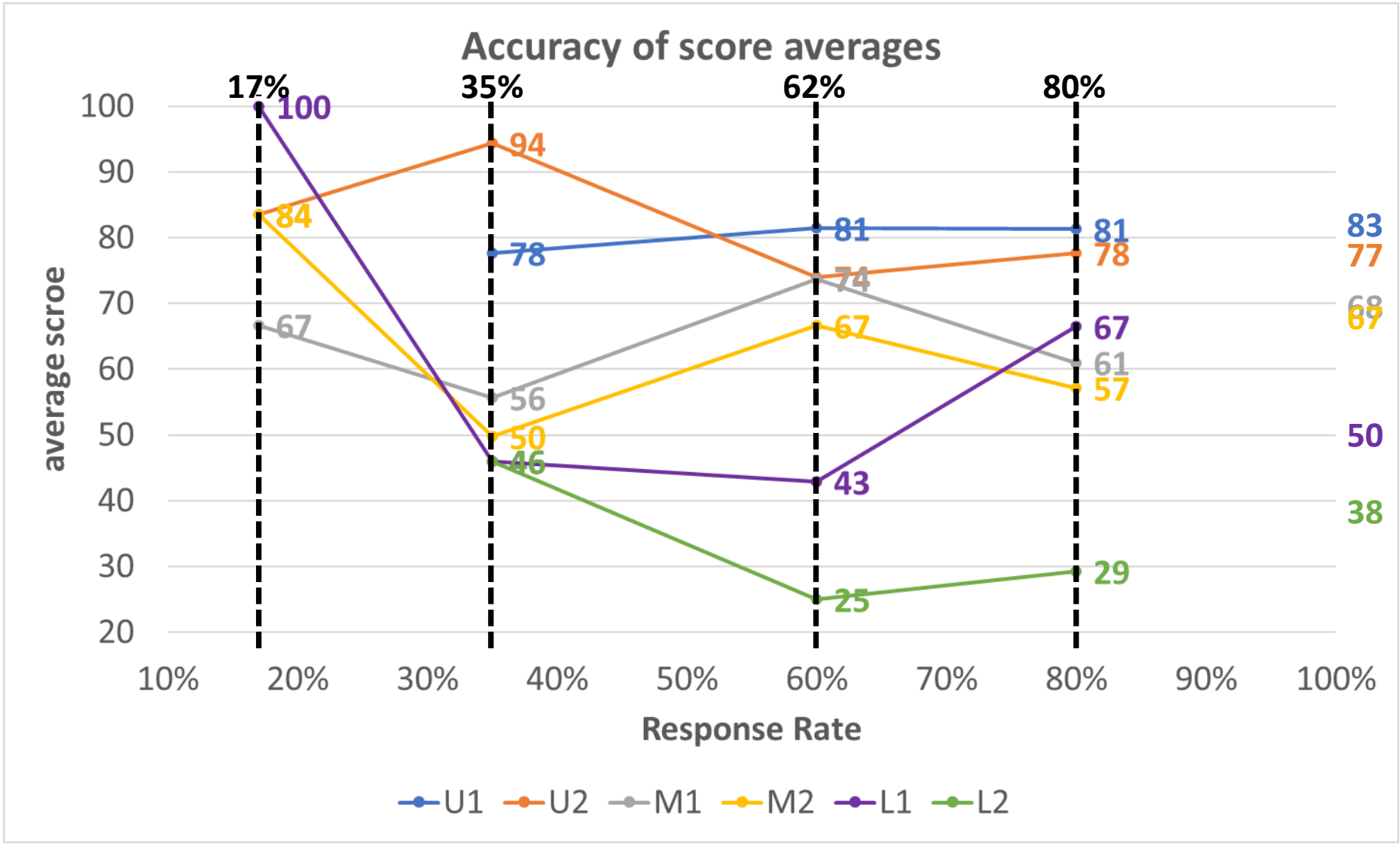
average scroe
100
94
84
74
78
77
67
67
57
50
46
43
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Response Rate
U2
M2
L1


Accuracy of score averages
17%
35%
62%
80%
100
90
80
70
60
50
40
30
20
average scroe
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Response Rate
100
94
84
67
56
50
46
74
67
43
78
67
61
57
77
68
67
50
U2
M1
M2
L1


