

INTERNATIONAL TRAINING
May 25-26 and June 1-2, 2021
University of Economics and
Innovation in Lublin

A large, abstract watercolor splash in shades of purple, blue, and pink, centered behind the title text.

„A MODEL OF SUPPORT FOR HIGHLY SENSITIVE CHILDREN IN PRESCHOOL AND EARLY SCHOOL AGE”



What research tell us about SPS?

SPS: Trait environment

SPS first measure: Aaron & Aaron (1997)...

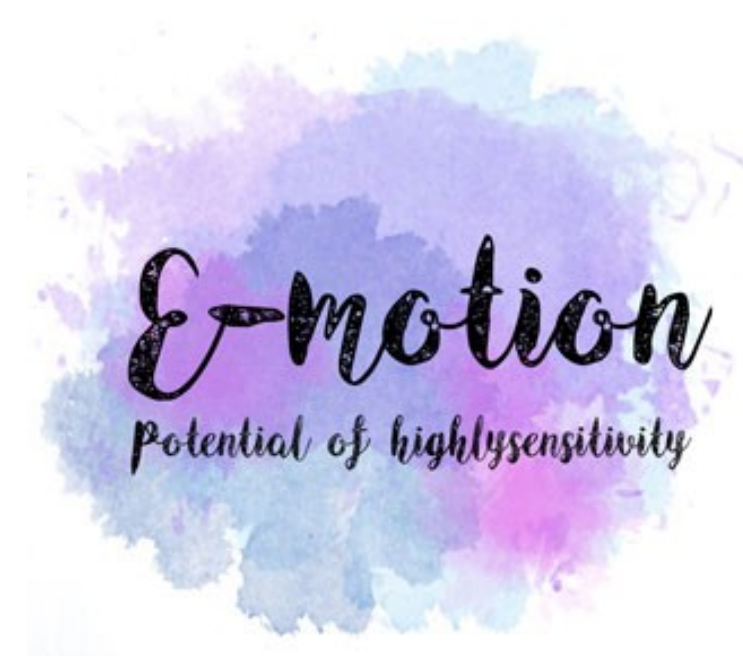
... 7 studies (Total sample 1342) & Qualitative interview (N=39)...

... *sensitivity* capture as a behavior (temperament) trait (Lionnetti et al, 2018)

- Depth of processing
- Increase emotional reactivity and empathy
- Easy of overstimulation
- Greater awareness to subtleties environment

First measure Highly Sensitive Person Scale (HSPscale)

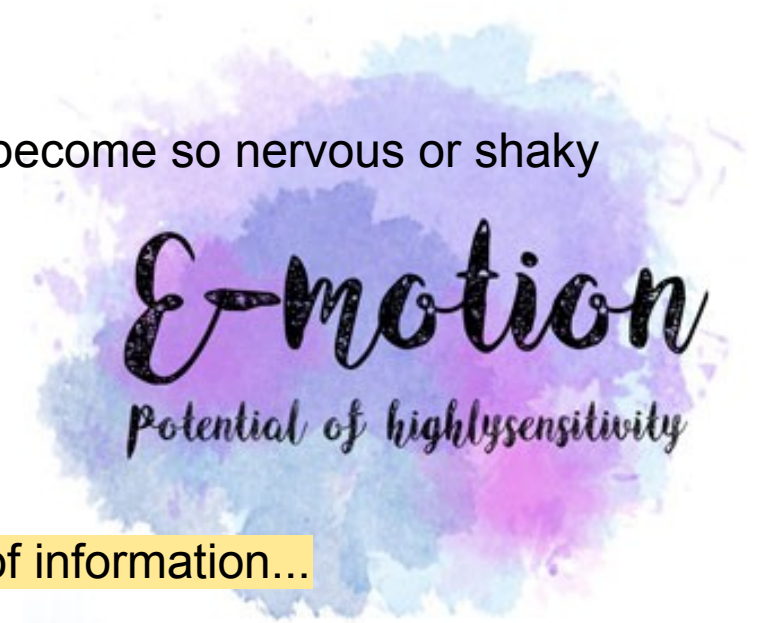
- Self reported (1 to 7 response scale) 60 items reduce to 27 items
- Measuring cognitive and emotional aspect



SPS: Trait environment

... example of items....

- Are you easily overwhelmed by strong sensory input?
- Do you seem to be aware of subtleties in your environment?
- Do other people's moods affect you?
- Are you deeply moved by the arts or music?
- Do changes in your life shake you up?
- When you must compete or be observed while performing a task, do you become so nervous or shaky that you do much worse than you would otherwise?
- Are you easily overwhelmed by things like bright lights, strong smells, coarse fabrics, or sirens close by?

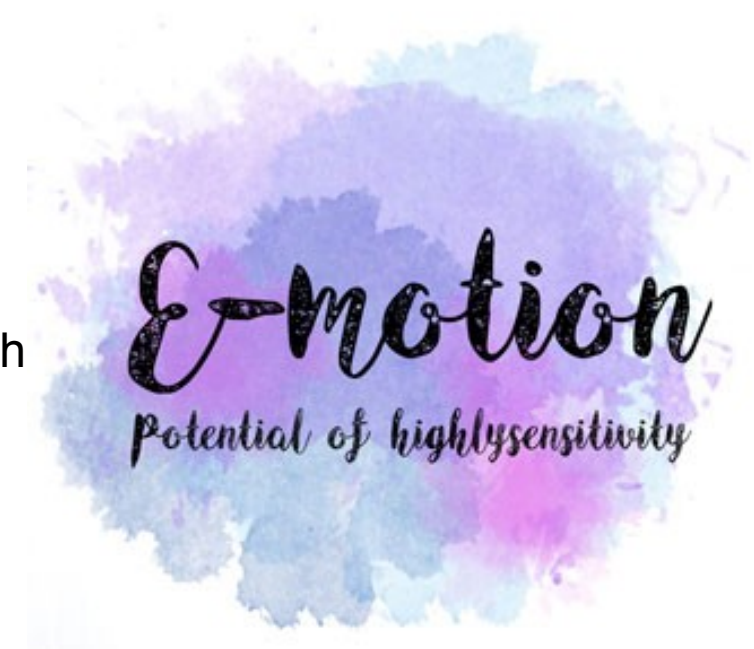


Aaron & Aaron (1997) SPS as a construct of broader sensory processing of information...

SPS: Trait environment

Smolewska (2006) Test unidimensional HSPScale (Aaron & Aaron, 1997)... (N=851 students mean age 19.7)

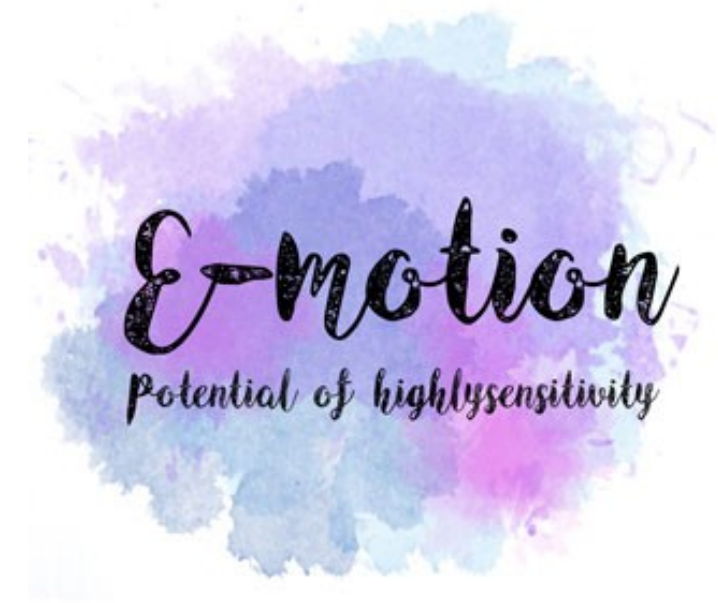
- Not unidimensional construct
- 3 dimension: alfa .89 oblibim rotation 40.5% explained variance
 - Aesthetic Sensitivity (AES)
 - Low Sensory Threshold (LST)
 - Ease of Excitation (EOE)
- Significant correlation AES – openness to experience (Big-5) EOE/LST with



