As you Likert – cross-mode equivalence of administering lengthy self-report instruments via text message

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- Self-report experience (difficulty reading instructions, or typing responses)

Why SMS?

- One of the most widely used data services worldwide
- Most Australians use SMS daily (ACMA, 2011)
- Bulk services are cheap
- Stitch messages together

Why length?

- Length of an SMS is still salient to many users (Battestini, Setlur, & Sohn, 2010)
- In other modes instrument length can impact:
  - participant engagement (Dillman, Smyth, & Christian, 2009)
  - data quality and response rates (i.e. Burchell & Marsh, 1992; Jepson et al. 2005; LaMar & Gale, 1982)
- To date, there are no published examples of research administering pre-existing psychological instruments via SMS

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- Last two have multiple factors

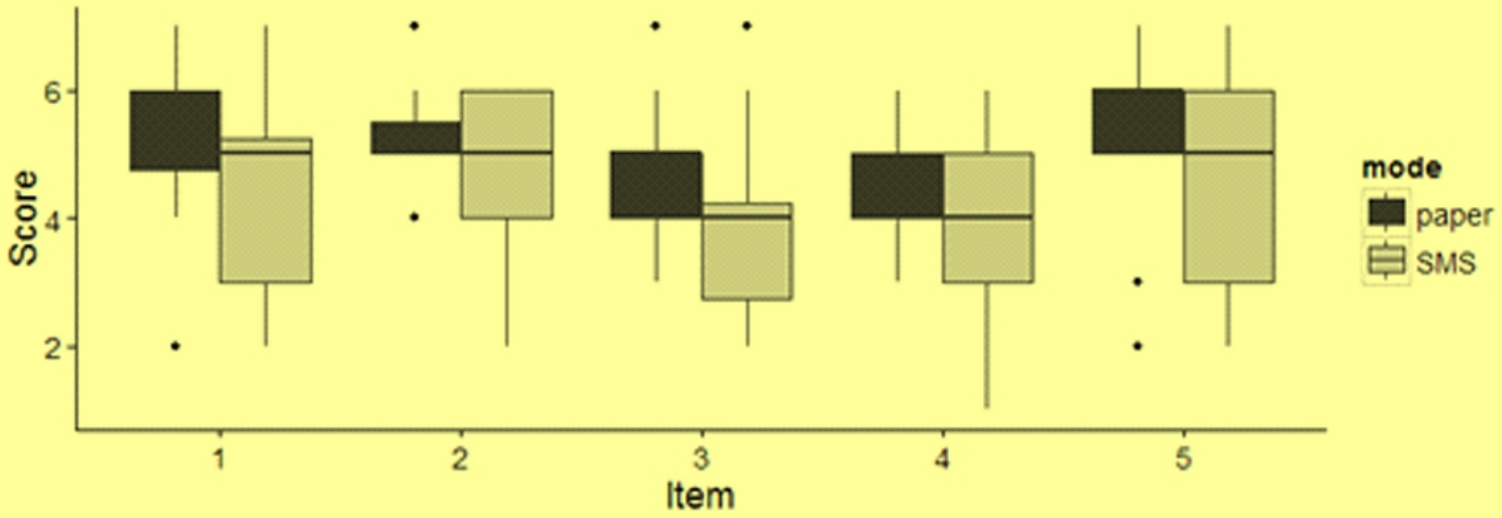
Participants (Hapless Souls)

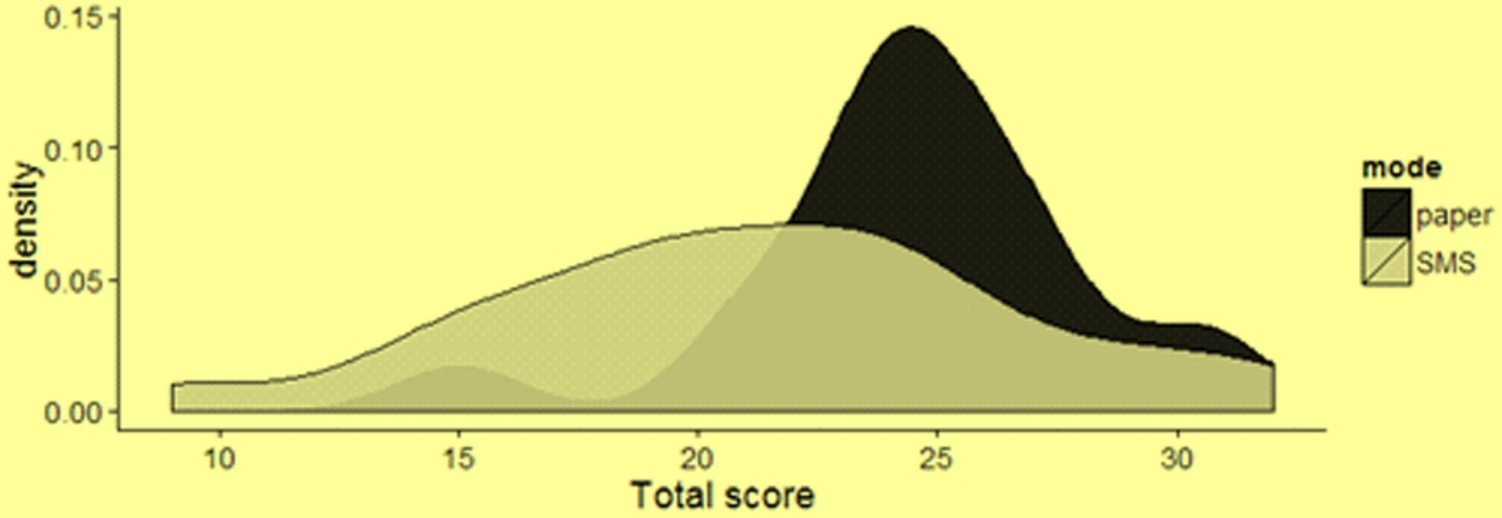
- Study 1, *N*=417
  - 42 did the five item RTS (20 via paper, 21via SMS)
  - 46 did the ten item (20 via paper, 26 via SMS)
  - 46 did the fifteen item version (20 via paper, 26 via SMS)
  - 283 the original twenty item RTS (120 via paper, 163 via SMS).