Accuracy of score averages
17%
35%
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80%
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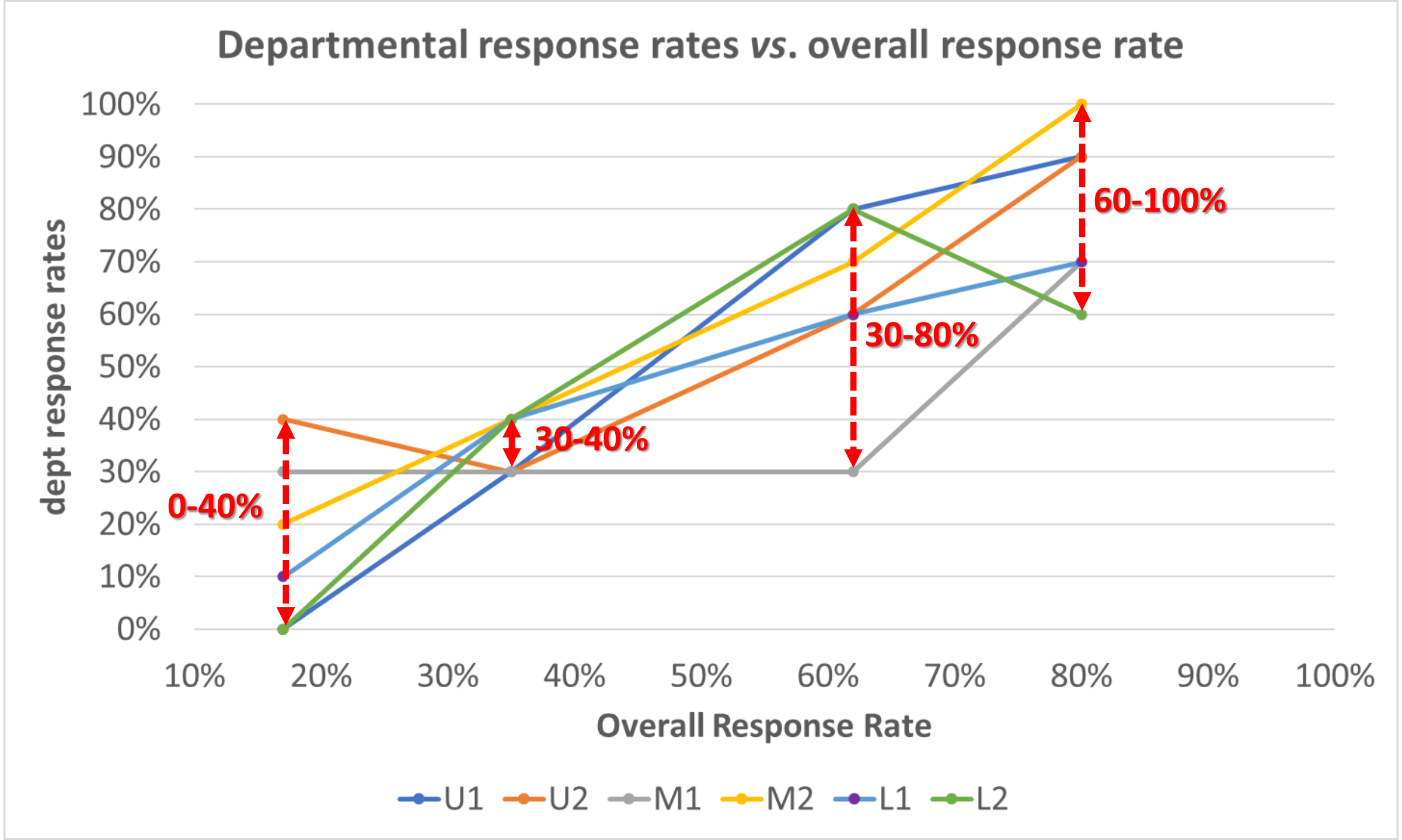
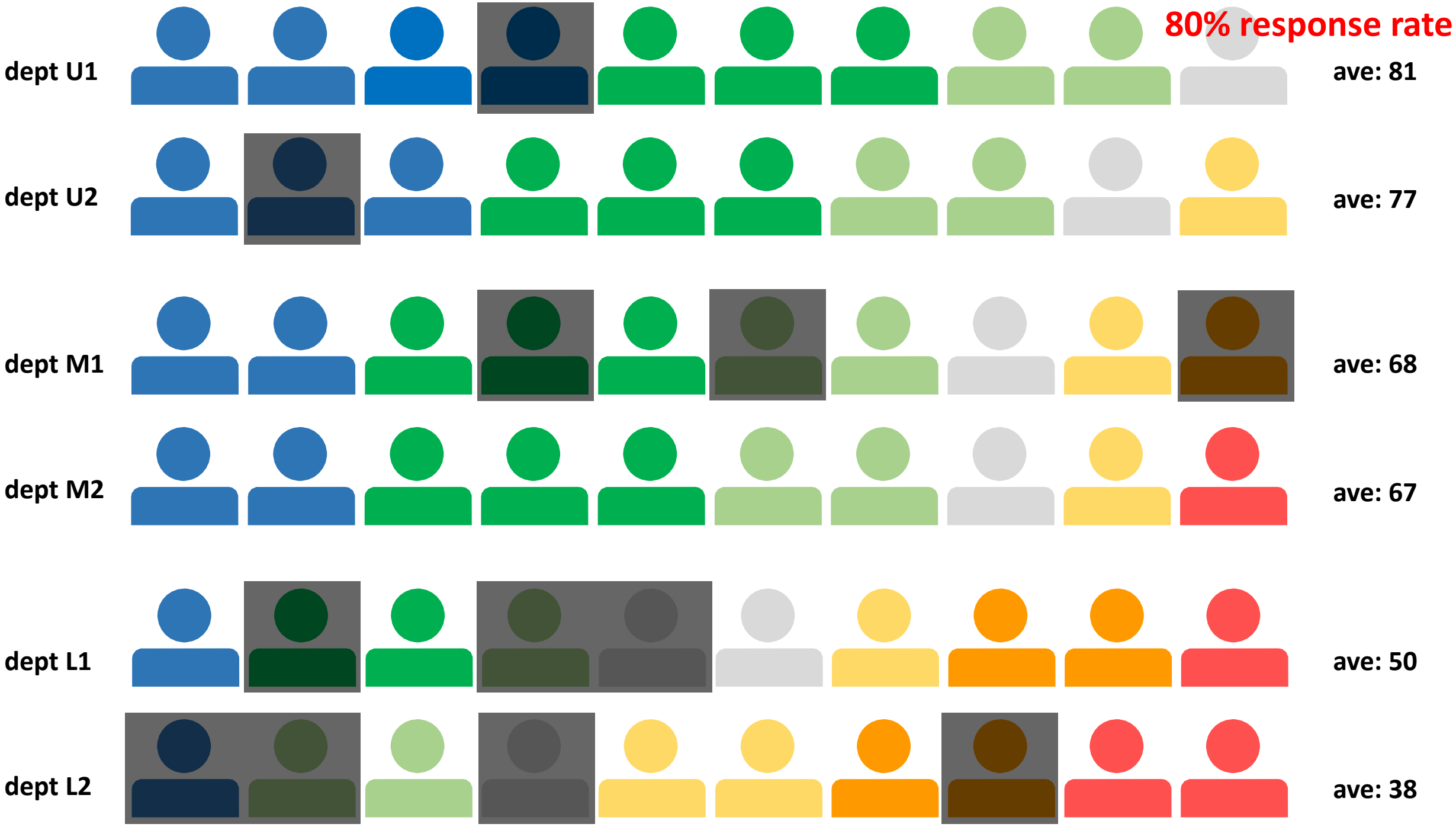
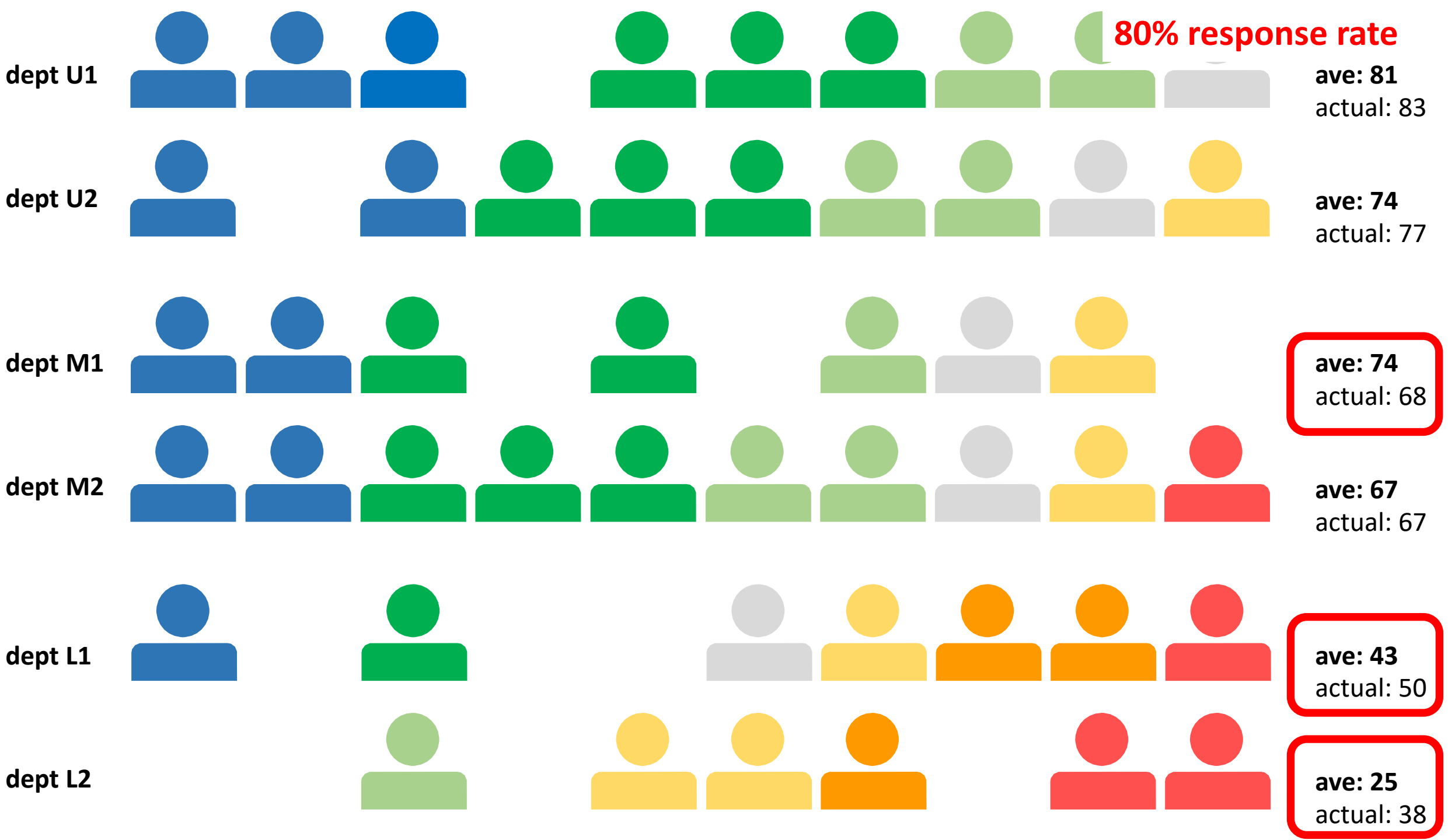
90
80
70
60
50
40
30
20
average scroe
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Response Rate
U1
U2
M1
M2
L1
L2
100
84
67
78
94
56
50
46
81
74
67
43
25
81
78
61
57
67
29
83
77
68
67
50
38