SPS: Trait environment

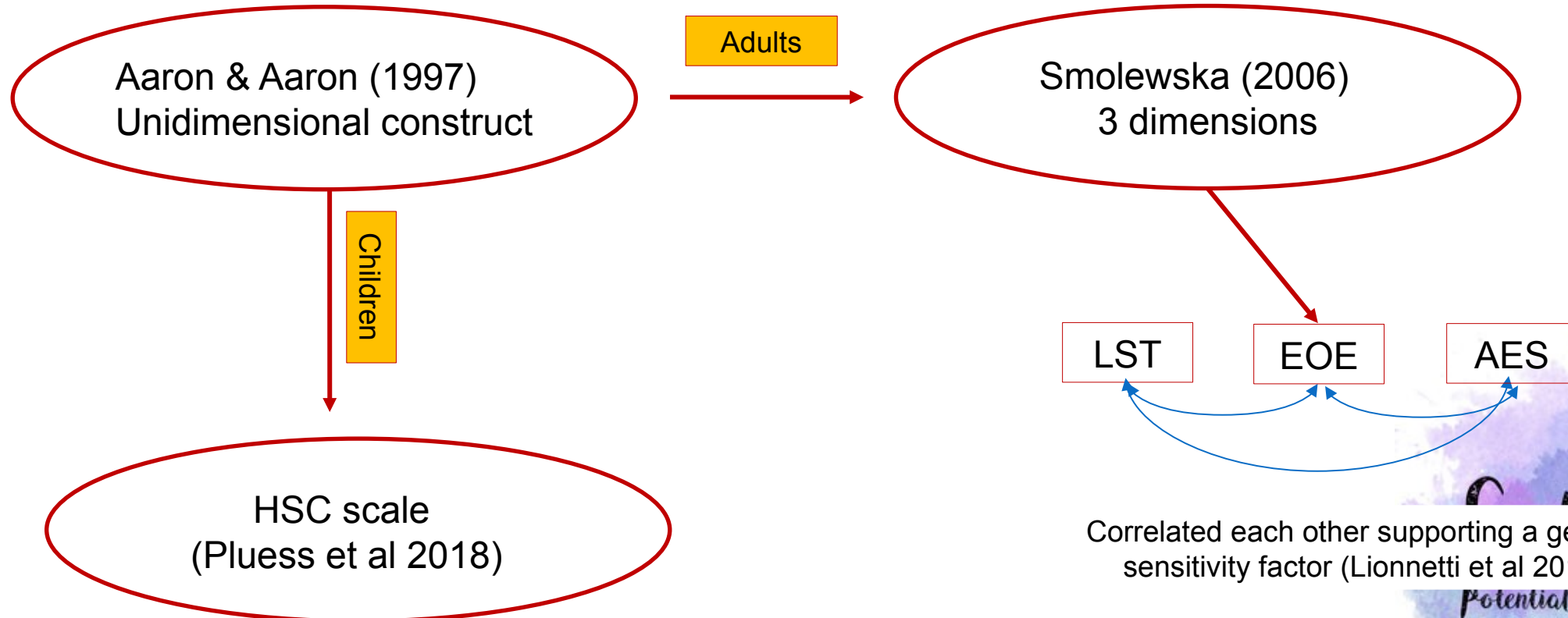
Boterberg & Warreyn (2016)...

- N=235, The 23-item parent-report Highly Sensitive Person Scale (HSPS; Aron, 2002) five-point Likert scale (1 =“strongly disagree”; 5=“strongly agree”)...
- Two factor solution: Overreaction to Stimuli (OS) Depth of Processing (DP)



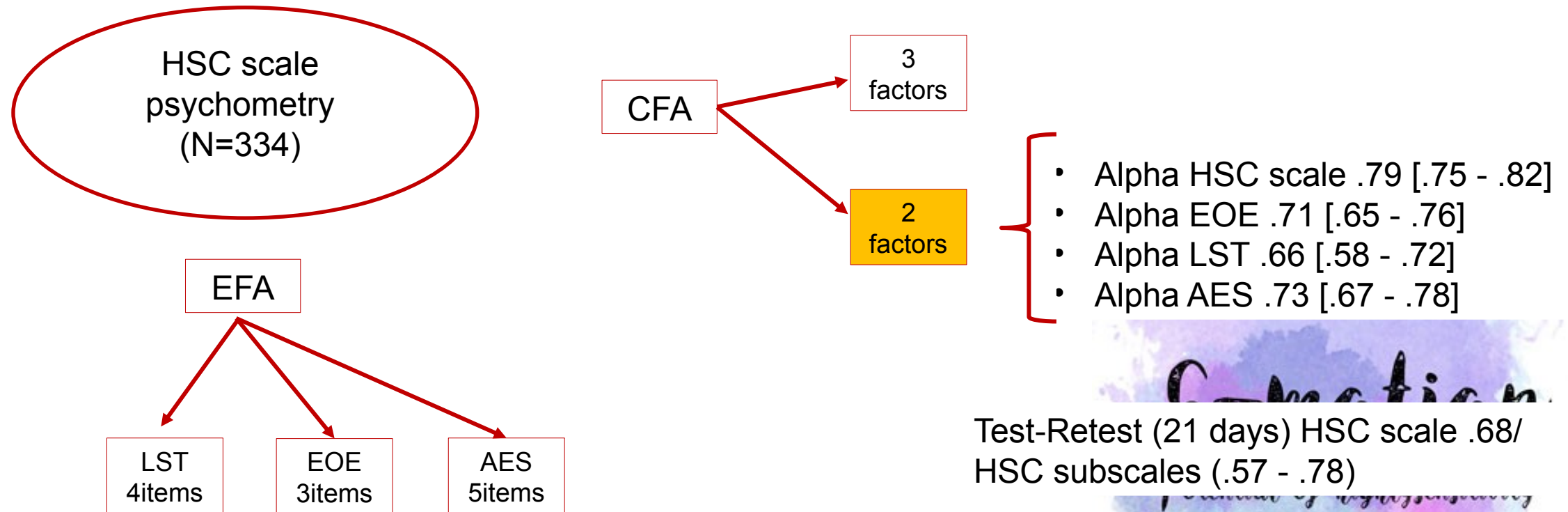
SPS: Trait environment

Pluess et al 2018...



SPS: Trait environment

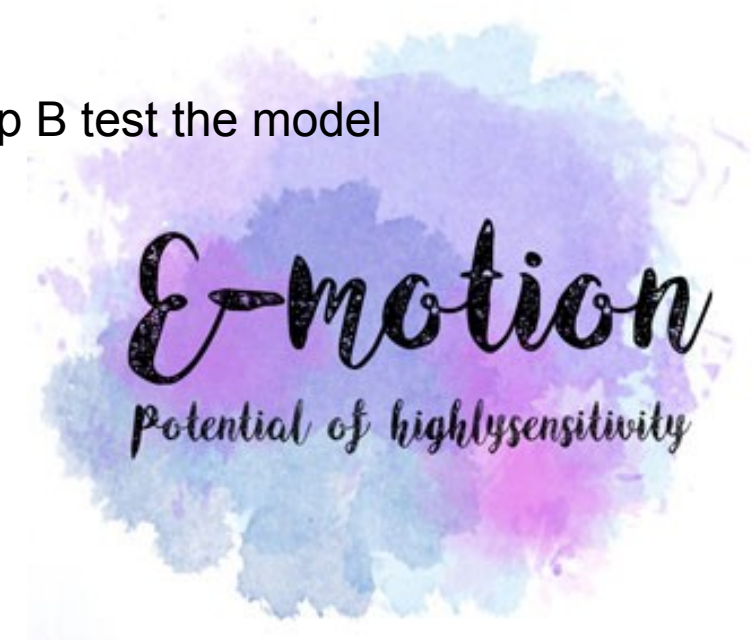
Pluess et al 2018... Development of the Highly Sensitive Child Scale



SPS: Trait environment

Are there different groups attending to sensitivity as theory said? (Aaron et al 2012; Boyce & Ellis, 2015)

- Assume continuous and normal distribution on dimension
- **Latent class analysis** (Data Driven hypothesis free)
- N= 592 children; N=1470 adolescent group A; N=1473 adolescent group B test the model



SPS: Trait environment

Children results 3 classes

24.67% Low cut-off point ≤ 4.17 point on HSC scale $>$

41.24% Medium

34.08 % High cut-off point on HSC scale > 4.75

Adolescent results 3 classes

34.90 – 34.98 % Low cut-off point ≤ 3.64

41.04 – 46.90% Medium

21.20 – 23.97% High cut-off point > 4.65

E-motion
potential of highly sensitivity

SPS: Trait environment

Construct review and future directions... Conclusions related to measure of SPS

- The Highly Sensitive Person (HSP) a validated scale for measure SPS in adults
- The Highly Sensitive Child (HSC) 12 self-report in Children from 8 years (Pluess et al 2017) includes some “new” items such as “I find it unpleasant to have a lot going on at once” and “Some music can make me really happy”.
- The HSC scale has also been used in a parent-report format in order to assess sensitivity in kindergarten children, same items from the HSC but rephrased for parent reporting child's behavior