Participants (Hapless Souls)

- Study 2 *N*=911
  - 10-item PANAS: 183 participants (57 via SMS, 126 online)
  - 16-item AAQ: 253 (36 via SMS, 217 online)
  - 42-item DASS: 84 participants (57 via SMS, 27 online)
  - 60-item PANAS-X: 391 participants (124 via SMS, 267 online)

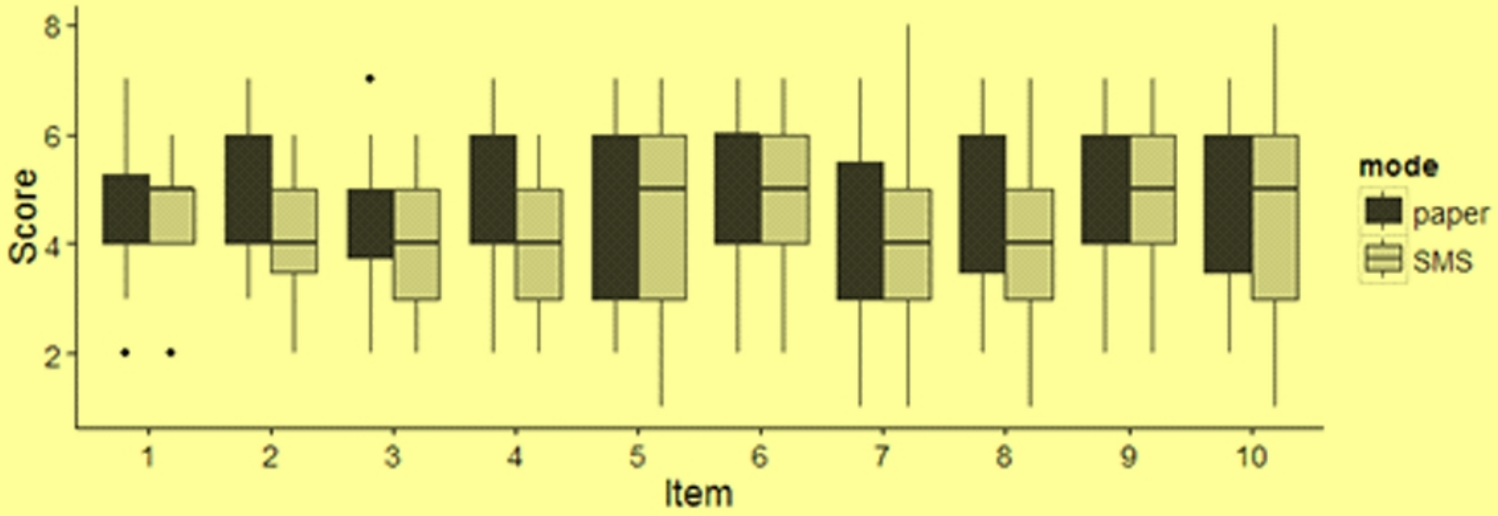
RTS
5 items

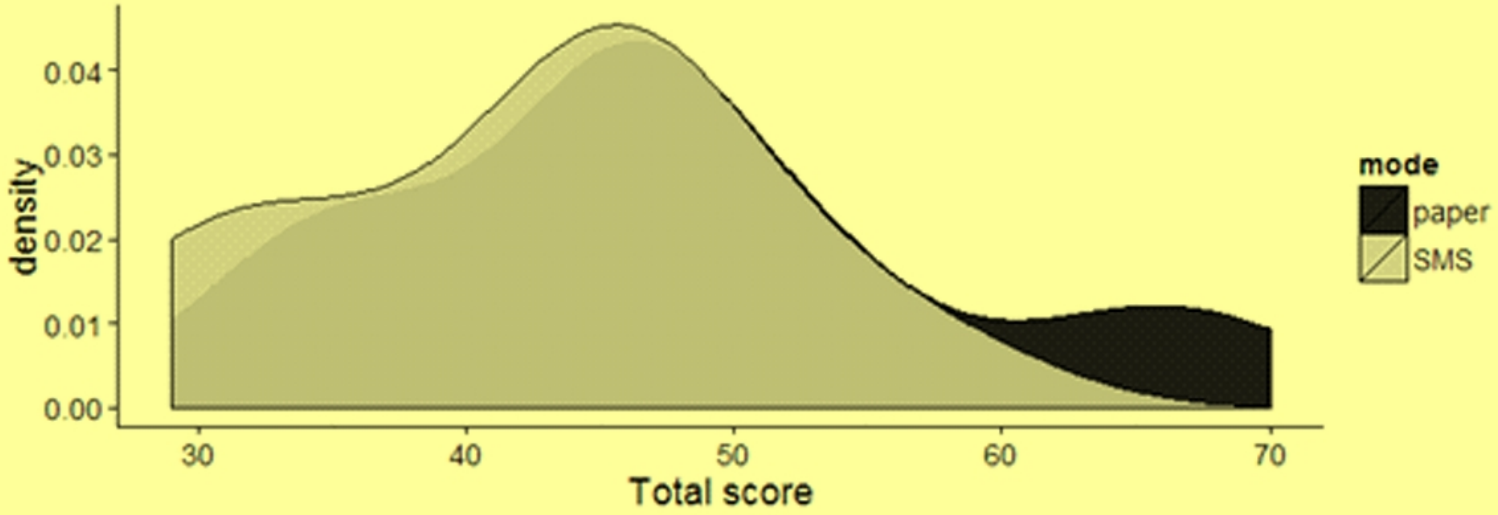




SMS		Paper			Factor invariance	
M	α	M	α	t	Weak	Strong
21	0.79	24	0.67	2.19*	No	No