	U1	U2	M1	M2	L1	L2
17%		84	67	84	100	
35%	78	94	56	50	46	46
62%	81	74	74	67	43	25
80%	81	78	61	57	67	29


Departmental response rates vs. overall response rate
dept response rates
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Overall Response Rate
0-40%
30-40%
30-80%
60-100%
U1
U2
M1
M2
L1
L2

80% response rate

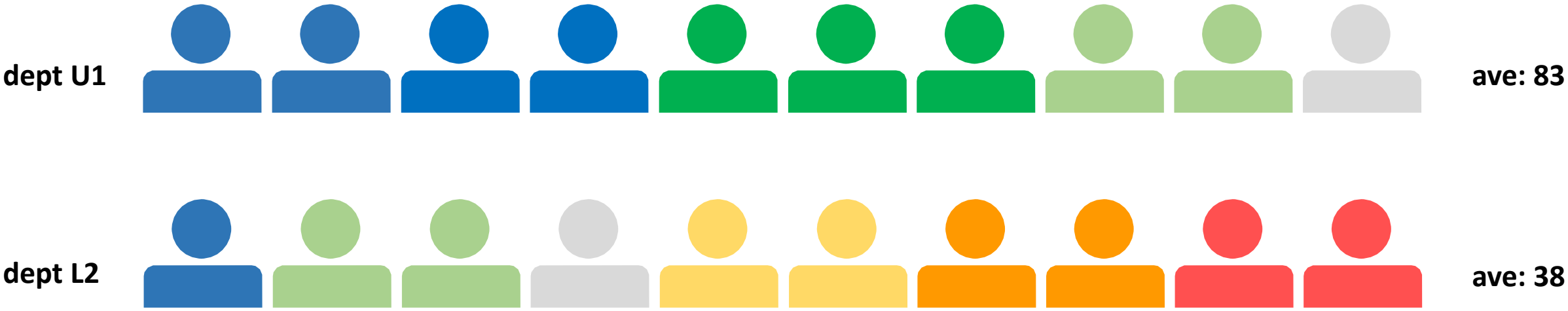



80% response rate
dept U1
ave: 81
actual: 83
dept U2
ave: 74
actual: 77
dept M1
ave: 74
actual: 68
dept M2
ave: 67
actual: 67
dept L1
ave: 43
actual: 50
dept L2
ave: 25
actual: 38


dept U1
ave: 83
dept U2
ave: 77
dept M1
ave: 68
dept M2
ave: 67
dept L1
ave: 50
dept L2
ave: 38