SPS: Trait environment



HSP/HSC scales, HSC rating-system

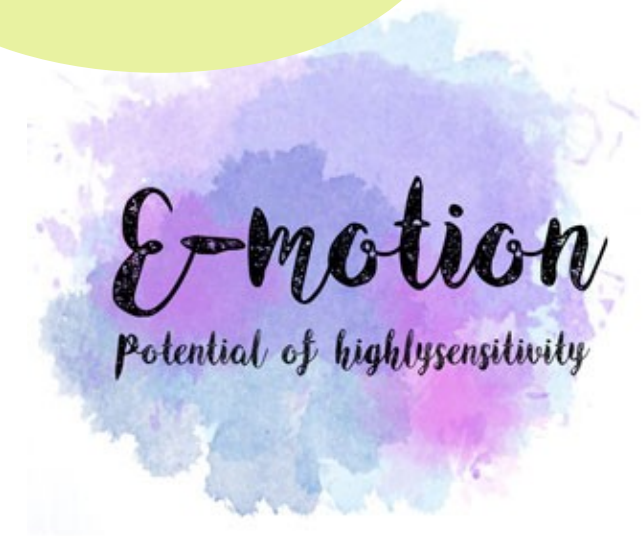
- Two reconciled view: One factor SPS (Aaron & Aaron, 1997) three factor (Smolewska et al 2006, Pluess et al 2017): LST, AES; EOS.... Now One general factor SPS and three dimensions (LST, AED, EOS)..
- Measurement invariance has been confirmed across age, gender, and country based on Dutch and UK versions (Weyn et al., under review). Both HSC and HSP scores tend to be normally distributed in the population (Booth et al., 2015; Pluess et al., 2017), although some authors have pointed out a slight trend towards a bimodal distribution (Aron et al., 2012; Lionetti et al., 2018).
- SPS seen as a continuum from low sensory individuals to high sensitive individuals

Aims: online tool for testing SPS in children

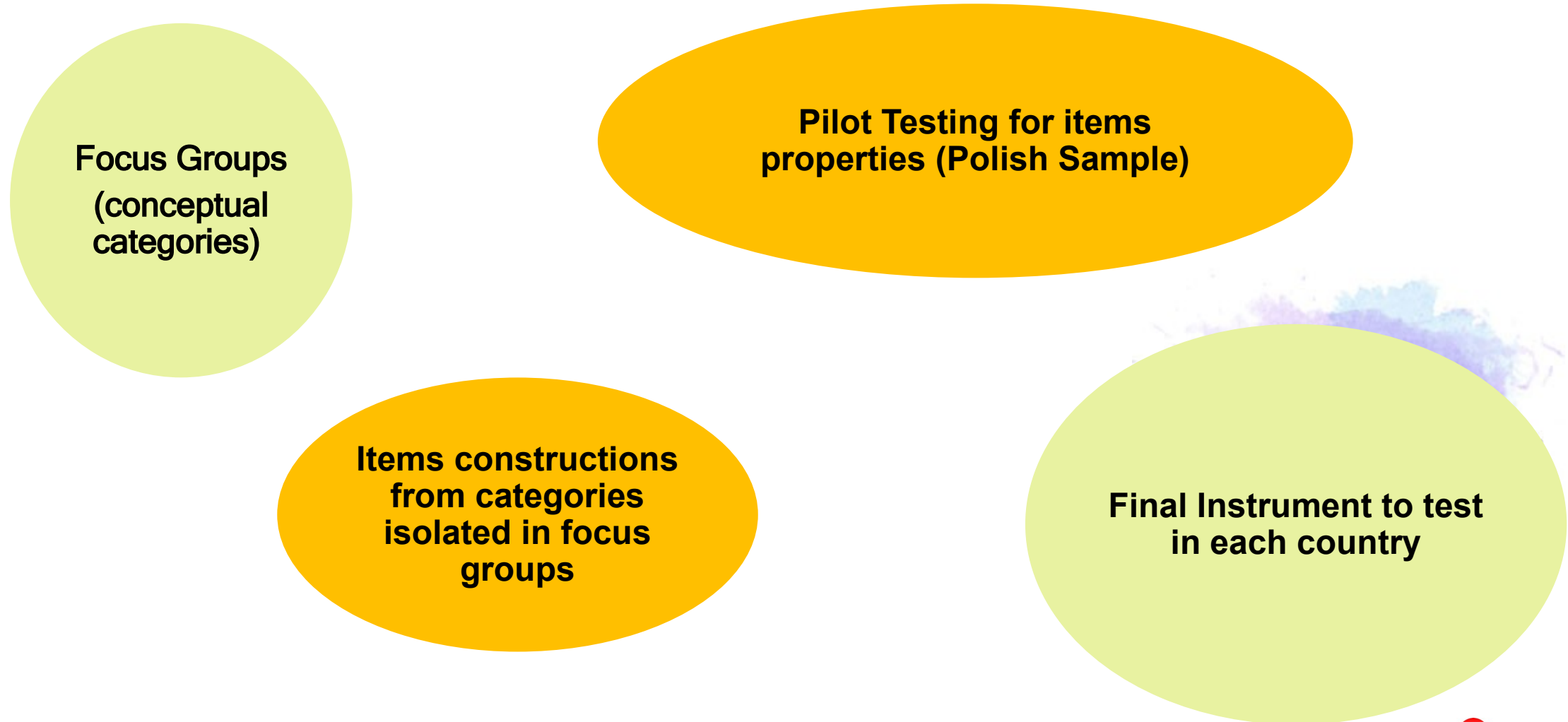
Can we create an on line tool for testing children on SPS?

Who are the informant?

Teachers and Parents



Aims: online tool for testing SPS



Target Groups

**Teachers
Pre School**

**Parents Pre
School**

**Teacher
Primary
School**

**Parent
Primary
School**



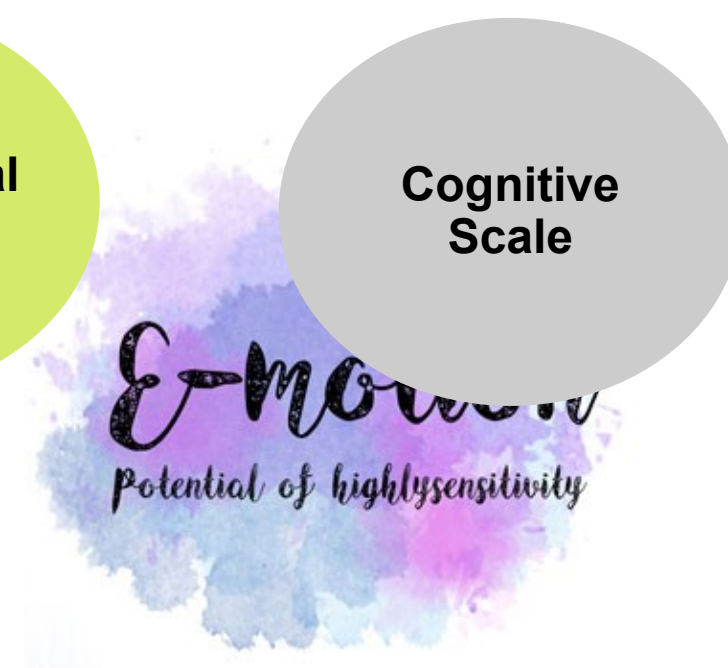
Sensory Processing Sensitivity: E-MOTION proposed Dimensions

**Physical
Scale**

**Emotional
Scale**

**Interpersonal
Scale**

**Cognitive
Scale**



Physical Scale Focus Group Categories

Physical sphere of HS - 15 categories focus groups

External Sensitivity 1 - Hearing

External Sensitivity 2 - Touch+Temperature

External Sensitivity 3 - Seeing

External Sensitivity 4 - Taste

External Sensitivity 5 - Smell

Internal Sensivity

Reactions of physical discomfort

Physical complexity-Overstimulation

Reactions to environment

Difficulties to sleep

Ways of coping - complejidad física

Ways of coping - 1 Crying

Ways of coping - 2 evitative Behaviour

Ways of coping - 3 Aislamiento

Physical Scale Teachers items

	TEACHER SURVEY.
	PHYSICAL SPHERE teach
it1	Has bad noise tolerance
it2	Finds intense lights unpleasant
it3	Avoid being in the bright sun
it4	Badly tolerates tags, scratching materials
it5	Dislikes certain food textures (e.g. diluted, pasty, lumpy)
it6	Perceives some flavors very intensively
it7	Has a particularly sensitive sense of smell
it8	If experiences something intensely, complains of pain (e.g. headache, stomach ache)
it9	More often than other children, signals a need for rest
it10	Badly tolerates dirt, wetting, etc. on clothing or on the hands
it11	When many things happen at once, is tired more than other children
it12	Easily identifies small changes (or modifications) in the environment/surroundings
it13	Often complains of pain for no apparent reason