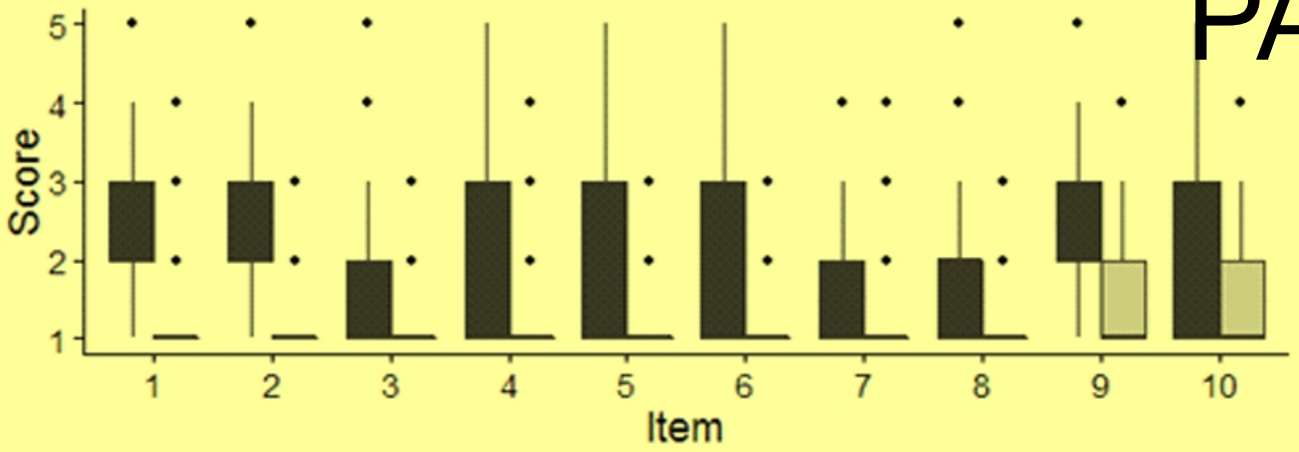
RTS
10 items

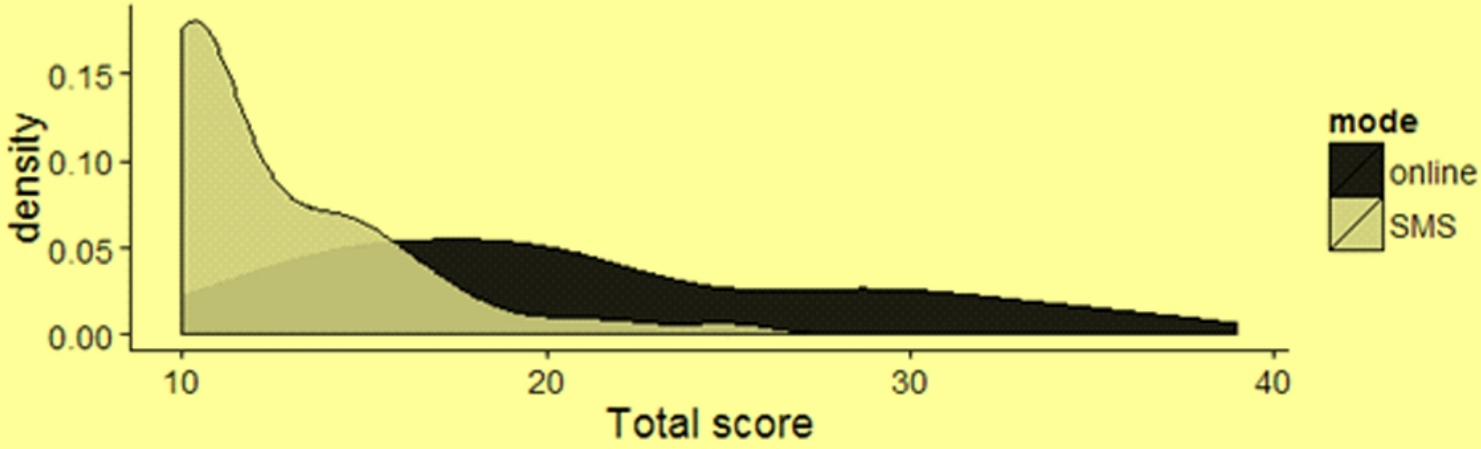




SMS		Paper			Factor invariance	
M	α	M	α	t	Weak	Strong
47	.68	42	.89	1.41	Yes	Yes

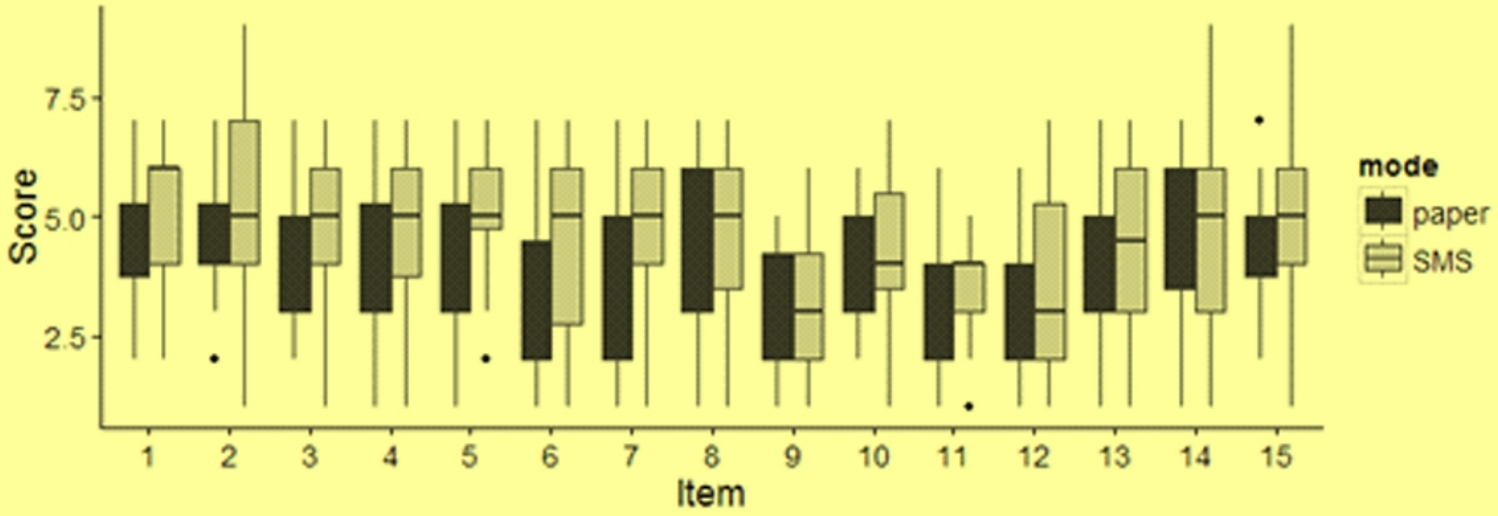
PANAS-SF NA (10 items)