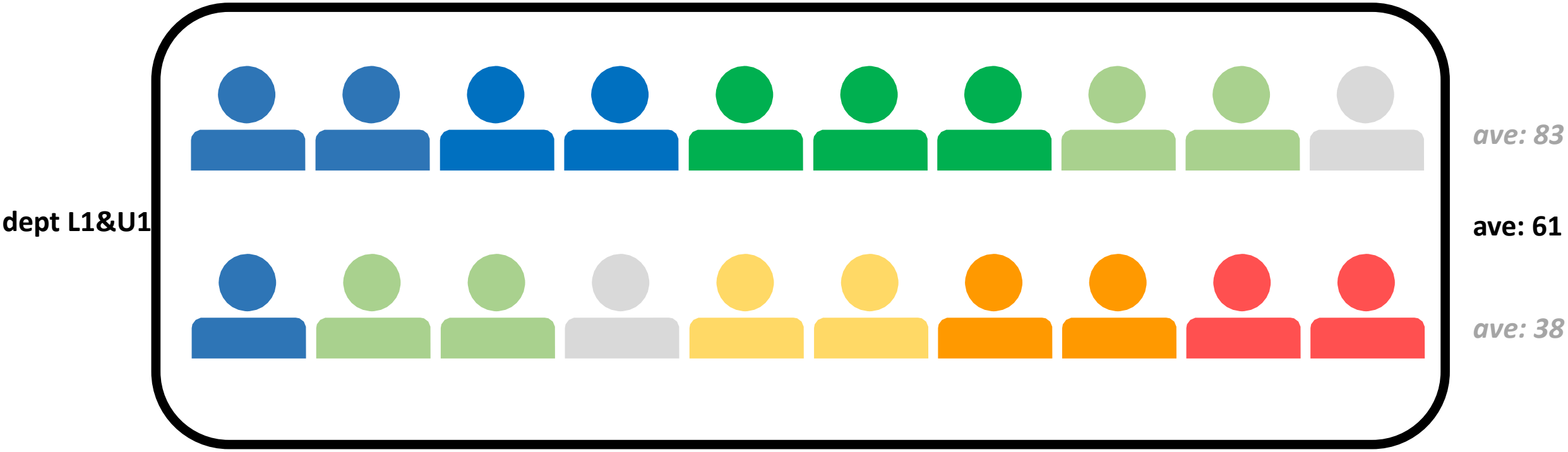
Lumping & splitting

- What happens if we lump these two depts together?



Lumping & splitting

- What happens if we lump these two depts together?



What is considered a meaningful difference?

- In a scale ranging from 0 to 100, how big a scale point difference do you need to be considered **a meaningful difference**
- Paper by ********** suggested **half a standard deviation**; the range of standard deviations for the COPSOQ scales used in StressAssess range between 15-30 so that would imply a difference of **7.5-15 scale points**
- “rules of thumb” floating around in COPSOQ circles:
  - one uses a **5 point** difference as the threshold for a meaningful difference;
  - another suggests a **5-10 point** difference (less precise – more “wiggle room”)
  - the other uses a **3 point** difference as an indicator of a **possible** meaningful difference, and a **7 point** difference as a **probable** meaningful difference

Psychosocial Working Conditions in Britain in 2010

Statistics Branch Health and Safety Executive
February 2012

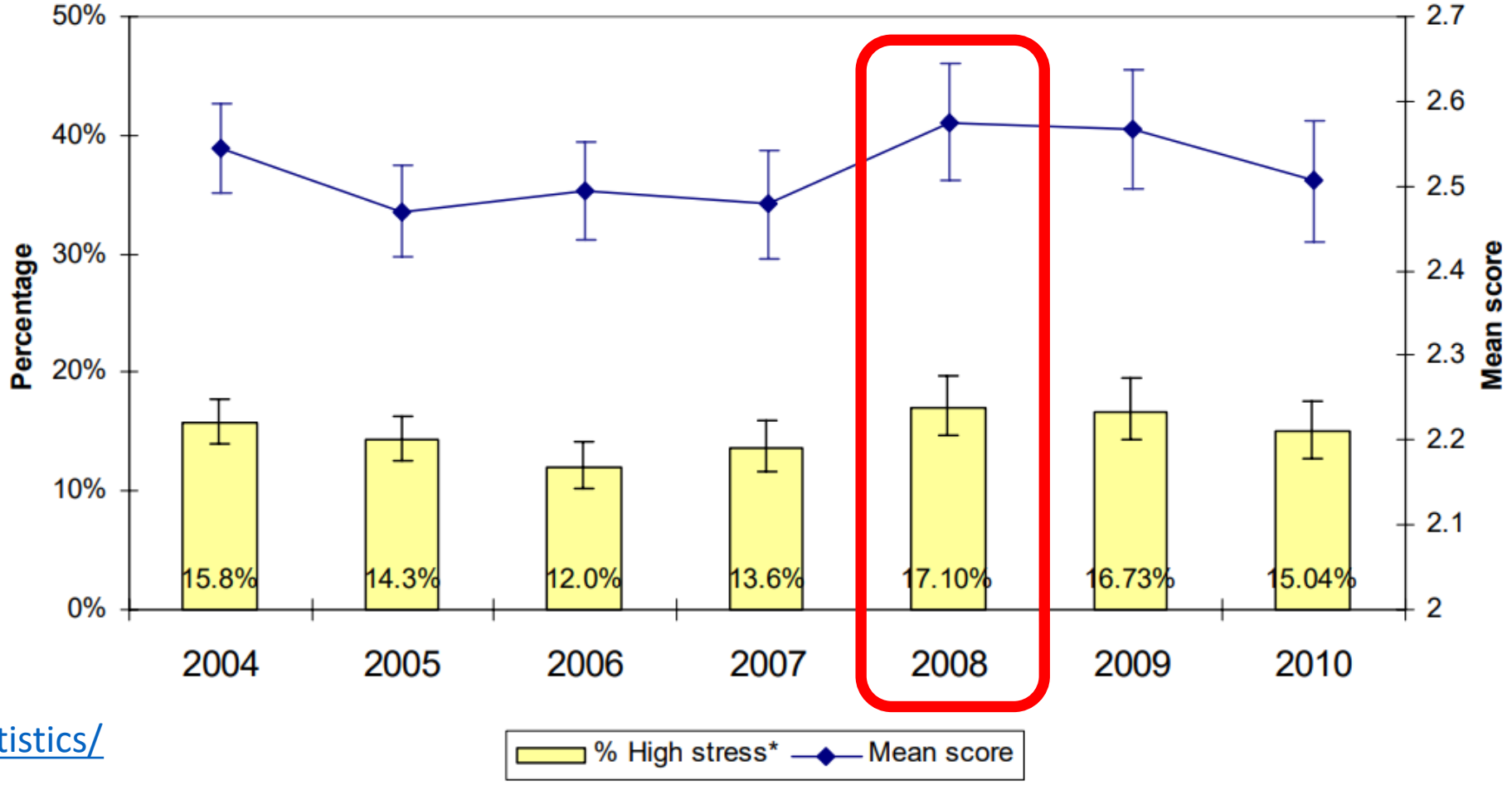
- “In conclusion, the general picture is of little change in psychosocial working conditions in Britain between 2004 and 2010; employees have largely reported positive conditions over this period.”
- “There are signs of improvements in of management support, and improvements in management of change, but a decline in control in the most recent data, which is perhaps expected in light of changing economic conditions and insecurities in the jobs market.”

http://www.hse.gov.uk/statistics/pdf/pwc2010.pdf

Figure 16. Mean of Job stresfulness and percent with high stress* by year

… not much difference detected over 7 years!