Physical Scale Parents items

	PHYSICAL SPHERE PARENTS
it1	Has bad noise tolerance
it2	Loves nice sounds
it3	Too hot foods bother her/him
it4	Finds intense lights unpleasant
it5	Is sensitive to temperature changes
it6	Avoid being in the bright sun
it7	Dislikes certain food textures (e.g. diluted, pasty, lumpy)
it8	Perceives some flavors very intensively
it9	Has a particularly sensitive sense of smell
it10	If experiences something intensely, complains of pain (e.g. headache, stomach ache)
it11	More often than other children, signals a need for rest
it12	Badly tolerates dirt, wetting, etc. on clothing or on the hands
it13	When many things happen at once, is tired more than other children
it14	It is difficult for him to fall asleep, especially after an active day
it15	Easily identifies small changes (or modifications) in the environment/surroundings
it16	Is happy to try new dishes

Emotional Scale Focus Categories

EMOTIONAL SPHERE OF HS – 16 categories Focus Group

Deep experience of emotions

Empathy

Emotional Influence

Intense expression of emotions

Somatic manifestation of emotions

High levels of stress

Attachment to objects

Emotional interactions with nature

Emotional interaction with art

Emotional interactions with animals

Reactions of emotions

Reactions of emotions - 1 Crying

Reactions of emotions - 2 Hypeactivity

Reactions of emotions - 3 Flow

Reactions of emotions - 4 Negative Attitude

Emotional Scale Teachers items

	EMOTIONAL SPHERE TEACHER
it1	Needs favorite objects to feel better
it2	Is easily embarrassed
it3	Is worried about the assessment of others
it4	Has a special loathing for insects, e.g. fly, gnat, spider
it5	Has a tendency to pessimistic / unfavorable course of events
it6	Experiences art very much, e.g. is moved by movies and music
it7	Has a tendency to accumulate emotions
it8	It's hard to control strong emotions
it9	Experiences emotions intensely
it10	Doesn't need much to cry, hysteria
it11	Fatigue is manifested by aggression
it12	When many things happen at once, it stresses him/her more than other children
it13	Needs more time to feel comfortable in a new place
it14	Once disappointed, it avoids similar situations, places and events for a long time

Emotional Scale Parents items

	EMOTIONAL SPHERE PARENTS
it1	Is strongly influenced by the moods and emotions of other people
it2	Badly tolerates difficult emotions of others (e.g., sadness, anger, tension)
it3	Expresses strong emotions, especially towards loved ones (emotion puffs up, rebound)
it4	Even small events, everyday situations, can be source of stress for her / him (e.g. school trip / pre-school exit)
it5	Needs favorite objects to feel better
it6	Is easily embarrassed
it7	Is worried about the assessment of others
it8	Has a special loathing for insects, e.g. fly, gnat, spider
it9	Has a tendency to pessimistic / unfavorable course of events
it10	Experiences art very much, e.g. is moved by movies and music
it11	Has a tendency to accumulate emotions
it12	It's hard to control strong emotions
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it16	When many things happen at once, it stresses him/her more than other children

Interpersonal Scale Focus Categories

SOCIAL SPHERE OF HS – 14 categories

Roles in group

Go unnoticed in groups

Be in the spotlight in groups

Multiple interactions within the group

Time for group integration

Distraction by social interactions

Mental block in time or results situations

Lack of communication of needs/problems

Intense reactivity to social rewards and punishment

Ways of coping SS (social situations)

Ways of coping SS - 1 Fear and Anxiety

Ways of coping SS - 2 Avoiding conflicts

Ways of coping SS - 3 Thinking about their fault

Ways of coping SS - 4 Social support

**Interpersonal
Scale
Teachers items**

	INTERPERSONAL SPHERE TEACHER
it1	In the new group, remains an observer for a long time before joining the activity
it2	Needs additional incentives(stimulus) to get involved in the group
it3	In a group where a lot is going on, it seems to be temporarily absent
it4	Badly tolerates time pressure in situations of evaluation, competition (tests, competitions)
it5	Public appearances (academies, competitions) cost her/him more than other children
it6	Rarely signal his/her needs
it7	Experiences conflicts with peers particularly intensely and for a long time
it8	Feels guilty even when there is no reason to do so
it9	Reveals some difficult situations and begins to talk about them after a long time
it10	In relations with others, she/he seems shy
it11	Doesn't like to be observed
it12	Blocks himself/herself when is the center of attention
it13	Reacts disproportionately/exaggerated to criticisms

Interpersonal Scale Parents items

	INTERPERSONAL SPHERE par pre
it1	Attaches great importance to how other children assess him/her
it2	Need more time to establish relationships with peers
it3	Needs additional incentives(stimulus) to get involved in the group
it4	In a group where a lot is going on, it seems to be temporarily absent
it5	Badly tolerates time pressure in situations of evaluation, competition (tests, competitions)
it6	Public appearances (academies, competitions) cost her/him more than other children
it7	Rarely signal his/her needs
it8	Experiences conflicts with peers particularly intensely and for a long time
it9	The teacher's comments to the group / class are mainly taken to himself/herself
it10	Reveals some difficult situations and begins to talk about them after a long time
it11	In relations with others, she/he seems shy
it12	Approaches newly met people from a distance
it13	Doesn't like to be observed
it14	Blocks himself/herself when is the center of attention
it15	Before joins the group, needs more time than peers
it16	Reacts disproportionately/exaggerated to criticisms

Cognitive Scale Focus Group

COGNITIVE SPHERE OF HS – 17 categories

Cognitive inflexibility

Cognitive overload

Smart sense of humour

Deep cognitive processing

Repetitive questions

Perfectionism

Intuitive Processing

Self-Steem

Perseverance in the task

Warm and calm discipline

Experience integration

Episodic memory

Need of control

Creativity

Ways of coping CA (cognitive aspects)

Ways of coping CA 1 - Asking questions

Ways of coping CA 2 - Fear and Anxiety

Cognitive Scale Teachers items

	COGNITIVE SPHERE TEACHER
it1	Is overwhelmed by a large amount of information at once
it2	Asks deep, thought-provoking questions
it3	He can "drill" the topics she/he is interested in with great determination
it4	Has a special sense of humor, often not understood by peers
it5	Jokes in an intelligent way
it6	Uses rich vocabulary beyond his age
it7	Tries to perform the task entrusted by the teacher with great care
it8	Is an "expert" in some area of
it9	Can surprise you with information / knowledge
it10	In the face of a new task, analyzes all potential scenarios, anticipating difficulties and threats
it11	A slight failure causes the withdrawal of many activities that have been undertaken without any difficulty
it12	Before starts tasks, asks a lot of questions
it13	Is creative
it14	Likes stability and reproducibility/repetitively in behavior and actions
it15	Easily remembers details and previously experiences

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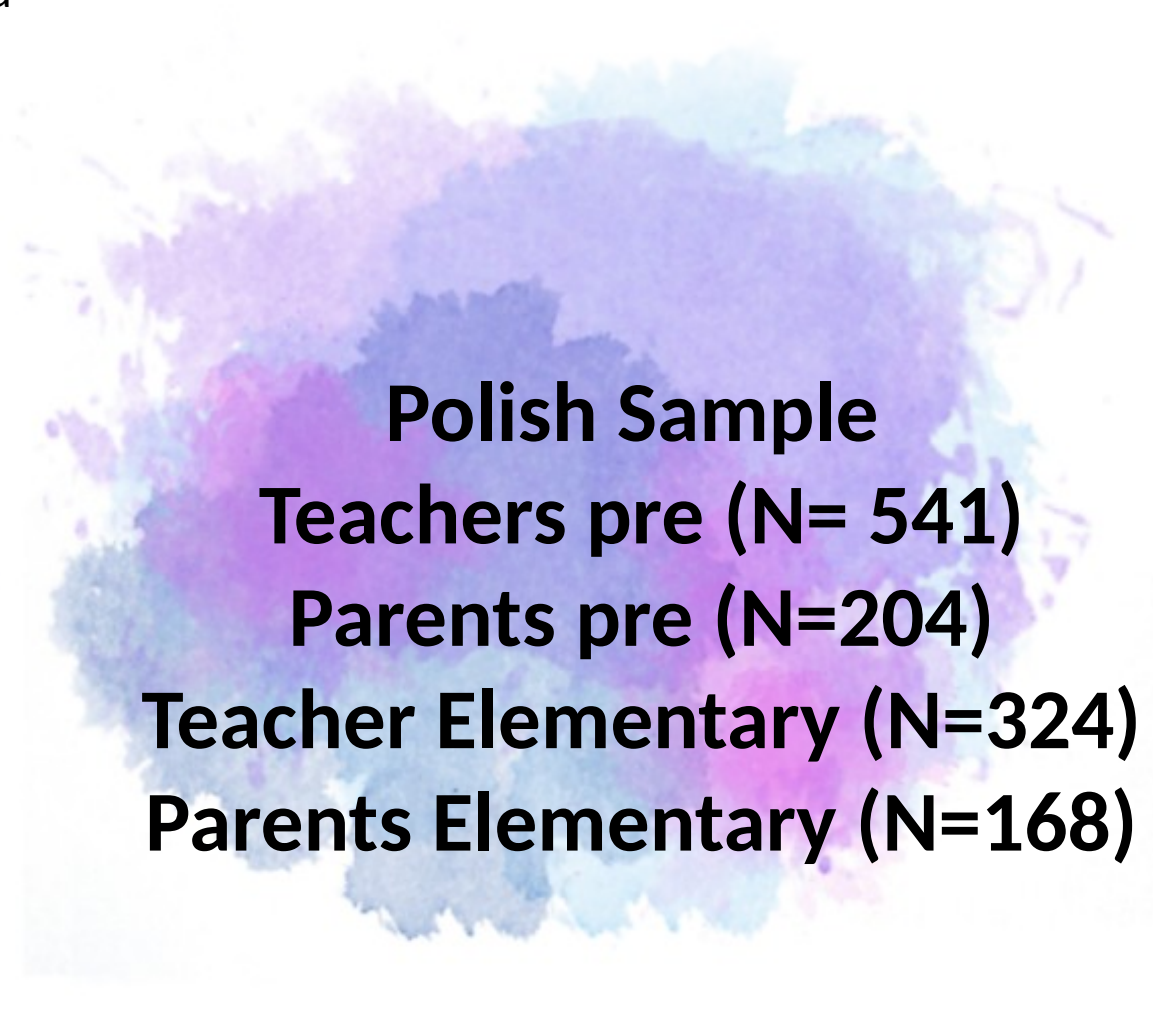
Cognitive Scale Parents items