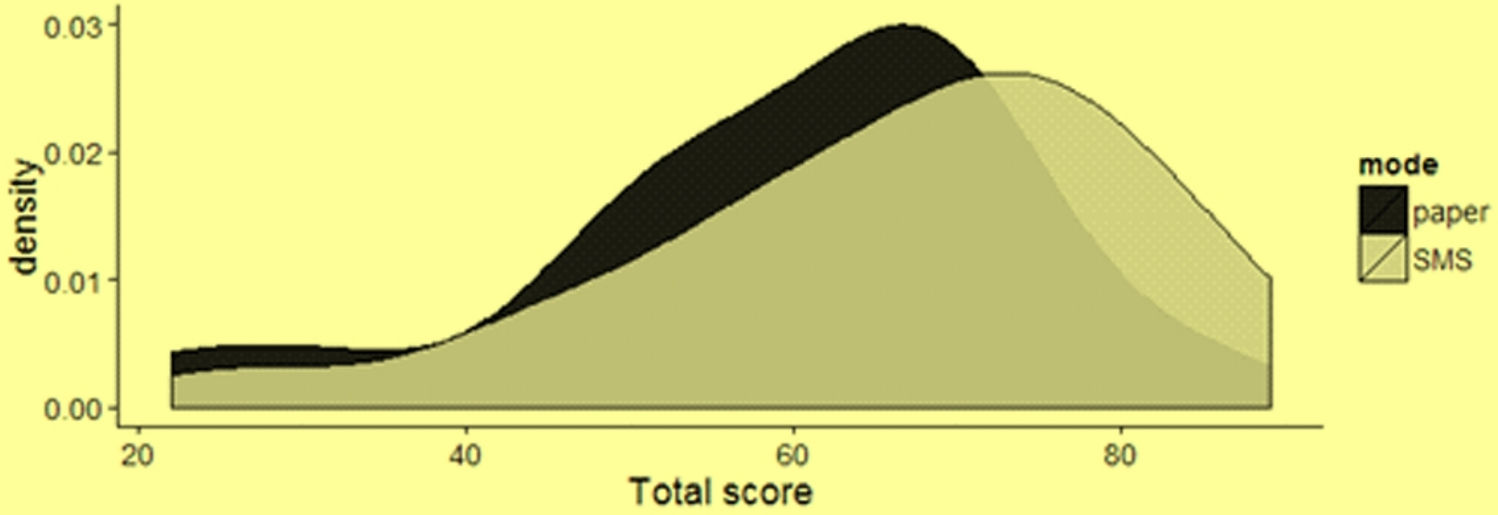




SMS		Paper			Factor invariance	
M	α	M	α	t	Weak	Strong
13	.80	21	.88	10.33	Yes	No

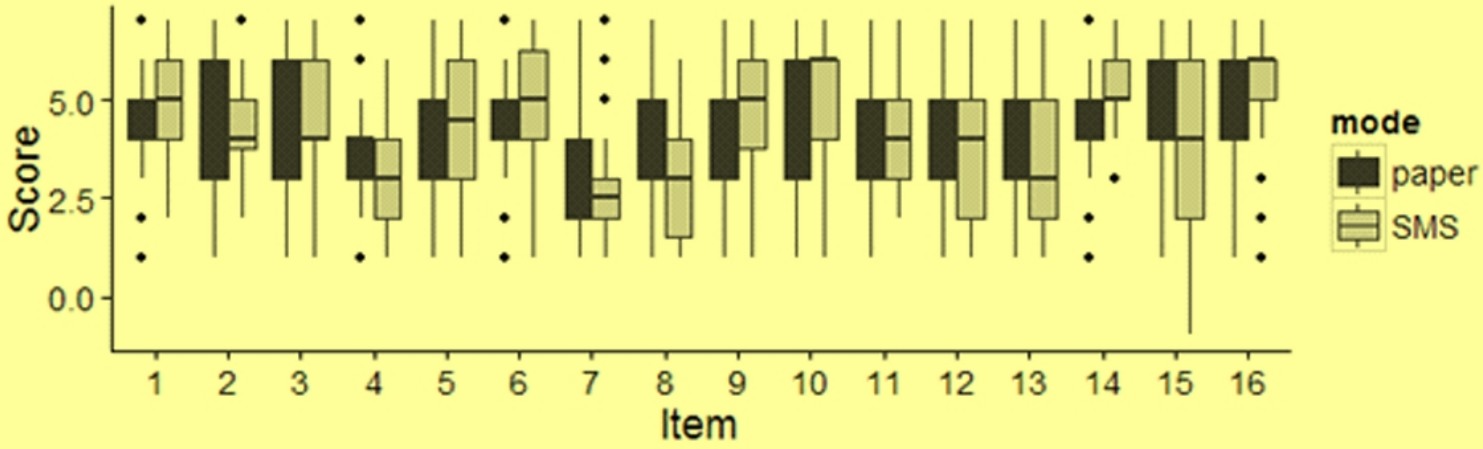
RTS
15 items

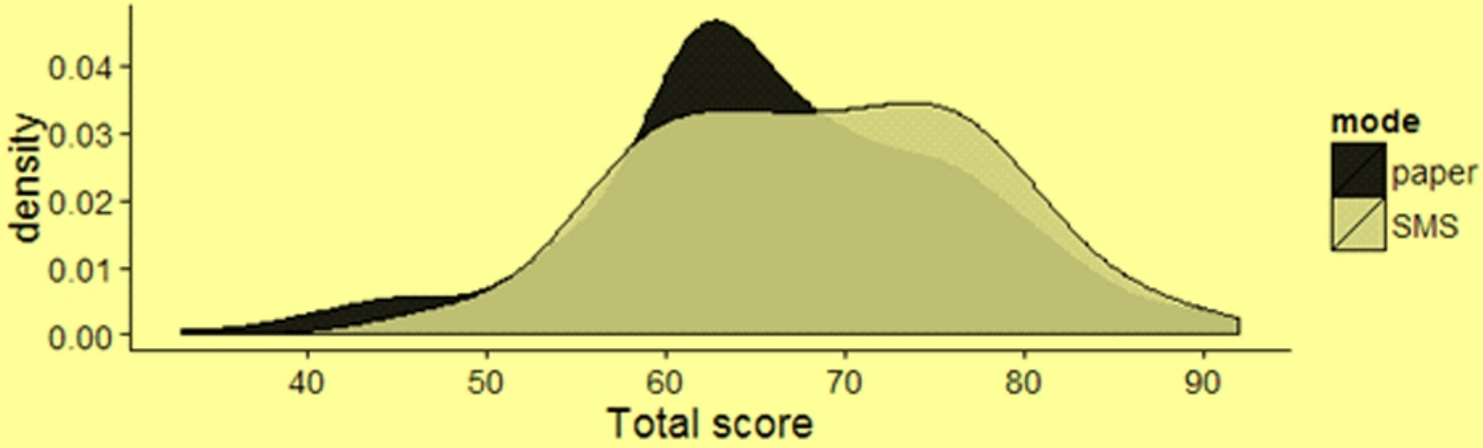




SMS		Paper			Factor invariance	