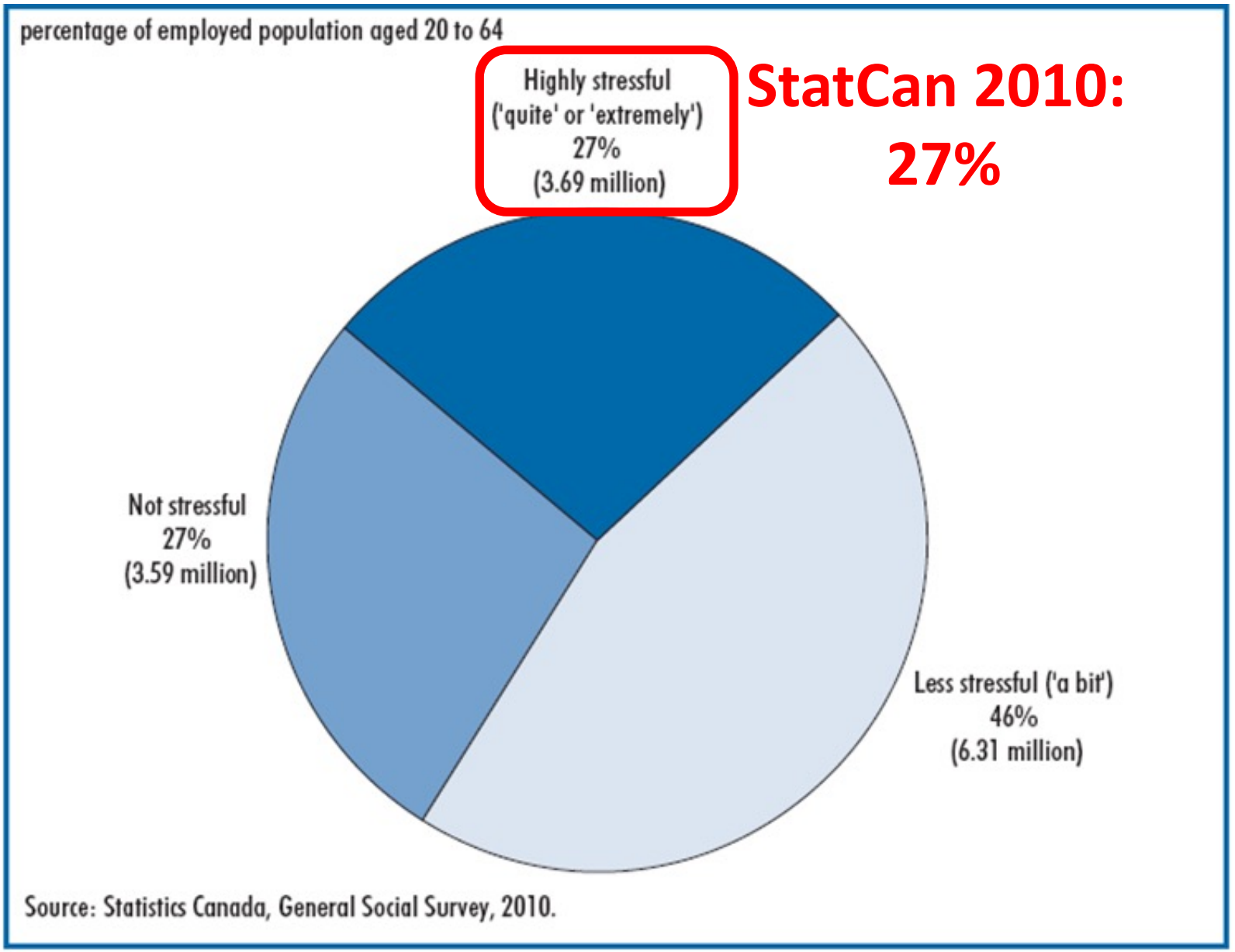
2008 financial crisis



https://www.hse.gov.uk/statistics/pdf/pwc2010.pdf

*High job stress refers to those who indicated that their job was extremely or very stressful

Considering your main job or business in the past 12 months, would you say that most days at work were...?



StatCan 2010: 27%

6.0% Not at all stressful
23.8% Not very stressful
42.3% A bit stressful
21.9% Quite a bit stressful
6.0% Extremely stressful

27.9%

EKOS 2019: 30%

Matched (same people) 2016 & 2019 respondents (n=636):

COPSOQ scales	2016	2019	difference	paired t-test
quantitative demands	45	46	+0.2	0.820
work pace	59	59	+0.4	0.423
emotional demands	48	47	-1.3	0.110
influence	46	47	+1.1	0.246
possibilities for development	68	70	+1.3	0.126
meaning of work	71	71	+0.3	0.464
commitment to the workplace	61	60	-0.6	0.467
predictability	51	50	-0.7	0.497
rewards (recognition)	58	60	+1.9	0.051
role clarity	70	70	-0.1	0.949
role conflicts	47	48	+0.5	0.490
quality of leadership	50	52	+2.3	0.033
social support from supervisor	65	67	+2.2	0.061
social support from colleagues	74	75	+0.7	0.328

Matched (same people) 2016 & 2019 respondents (n=636):

… not much difference detected in 30 scales over 3 years in the same people!