	COGNITIVE SPHERE par pre
it1	Shows signs of tension when starts working on a new task
it2	Is strongly attached to his/her way of thinking
it3	New situations cause him/her a strong need to search for information, ask questions, dispel doubts
it4	Is not satisfied with a superficial and casual answers
it5	Is slowly getting used to new people, things and phenomena
it6	Is overwhelmed by a large amount of information at once
it7	Asks deep, thought-provoking questions
it8	He can "drill" the topics she/he is interested in with great determination
it9	Has a special sense of humor, often not understood by peers
it10	Jokes in an intelligent way
it11	Uses rich vocabulary beyond his age
it12	Tries to perform the task entrusted by the teacher with great care
it13	Is an "expert" in some area of
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it15	In the face of a new task, analyzes all potential scenarios, anticipating difficulties and threats
it16	A slight failure causes the withdrawal of many activities that have been undertaken without any difficulty

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Testing our instrument



Polish Sample
Teachers pre (N= 541)
Parents pre (N=204)
Teacher Elementary (N=324)
Parents Elementary (N=168)


TEACHER PRESCHOOL								
	P25	P50	P75	P90	P95	P99		
PHS_T	2	3	4	4	5	6		
EMS_T	3	3	4	5	5	6		
INTS_T	2	3	4	5	5	6		
COGS_T	3	3	4	5	5	6		
TEM_T	3	3	3	3	4	4		
HSChpl_T	3	3	3	4	4	5		
	PHS_T	EMS_T	INTS_T	COGS_T	HSChpl_T	EMOC_T	ACT_T	SOCI_T
PHS_T								
EMS_T	0,67***							
INTS_T	0,57***	0,74***						
COGS_T	0,34***	0,28***	0,07					
HSChpl_T	0,71***	0,59***	0,53***	0,35***				
EMOC_T	0,37***	0,52***	0,36***	0,29***	0,40***			
ACT_T	0,28***	0,40***	0,30***	0,12**	0,26***	0,41***		
SOCI_T	0,31***	0,43***	0,41***	0,06	0,26***	0,46***	0,65***	
SHY_T	-0,16***	-0,22***	-0,11*	-0,13**	-0,25***	-0,43***	-0,14***	-0,12**
			Alfa	G.6	Omega.J			
		PHS	0,957	0,984	0,811			
		EMS	0,956	0,983	0,823			
		INTS	0,96	0,986	0,809			
		COGS	0,952	0,984	0,832			
		HSChpl	0,928	0,973	0,724			

Parents Preschool								
	P25	P50	P75	P90	P95	P99		
HSC	4	5	5	6	6	6		
PHS	3	3	4	5	5	6		
EMS	2	3	4	5	5	5		
INTS	2	3	3	5	5	5		
COGS	3	4	4	5	5	6		
TEM	3	3	3	3	3	3		
HSCpl	2	3	3	4	4	4		
	PHS_P	EMS_P	INTS_P	COGS_P	HSC_P	EMOC_T	ACT_T	SOCI_T
EMS_P	0,66***							
INTS_P	0,44***	0,66***						
COGS_P	0,50***	0,56***	0,47***					
HSC_P	0,70***	0,64***	0,44***	0,47***				
EMOC_T	0,41***	0,45***	0,21**	0,30***	0,36***			
ACT_T	-0,02	-0,06	-0,1	-0,03	-0,05	0,03		
SOCI_T	0,33***	0,43***	0,44***	0,37***	0,27***	0,56***	0,03	
SHY_T	-0,28***	-0,37***	-0,25***	-0,34***	-0,26***	-0,55***	0,07	-0,52***
			Alfa	G.6	Omega.J			
		PHS	0,95	0,98	0,78			
		EMS	0,96	0,98	0,83			
		INTS	0,97	0,99	0,83			
		COGS	0,95	0,98	0,78			
		HSC	0,91	0,96	0,72			

Teacher Elementary School								
	P25	P50	P75	P90	P95	P99		
PHS	3	3	4	5	5	5		
EMS	2	3	4	4	5	5		
INTS	2	3	4	5	5	6		
COGS	3	4	5	5	5	6		
HSC	2	3	3	4	4	4		
	PHS_T	EMS_T	INTS_T	COGS_T	HSChpl_T	EMOC_T	ACT_T	SOCI_T
EMS_T	0,64***							
INTS_T	0,42***	0,61***						
COGS_T	0,35***	0,22***	-0,14*					
HSChpl_T	0,52***	0,49***	0,27***	0,35***				
EMOC_T	0,32***	0,42***	0,15**	0,34***	0,54***			
ACT_T	0,31***	0,36***	0,34***	0,1	0,24***	0,30***		
SOCI_T	0,32***	0,47***	0,49***	0,09	0,18**	0,36***	0,56***	
SHY_T	-0,28***	-0,35***	-0,20***	-0,24***	-0,28***	-0,44***	-0,08	-0,23***
		Alfa	G.6	Omega.J				
	PHS	0,93	0,98	0,71				
	EMS	0,94	0,98	0,75				
	INTS	0,98	0,98	0,83				
	COGS	0,95	0,98	0,85				

Parent Primary School							
	P25	P50	P75	P90	P95	P99	
PHS	3	3	4	5	5	6	
EMS	3	4	5	5	5	6	
INTS	2	3	4	5	6	6	
COGS	3	4	5	5	5	6	
	PHS_T	EMS_T	INTS_T	COGS_T	HSC_T	EMOC_T	ACT_T
PHS_T							
EMS_T	0,70***						
INTS_T	0,58***	0,64***					
COGS_T	0,41***	0,50***	0,29***				
HSC_T	0,71***	0,54***	0,49***	0,35***			
EMOC_T	0,40***	0,54***	0,31***	0,32***	0,32***		
ACT_T	0,19*	0,29***	0,26***	0,16*	0,25**	0,35***	
SOCI_T	0,32***	0,49***	0,46***	0,18*	0,29***	0,59***	0,59***
SHY_T	-0,31***	-0,45***	-0,24**	-0,31***	-0,31***	-0,55***	-0,27***
			Alfa	G.6	Omega. J		
		PHS	0,95	0,79	0,98		
		EMS	0,95	0,78	0,98		
		INTS	0,97	0,75	0,99		
		COGS	0,94	0,76	0,98		
		HSChpl	0,93	0,77	0,91		