M	α	M	α	t	Weak	Strong
66	.88	60	.90	1.25	Yes	Yes

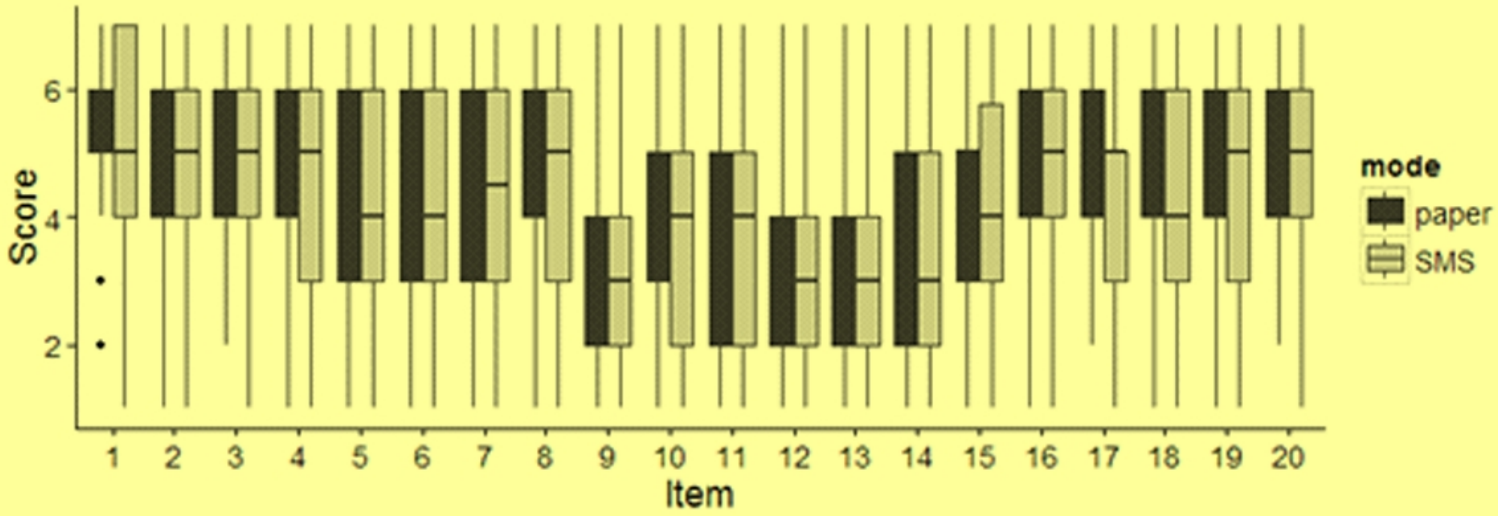
AAQ 16 items

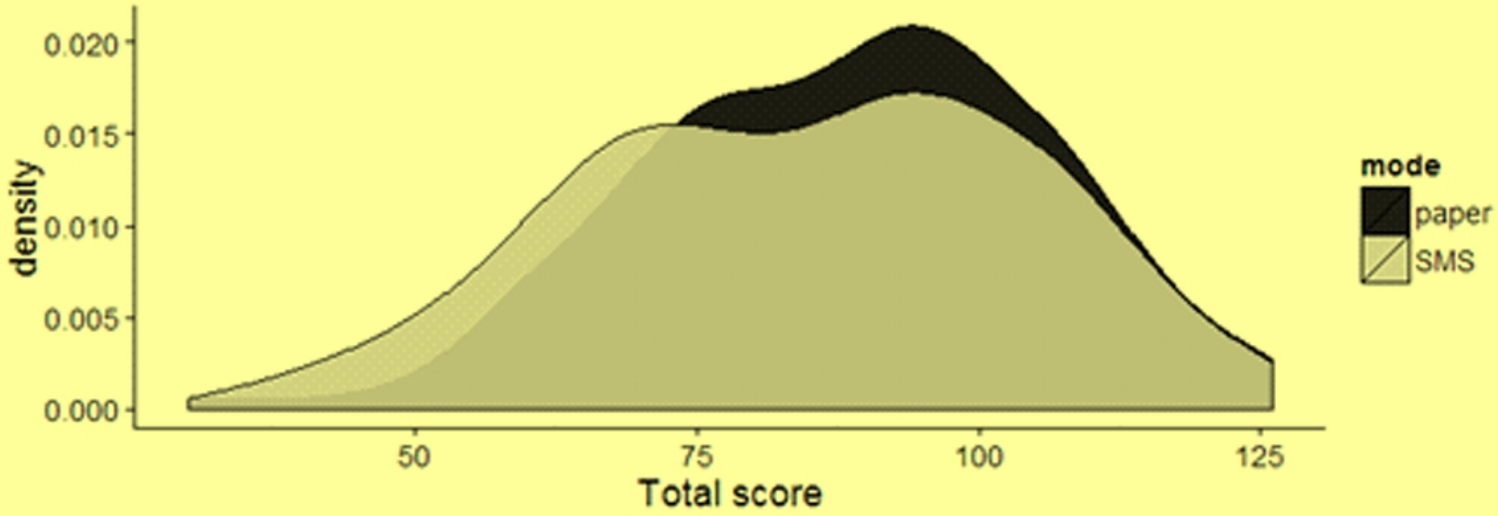




SMS		Paper			Factor invariance	
M	α	M	α	t	Weak	Strong
68	.70	21	.88	10.33*	Yes	No