COPSOQ scales	2016	2019	difference	paired t-test
job insecurity	**35**	**30**	**-5.3**	0.000
work-life imbalance	44	44	-0.6	0.621
trust of mgmt	61	63	+1.2	0.211
justice & respect	55	56	+1.3	0.116
self-rated health	61	60	-1.0	0.402
burnout	49	50	+0.4	0.593
stress	43	43	-0.2	0.839
sleep troubles	45	45	+0.8	0.352
somatic symptoms	26	26	-0.5	0.388
cognitive symptoms	33	33	-0.2	0.969
sexual harassment	7.7%	7.2%	-0.5%	0.669
threats of violence	15.7%	16.1%	+0.5%	0.823
physical violence	9.9%	11.3%	+1.4%	0.272
bullying	36.2%	34.0%	-2.3%	0.209
discrimination	21.2%	19.9%	-1.3%	0.410
vicarious offensive behaviours	**47.6%**	**41.5%**	**-6.0%**	0.003

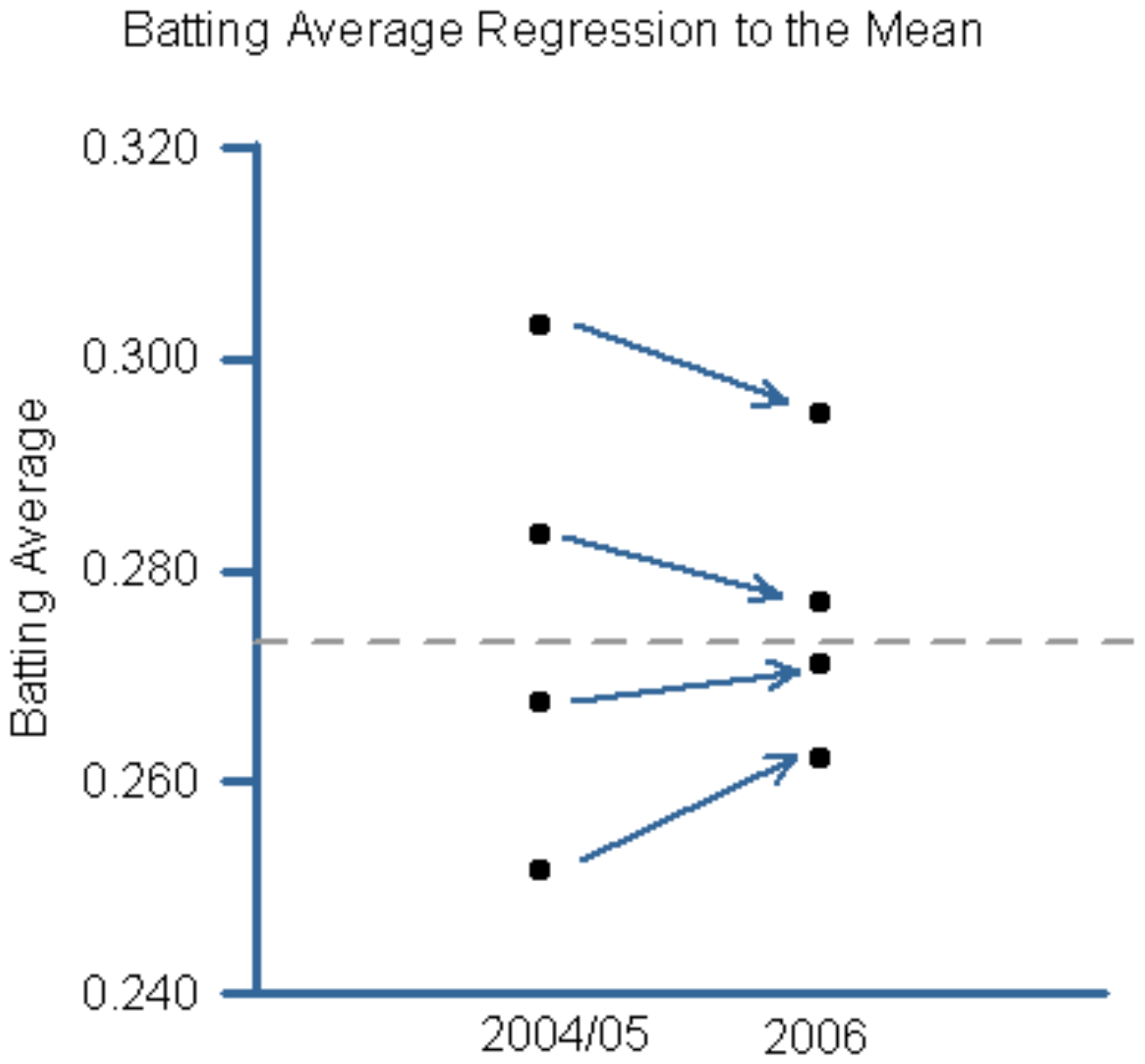
So … what's the difference?

- Better job security, but less fulltime work (by preference?)
- Slightly better scores over all
- Slightly worse sexual harassment, threats of violence, and physical violence
- Slight improvement in bullying, discrimination, and vicarious offensive behaviours
- Matched analysis similar to weighted averages
- **Is this just the "new normal"? i.e., baseline keeps adapting to changes**

… if it's this difficult to see changes over 3 to 7 years, how meaningful is it to measure difference over weeks/months?

Regression to the mean

- The more you measure the closer your average gets to the true mean
- This means that extreme measurements will eventually be smoothed out closer the average



https://tht.fangraphs.com/but-i-regress/

Inherent variance within scales:

- In a single question such as job satisfaction or self-rated overall health there are only 5 choices

In general, would you say **your health** is:	**Excellent**	**(100)**
	Very Good	**(75)**
	Good	**(50)**
	Fair	**(25)**
	Poor	**(0)**

- In quantitative measurements (like measuring room temperature) the assumed "reading" error is ± a half of the small increment (e.g., ±0.5°C for a typical thermometer) – this is considered random "measurement noise"
- However, in a Likert scale of 5 choices there is no "half" an increment, so it likely become ± a full scale-increment (in this case ± 25 scale points)
- This would imply a random measurement error range of 50 points! Thus, on an individual basis this "measurement noise" takes up half the length of the scale.
- On a group basis, this may average out to the ½ standard deviation (5 point or 3-7 point "rules of thumb") and thus become more manageable

Issues with confidentiality and responsibilities for follow-up

- Because of poor response rates, tracking is often used to measure changes at the individual level to avoid the problems of changes in the responding population
- Some psychosocial question can trigger mental health disorders and/or come comments provided in open-ended questions can indicate serious health concerns that need attention or even intended criminal behaviour
- By tracking individual responses, the surveyor assumes ethical responsibility for such situations
- Periodic workplace surveys used for “quality purposes” are exempt from Ethics Board Review (in Canada)

Problems with experimental methods:

- Rigorous experimental evaluation methods (like RCTs) require that all variables are randomized so that only the intervention is the meaningful difference between the exposure group and the intervention group
- However, the workplace is too susceptible to non-random changes to allow for true randomization (particularly at the group level)
- Vagaries in the workplace environment/context such as:
  - Mondays vs. Fridays
  - nice weather, bad weather, really bad weather, seasonal differences, shifts
  - organizational changes and upheavals, personnel changes, changes in relationships (at work or outside work), political/economic news/conditions, etc.
- All this individual, team, organization, sectoral and societal change may affect the measurements and some in a very non-random manner

https://api.screen9.com/preview/vBdBGurgectpIobbw2ylrxfTRNBF5vXwerN1I75KFi_qzL7b4cxCn56227wsbyIW

Problems with causation:

Albert Bandura

Reciprocal Determinism

Lack of a theoretical framework & ambiguous variables

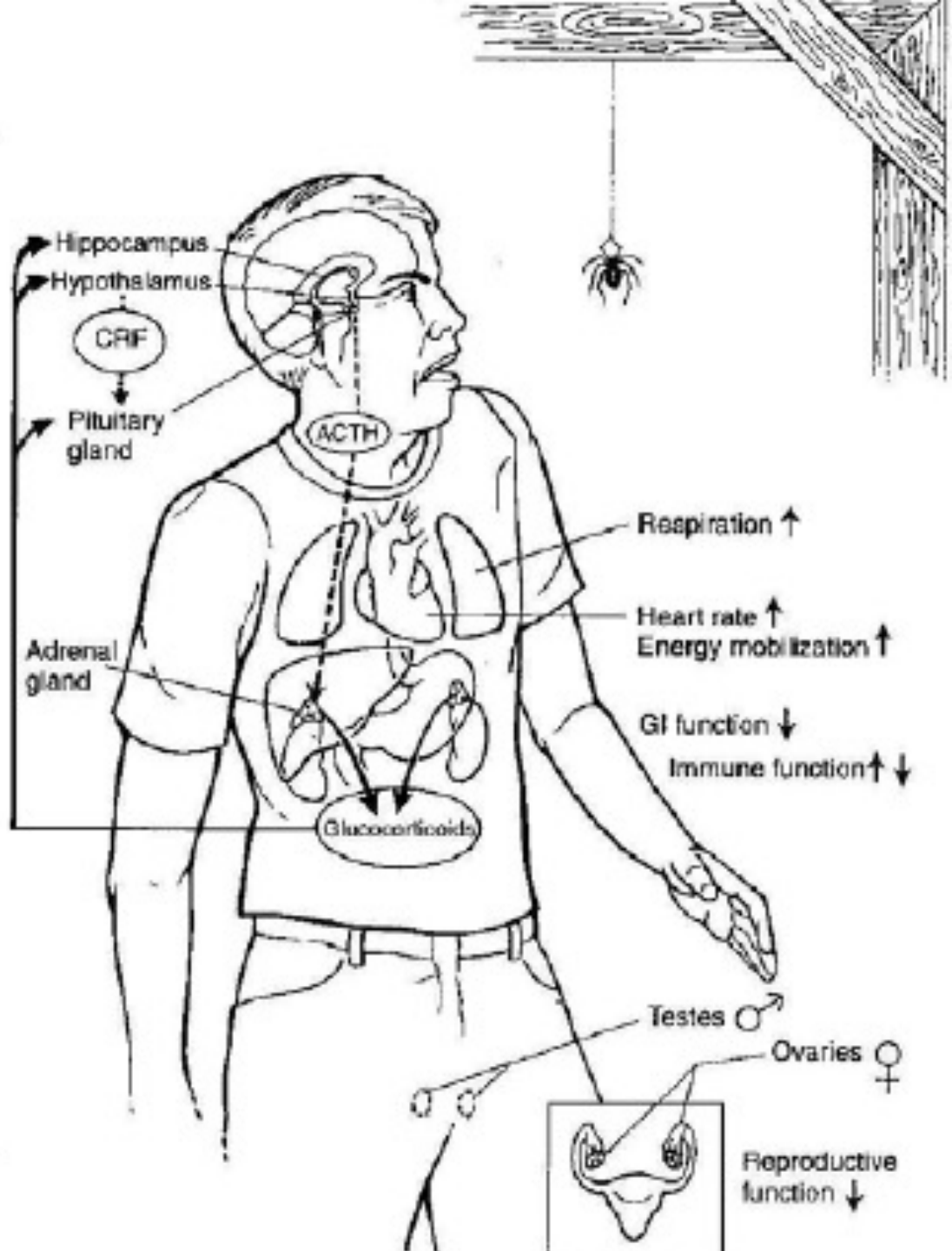
- Job demands & resources model
- Updated version of JDR: (job hindrances (threatening constraints), job challenges (obstacles to be overcome), job resources (helpful job aspects) – Van den Broeck et al., 2010)
- Issues with not addressing the power differential, i.e., “control” (instead, simply a “lack of resources”)
- Variable ambiguity – some scales may measure both exposure and outcome e.g., emotional demands, role conflicts, work-life conflict (reverse causation)

Lack of worker engagement, lack of follow-up action or data mis-interpretation

- As Hanne will outline in more detail, the context in which these pulse surveys are used are problematic
- Often these surveys are conducted on behalf of the HR department who just want to get a feel (“a pulse”) of where the organization is at
- Therefore they don’t feel they need to consult with representatives of the workers regarding the questions to be used, how the results will be interpreted, what actions could result from the survey
- Doing a survey and not responding to the results will likely make things worse than if you never did the survey in the first place (dashed expectations) or else the follow-up focusses on individual supports rather than organizational change
- Many consultants know the mechanics of administering a survey efficiently, but they may not have expertise in understanding what the results mean – and if they do, there is no guarantee that the workplace will correctly interpret the results
- Will there be a financial influence on the product design and/or the process (“give the customer what they want”)?

What about tracking the biology of stress?