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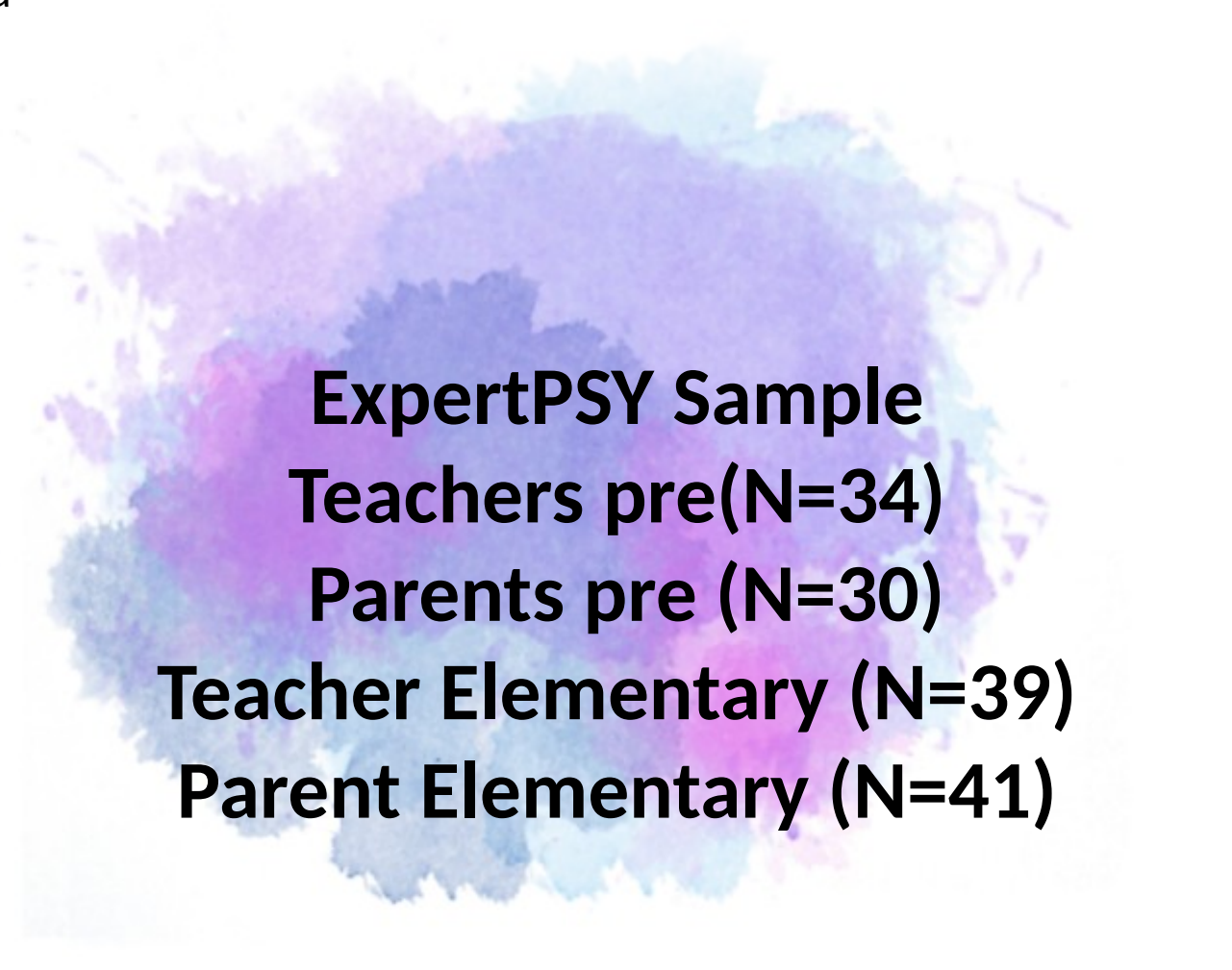
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Brescia Preschool Sample Teachers (N=137) Parents (N=53)

Teacher PreSchool Breshia								
	Alpha	Gutman	Omega UI		TEM	PHS_T	EMS_T	INTS_
PHS_T	0,88	0,91	0,65	PHS_T	0,76***			
EMS_T	0,88	0,91	0,61	EMS_T	0,77***	0,70***		
INTS_T	0,9	0,92	0,63	INTS_T	0,72**	0,67***	0,63***	
COGS_T	0,95	0,96	0,84	COGS_T	0,57***	0,55***	0,50***	0,55**
		P25	P50	P75	P90	P95	P99	
	PHS_T	2	3	4	5	5	6	
	EMS_T	2	3	4	5	5	6	
	INTS_T	2	3	4	5	5	6	
	COGS_T	2	3	4	5	6	7	

Parent Preschool								
	HSC_MK	PHS_T	EMS_T	INTS_T	PHS	Alfa	G.6	Omega.J
PHS_T	0,64***				EMS	0,86	0,71	0,61
EMS_T	0,50**	0,74**			INTS	0,87	0,91	0,56
INTS_T	0,41**	0,64**	0,74**		COGS	0,88	0,93	0,52
COGS_T	0,50**	0,73**	0,67**	0,53**	HSC	0,87	0,92	0,56
						0,86	0,9	0,61
		P25	P50	P75	P90	P95	P99	
	HSC_MK	4	5	6	6	7	7	
	PHS_T	3	4	5	6	6	6	
	EMS_T	3	3	4	5	5	6	
	INTS_T	2	3	4	5	5	6	
	COGS_T	3	4	5	5	6	6	

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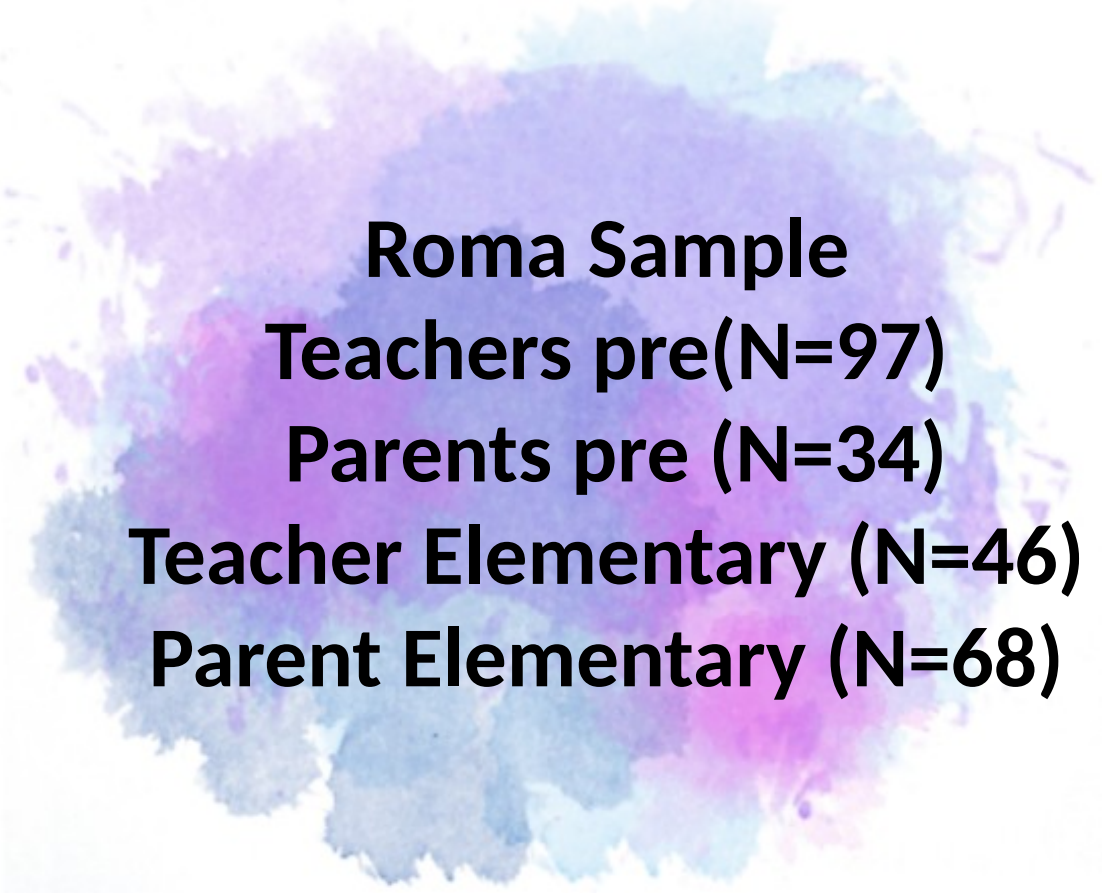
ExpertPSY Sample
Teachers pre(N=34)
Parents pre (N=30)
Teacher Elementary (N=39)
Parent Elementary (N=41)

Teacher Preschool										
	PHS_T	EMS_T	INTS_T	COGS_T	ACT_T	DIS_T	INC_T	PER_T	SHY_T	
EMS_T	0,70**									
INTS_T	0,61**	0,74***								
COGS_T	0,3	0,47**	0,45*							
ACT_T	-0,24	-0,18	-0,07	-0,08						
DIS_T	0,24	0,21	0,35	0,18	0,38*					
INC_T	0,12	0,12	0,32	0,19	0,31	0,50**				
PER_T	0,05	0,25	0,03	0,02	-0,08	-0,13	0,29			
SHY_T	-0,3	-0,15	-0,46*	0,02	-0,01	-0,17	-0,21	-0,17		
HSC_T	0,49**	0,41*	0,65***	0,28	0,03	0,38*	0,32	0,14	-0,52**	
	Alfa	G.6	Omega. J		P25	P50	P75	P90	P95	P99
PHS	0,94	0,97	0,84	PHS_T	3	3	4	5	5	5
EMS	0,93	0,98	0,89	EMS_T	3	4	4	5	5	5
INTS	0,96	0,98	0,86	INTS_T	3	4	4	5	5	5
COGS	0,97	0,99	0,84	COGS_T	3	4	5	5	5	5