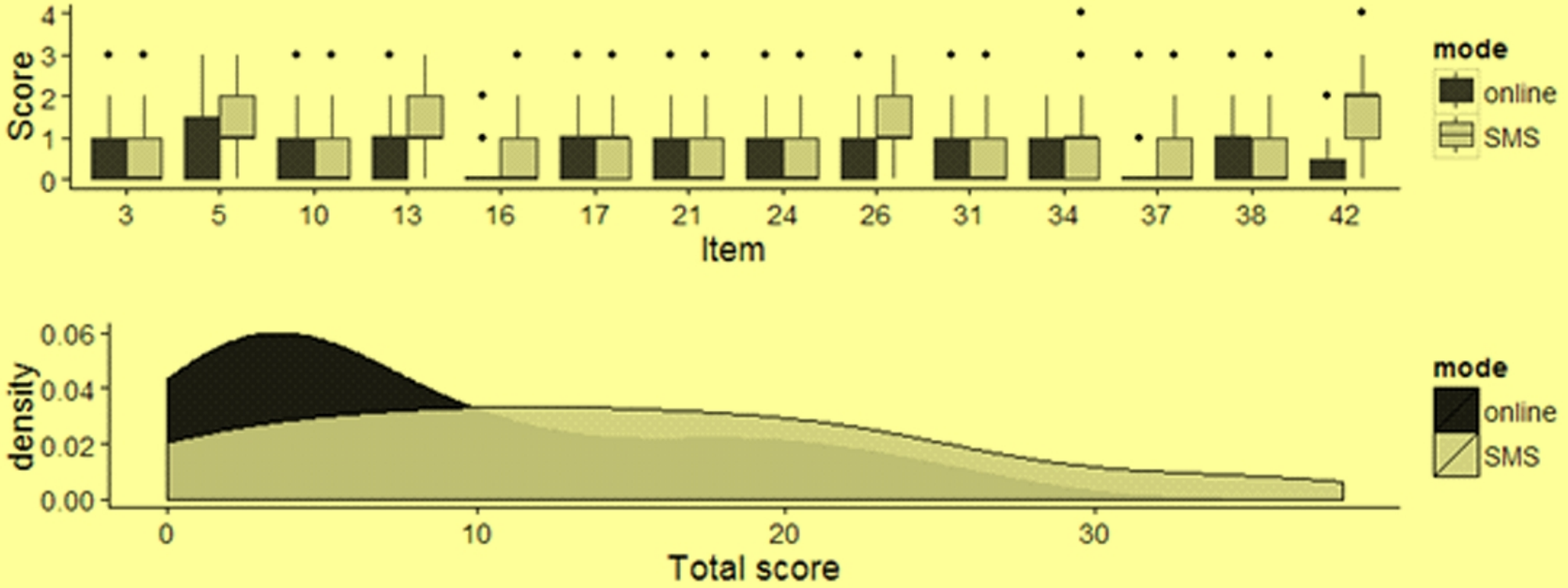
RTS 20 items





SMS		Paper			Factor invariance	
M	α	M	α	t	Weak	Strong
84	.91	88	.90	1.45	Yes	Yes

DASS: 42 items



SMS		Paper			Factor invariance	
M	α	M	α	t	Weak	Strong
45	.90	21	.91	5.08*	Yes	Yes