HPA-Axis & Other Components of Hormonal Stress Response



https://allostasis.wordpress.com/

some Allostatic Load measurements:

Immune/ Inflammatory

- Lymphocytes, natural killer cells, macrophages
- Tumor necrosis factor alpha
- Interleukins (IL-6)
- Insulin-like growth factor
- Immoglobulin levels
- Coagulation (fibrinogen)
- C-Reactive Protein
- Albumin
- Fibrinogen

Other

- Homocysteine

Cardiovascular & Metabolic Systems

- Diastolic & systolic blood pressure
- Obesity: waist to hip ratio, BMI
- Glycosylated hemoglobin, fasting glucose
- Cholesterol measurements
- C-reactive protein
- Heart rate variability (HRV)

Neuroendocrine

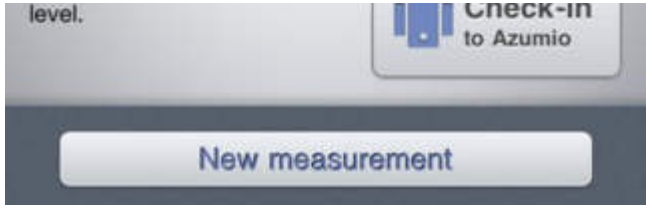
- Cortisol
- Catecholamines (epinephrine, norepinephrine)
- Dehydroepiandrosterone sulfate (DHEAS)

Brain (not easily measurable)

Noreen Goldman (2007) "Allostatic Load - Measurement Issues & Future Directions"
https://www.colorado.edu/ibs/cupc/short_courses/biodemography/lectures/Goldman_II.pdf

Stress Check App (Azumio)

(measures heart rate variability)

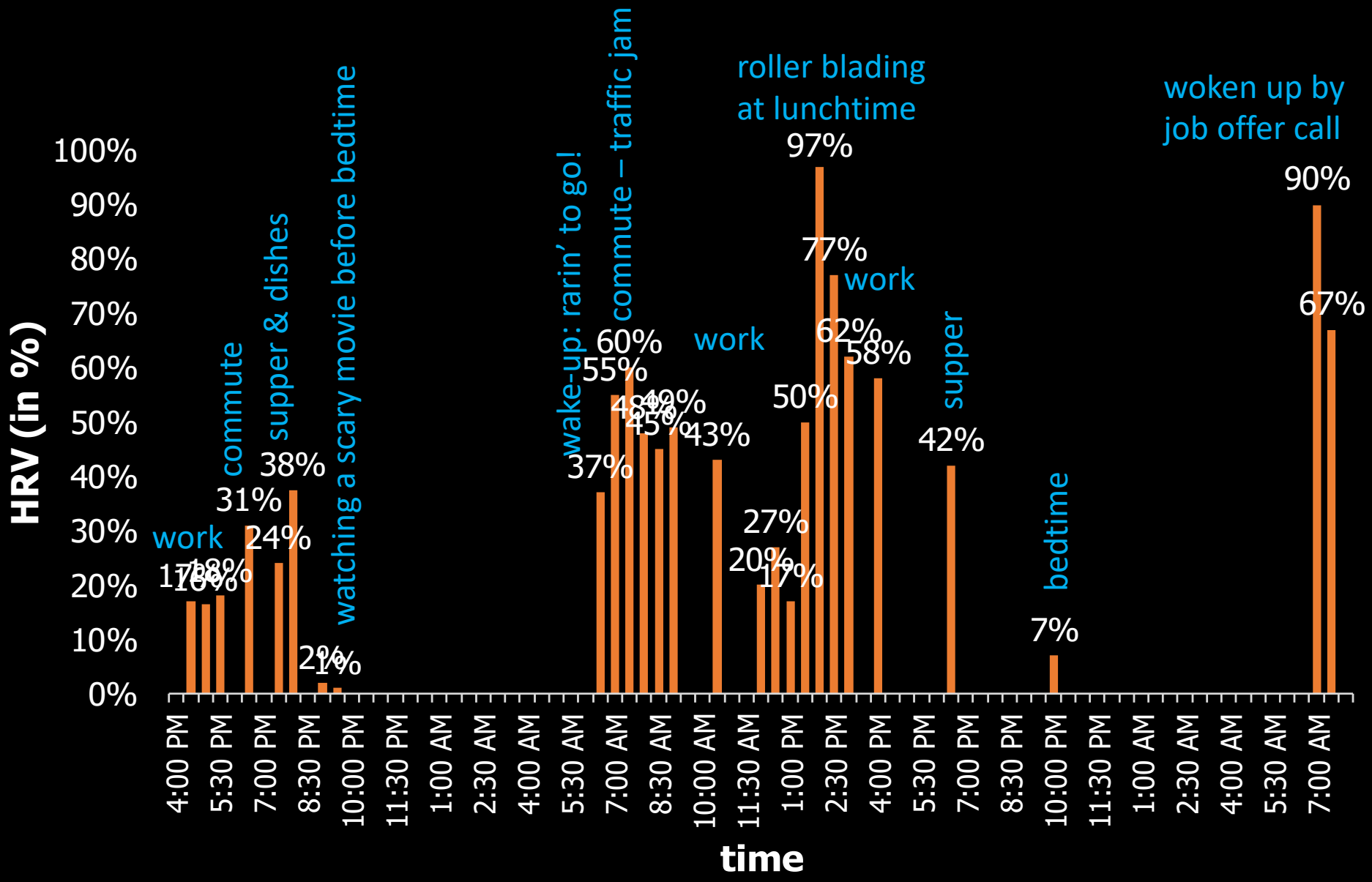


A real "pulse" and on your Fitbit it can be continual

https://play.google.com/store/apps/details?id=com.azumio.android.stresscheck&hl=en

https://itunes.apple.com/us/app/stress-check-pro-by-azumio/id439500612?mt=8

Measurements over a 40 hr period



Summary

- Tried to illustrate the issues, some are inherent to any psychosocial survey (theoretical framework, variable ambiguity, response rates, etc.)
- Others are particular to the pulse surveys or else at least exacerbated by the technique

1. **Face validity**: what to measure, what not to measure (ISO 45003 list, CSA 1003 "13 Factors", HSE 7(+) factors, COPSOQ CORE/Middle versions, …
2. **Initiation & Participation**: top-down (command & control, or, support & direction, bureaucratic, ground swell lead by activists, "knight in shining armour", …
3. **Motivations**: curiosity, technological fascination, illusion of control (if you can't measure it, …), optimization, regulatory compliance, altruistic, …
4. **Sampling issues**: sample size, response rate, lumping and splitting, levels of analysis, statistical methods, …
5. **Theoretical framework (or lack of)**: reverse causation, variable ambiguity, perspectives built into the tool used (hammer and nail saying), objective (biological) measures, …
6. **Interpretation**: poor presentation of results, mis-interpretation
7. **Follow-up**: lack of response, confusion, mis-directed ("hobby horses"), limited imagination (stay "inside the box"), innovation/creativity, openness to new patterns of work organization, …
8. **Ethical issues**: voluntary, confidentiality, tracking, responsibilities for individual follow-up if clinically warranted