Parent Preschool										
	HSC_T	PHS_T	EMS_T	INTS_T	COGS_T	ACT_T	DIS_T	INC_T	PER_T	SHY_T
PHS_T	0,67***									
EMS_T	0,54**	0,67***								
INTS_T	0,54**	0,64***	0,81***							
COGS_T	0,53**	0,68***	0,71***	0,71***						
ACT_T	0,52**	0,50**	0,58**	0,56**	0,62***					
DIS_T	0,57**	0,64***	0,45*	0,51**	0,53**	0,75***				
INC_T	0,31	0,33	0,26	0,27	0,29	0,73***	0,72***			
PER_T	0,41*	0,58**	0,23	0,23	0,53**	0,64***	0,68***	0,71***		
SHY_T	0,52**	0,39*	0,38*	0,33	0,61***	0,72***	0,66***	0,69***	0,69***	
HSCRO_T	0,56**	0,77***	0,64***	0,72***	0,81***	0,69***	0,77***	0,55**	0,67***	0,63***
	Alfa	G.6	Omega.J		P25	P50	P75	P90	P95	P99
HSC	0,9	0,96	0,61	PHS_T	3	3	4	4	5	5
PHS	0,84	0,94	0,44	EMS_T	2	3	4	5	5	6
EMS	0,92	0,97	0,68	INTS_T	2	3	4	5	5	6
INTS	0,93	0,98	0,58	COGS_T	3	4	5	5	6	6
COGS	0,91	0,97	0,62							
HSCRo	0,84	0,93	0,45							

Teacher Elementary										
	PHS_T	EMS_T	INTS_T	COGS_T	ACT_T	DIS_T	INC_T	PER_T	SHY_T	
EMS_T	0,56***									
INTS_T	0,26	0,57***								
COGS_T	-0,07	-0,07	-0,13							
ACT_T	0,03	0,29	0,22	-0,08						
DIS_T	0,41*	0,31	0,18	0,11	0,54***					
INC_T	-0,05	-0,01	-0,14	0,24	0,07	-0,24				
PER_T	0,3	0,14	0,01	-0,07	-0,03	0,28	0,24			
SHY_T	0,16	0,24	-0,03	-0,12	0,18	0,17	0,33*	0,36*		
HSCRO_T	0,50**	0,76***	0,56***	0,03	0,18	0,11	0,01	-0,07	0,17	
	Alfa	G.6	Omega.J		P25	P50	P75	P90	P95	P99
PHS	0,91	0,96	0,66	PHS_T	4	4	5	5	5	5
EMS	0,89	0,94	0,61	EMS_T	4	4	5	5	5	6
INTS	0,92	0,95	0,83	INTS_T	3	4	5	5	6	6
COGS	0,89	0,93	0,84	COGS_T	4	5	5	5	5	6
HSCRO	0,83	0,9	0,25							

Parent Elementary										
	HSC_T	PHS_T	EMS_T	INTS_T	COGS_T	ACT_T	DIS_T	INC_T	PER_T	
PHS_T	0,35*									
EMS_T	0,39*	0,70***								
INTS_T	0,2	0,61***	0,58***							
COGS_T	0,2	0,60***	0,65***	0,64***						
ACT_T	-0,1	0,3	0,3	0,2	0,38*					
DIS_T	0	0,58***	0,43**	0,47**	0,50**	0,43**				
INC_T	-0,2	0,2	0,1	0,3	0,63***	0,2	0,35*			
PER_T	-0,1	0,1	0,2	0,3	0,34*	0,2	0,3	0,2		
SHY_T	0,2	0	0	0	-0,1	0,3	-0,1	-0,2	0,2	
HSCRO_T	0,3	0,45**	0,71***	0,52**	0,67***	0,1	0,46**	0,35*	0,51**	
	Alfa	G.6	Omega.J		P25	P50	P75	P90	P95	P99
HSC	0,88	0,93	0,6	PHS_T	3	4	4	5	6	6
PHS	0,9	0,94	0,57	EMS_T	4	4	5	6	6	7
EMS	0,92	0,95	0,69	INTS_T	3	4	5	6	6	7
INTS	0,92	0,96	0,64	COGS_T	4	5	5	6	6	7
COGS	0,9	0,95	0,48							
HSCRo	0,81	0,89	0,54							



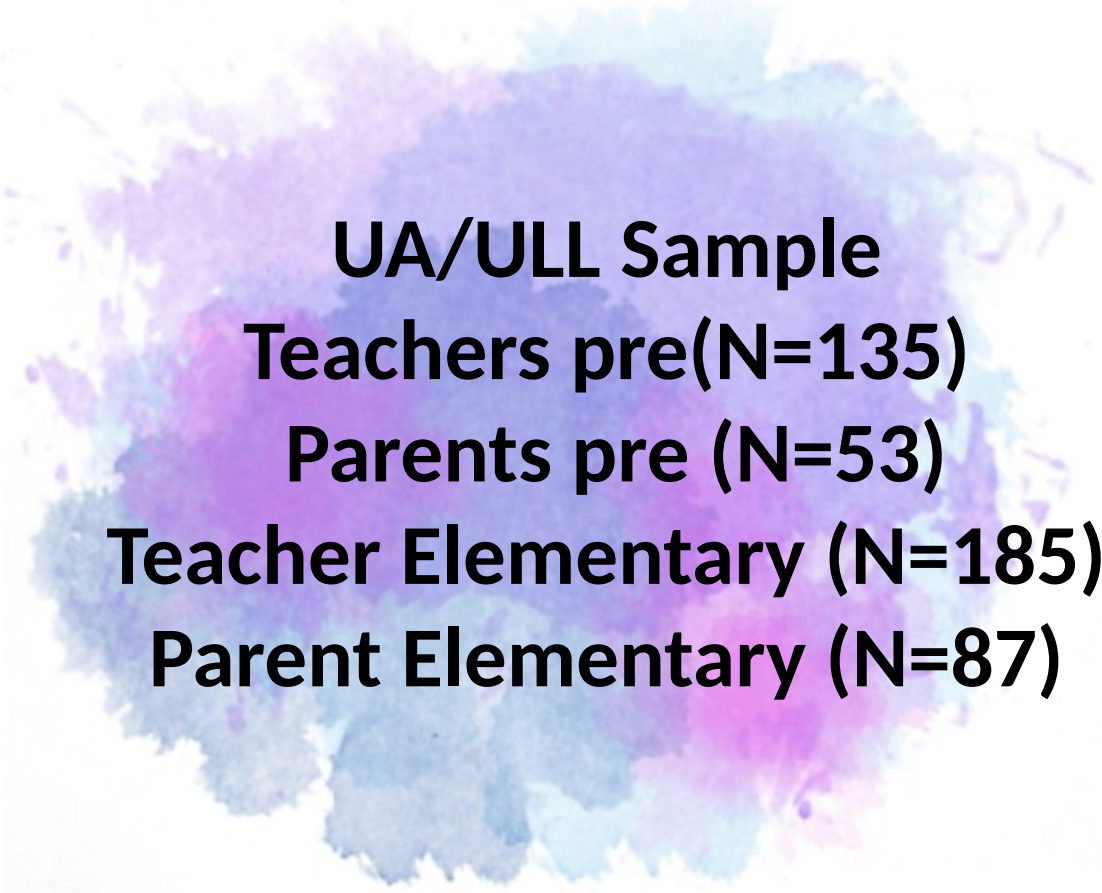
Roma Sample
Teachers pre(N=97)
Parents pre (N=34)
Teacher Elementary (N=46)
Parent Elementary (N=68)

Teacher PreSchool										
	PHS_T	EMS_T	INTS_T	COGS_T	SCO_T	ACT_T	EMOC_T	SHY_T		
EMS_T	0,79***									
INTS_T	0,66***	0,85***								
COGS_T	0,58***	0,50***	0,19							
SOC_T	0,02	-0,1	-0,25*	0,29**						
ACT_T	-0,22*	-0,25*	-0,34***	0,07	0,53***					
EMOC_T	0,58***	0,70***	0,59***	0,23*	-0,01	-0,05				
SHY_T	0,23*	0,48***	0,68***	-0,23*	-0,63***	-0,57***	0,28**			
HSC_T	0,69***	0,63***	0,33***	0,90***	0,28**	-0,01	0,36***	-0,12		
	Alfa	G.6	Omega.J		P25	P50	P75	P90	P95	P99
PHS	0,86	0,92	0,56	PHS_T	2	3	4	4	5	5
EMS	0,91	0,94	0,51	EMS_T	2	3	4	5	5	5
INTS	0,93	0,96	0,67	INTS_T	2	3	4	5	5	6
COGS	0,91	0,95	0,73	COGS_T	3	4	5	6	6	6
HSC	0,89	0,96	0,21							