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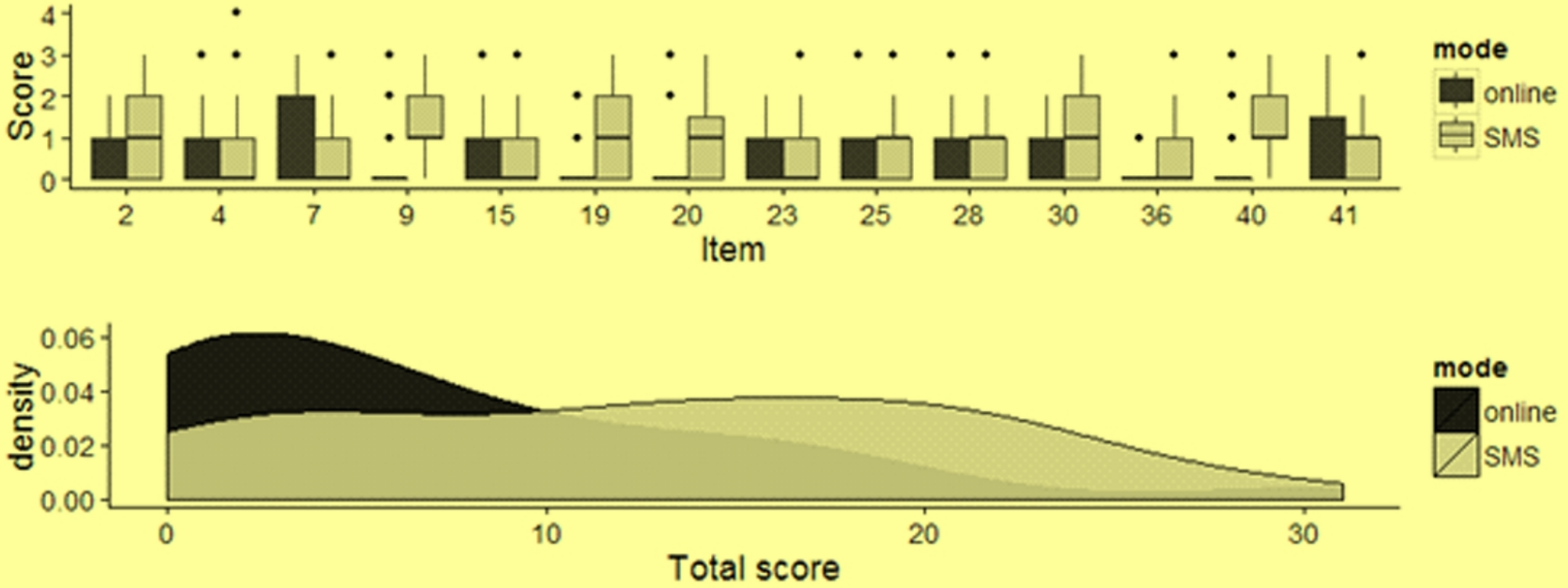

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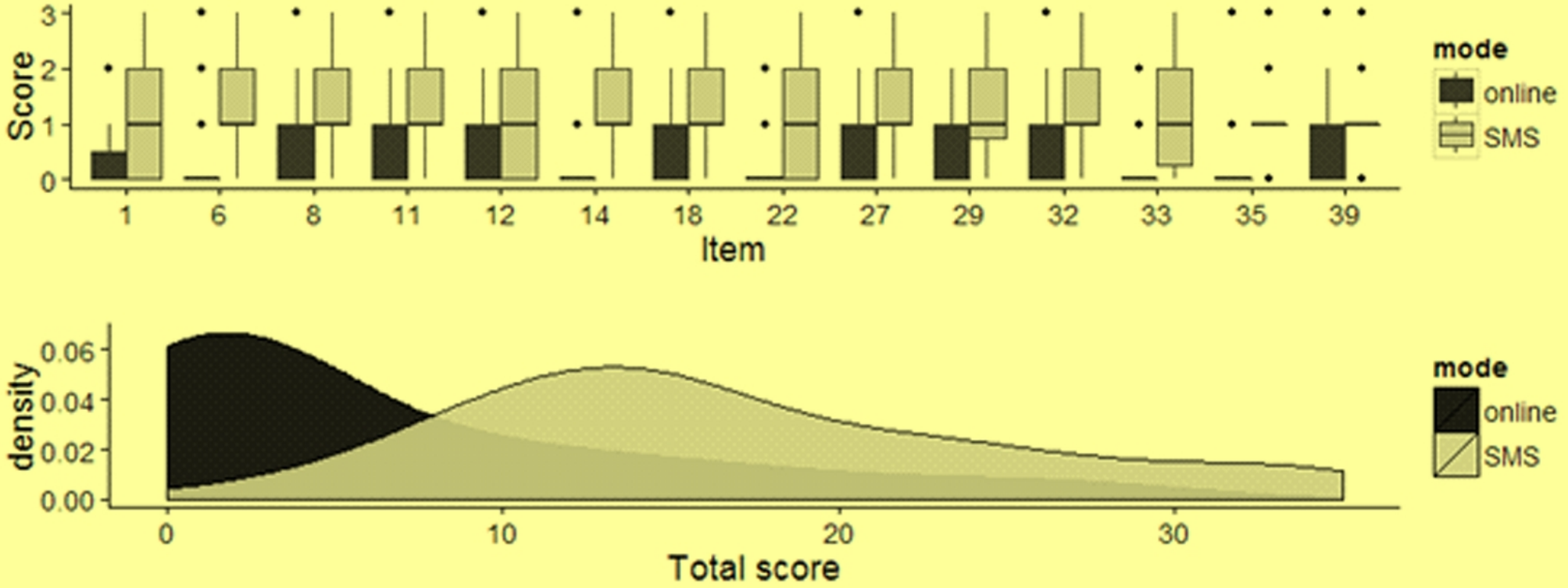

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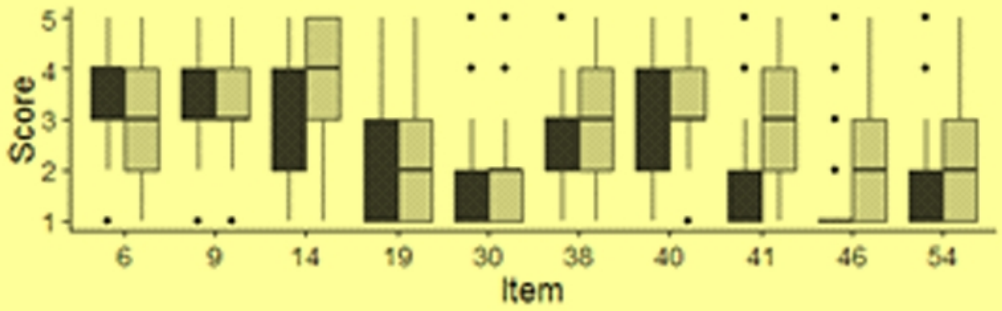
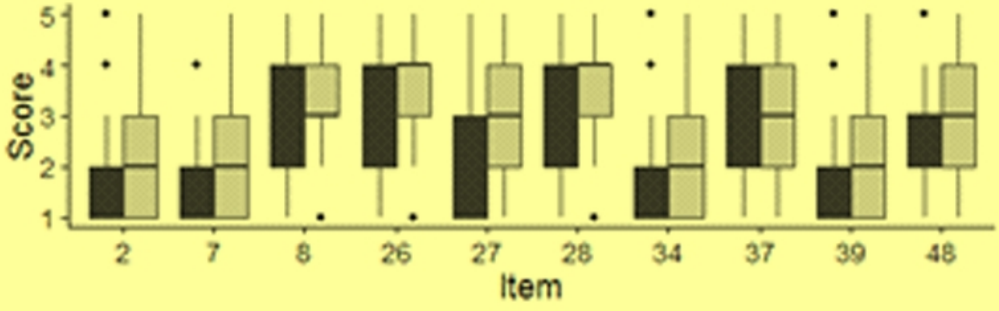
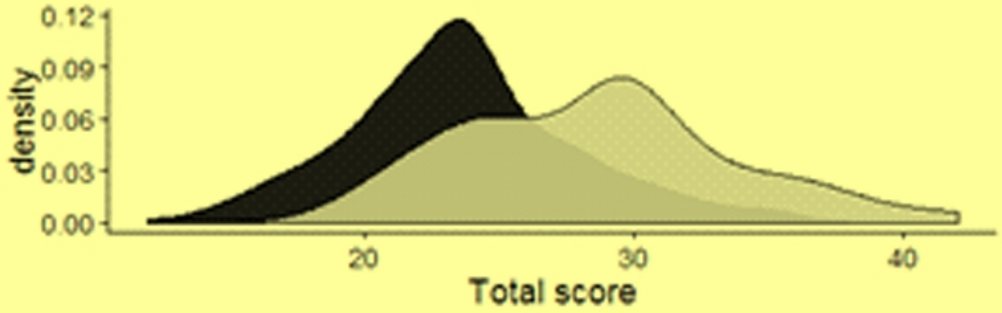
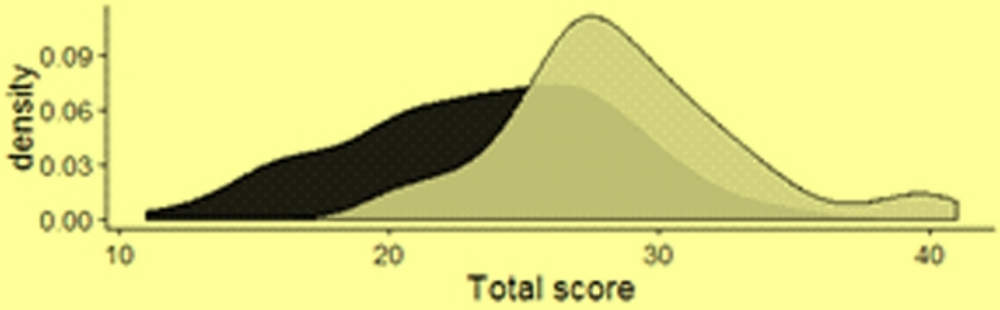
45	.90	21	.91	5.08*	Yes	Yes

PANAS-X: 60 items









SMS		Paper			Factor invariance	
M	α	M	α	t	Weak	Strong
23	.86	15	.85	9.6*	Yes	No
31	.83	27	.86	5.8*	Yes	No

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- BUT in instruments over ten items in length
  - SMS had Higher means
  - Lack of equivalence in latent means and intercepts.
- Isn't due to
  - Different participant age
  - Instrument length (beyond ten items)
  - Difficulty understanding instructions
  - Difficulty typing out the response