Parent Preschool										
	PHS_T	EMS_T	INTS_T	COGS_T	HSCS_T	SOC_T	ACT_T	EMOC_T		
EMS_T	0,95***									
INTS_T	0,71***	0,76***								
COGS_T	0,84***	0,87***	0,82***							
HSCS_T	0,61***	0,60***	0,51**	0,75***						
SOC_T	0,32	0,35*	0	0,33	0,36*					
ACT_T	0,22	0,12	-0,07	0,17	0,11	0,57***				
EMOC_T	0,72***	0,72***	0,56***	0,75***	0,68***	0,49**	0,27			
SHY_T	0,59***	0,66***	0,82***	0,77***	0,51**	0,07	-0,06	0,72***		
	Alfa	G.6	Omega.J		P25	P50	P75	P90	P95	P99
PHS	0,9	0,98	0,56	PHS_T	3	4	5	6	6	6
EMS	0,93	0,99	0,88	EMS_T	3	4	5	6	6	6
INTS	0,95	0,99	0,75	INTS_T	2	3	4	6	6	6
COGS	0,93	0,99	0,6	COGS_T	4	4	5	6	6	6

Teacher Elementary										
	PHS_T	EMS_T	INTS_T	COGS_T	SOC_T	ACT_T	EMOC_T	TIM_T		
PHS_T										
EMS_T	0,75***									
INTS_T	0,65***	0,76***								
COGS_T	0,09	0,17	-0,02							
SOC_T	-0,01	0,21	-0,05	0,51***						
ACT_T	-0,01	-0,02	-0,38**	0,17	0,49***					
EMOC_T	0,62***	0,83***	0,49***	0,24	0,27	0,25				
TIM_T	-0,01	0,13	0,49***	-0,41**	-0,56***	-0,81***	-0,04			
HSCIT_T	0,55***	0,60***	0,46**	0,75***	0,34*	0,01	0,61***	-0,2		
	Alpha	Guttman	Omega I		P25	P50	P75	P90	P95	P99
PHS_T	0,89	0,98	0,55	PHS_T	2	2	3	4	5	5
EMS_T	0,92	0,97	0,73	EMS_T	2	3	4	5	5	5
INTS_T	0,92	0,98	0,58	INTS_T	3	4	4	5	6	6
COGS_T	0,87	0,97	0,24	COGS_T	2	3	4	5	5	5
HSC_T	0,87	0,98	0,25							

Parent Elementary										
	PHS_T	EMS_T	INTS_T	COGS_T	HSCS_T	SOC_T	ACT_T	EMOC_T		
EMS_T	0,78***									
INTS_T	0,63***	0,59***								
COGS_T	0,68***	0,75***	0,64***							
HSCS_T	0,81***	0,76***	0,66***	0,78***						
SOC_T	-0,06	0,26*	-0,22	0,16	0,02					
ACT_T	-0,07	0,22	-0,16	0,17	-0,07	0,60***				
EMOC_T	0,65***	0,81***	0,49***	0,64***	0,67***	0,23	0,35**			
SHY_T	0,08	-0,02	0,60***	0,11	0,17	-0,61***	-0,42***	-0,05		
	Alfa	G.6	Omega.J		P25	P50	P75	P90	P95	P99
PHS	0,92	0,96	0,79	PHS_T	3	4	5	6	6	7
EMS	0,93	0,96	0,65	EMS_T	4	4	6	6	6	6
INTS	0,94	0,97	0,72	INTS_T	3	4	5	5	6	6
COGS	0,94	0,97	0,62	COGS_T	4	5	6	6	6	6
HSC	0,92	0,98	0,62							



UA/ULL Sample
Teachers pre(N=135)
Parents pre (N=53)
Teacher Elementary (N=185)
Parent Elementary (N=87)

Teacher Preschool										
	PHS_T	EMS_T	INTS_T	COGS_T	SOC_T	ACT_T	EMOC_T	SHY_T		
EMS_T	0,72***									
INTS_T	0,49***	0,75***								
COGS_T	0,20*	0,20*	-0,13							
SOC_T	0,03	0,20*	0,08	0,34***						
ACT_T	0,52***	0,46***	0,42***	0,01	0,03					
EMOC_T	0,45***	0,56***	0,35***	0,11	0,15	0,38***				
SHY_T	0,17	0,38***	0,35***	0,1	0,06	-0,04	0,04			
HSC	0,82***	0,63***	0,34***	0,15	0,06	0,38***	0,31***	0,16		
	Alfa	G.6	Omega.J		P25	P50	P75	P90	P95	P99
PHY	0,9	0,94	0,68	PHS_T	2	2	2	3	4	5
EMS	0,77	0,86	0,46	EMS_T	2	2	3	4	4	5
INTS	0,88	0,95	0,85	INTS_T	2	2	3	4	4	5
COGS	0,9	0,95	0,92	COGS_T	2	2	4	5	5	5
HSC	0,6	0,78	0,5							

Parent Preschool										
	PHS_T	EMS_T	INTS_T	COGS_T	HSCS_T	SOC_T	ACT_T	EMOC_T		
EMS_T	0,74***									
INTS_T	0,39**	0,60***								
COGS_T	0,62***	0,60***	0,57***							
HSCS_T	0,76***	0,71***	0,43**	0,53***						
SOC_T	0,33*	0,11	-0,15	0,23	0,28*					
ACT_T	0,23	0,12	-0,09	0,18	0,18	0,21				
EMOC_T	0,42**	0,71***	0,33*	0,42**	0,45***	-0,04	0,24			
SHY_T	-0,12	0,14	0,60***	-0,03	0,05	-0,47***	-0,24	0,1		
	Alfa	G.6	Omega.J		P25	P50	P75	P90	P95	P99
PHS	0,87	0,71	0,92	PHS_T	3	4	4	5	5	6
EMS	0,88	0,92	0,57	EMS_T	3	4	4	5	5	6
INTS	0,9	0,95	0,45	INTS_T	2	3	4	5	5	5
COGS	0,91	0,95	0,67	COGS_T	3	4	4	5	5	6
HSC-S	0,84	0,9	0,76							

Teacher Elementary										
	PHS_T	EMS_T	INTS_T	COGS_T	SOC_T	T ACT_T	EMOC_T	SHY_T		
EMS_T	0,72***									
INTS_T	0,49***	0,75***								
COGS_T	0,20*	0,20*	-0,13							
SOC_T	0,03	0,20*	0,08	0,34***						
ACT_T	0,52***	0,46***	0,42***	0,01	0,03					
EMOC_T	0,45***	0,56***	0,35***	0,11	0,15	0,38***				
SHY_T	0,17	0,38***	0,35***	0,1	0,06	-0,04	0,04			
HSC_T	0,82***	0,63***	0,34***	0,15	0,06	0,38***	0,31***	0,16		
	P25	P50	P75	P90	P95	P99				
PHS_T	3	3	4	5	5	6				
EMS_T	2	3	4	4	4	6				
INTS_T	2	3	4	4	4	5				
COGS_T	2	3	4	5	5	6				
	Alfa	G.6	Omega.J							
PHS	0,86	0,55	0,33							
EMS	0,84	0,91	0,26							
INTS	0,9	0,94	0,76							
COGS	0,91	0,95	0,86							
HSC-S	0,86	0,91	0,57							

Parent Elementary								
	PHS_T	EMS_T	INTS_T	COGS_T	HSCS_T	SOC_T	ACT_T	EMOC_T
PHS_T								
EMS_T	0,69***							
INTS_T	0,49***	0,51***						
COGS_T	0,65***	0,66***	0,39***					
HSCS_T	0,62***	0,55***	0,45***	0,63***				
SOC_T	0,14	0,12	-0,24*	0,21	0,08			
ACT_T	0,03	0,11	-0,28**	0,11	-0,02	0,48***		
EMOC_T	0,49***	0,72***	0,38***	0,55***	0,42***	0,08	0,11	
TIM_T	0,14	0,2	0,65***	0,01	0,16	-0,40***	-0,38***	-0,02
	Alfa	G.6	Omega.J					
HSC	0,79	0,79	0,44					
PHS	0,86	0,89	0,64					
EMS	0,83	0,88	0,42					
INTS	0,87	0,92	0,64					
COGS	0,86	0,91	0,57					
	P25	P50	P75	P90	P95	P99		
PHS_T	3	4	5	5	5	6		
EMS_T	4	4	5	6	6	6		
INTS_T	3	3	4	5	5	6		
COGS_T	4	4	5	6	6	6		



Conclusions

- In this project we have developed and instrument measuring SPS in children aged 3 to 9 years attending to teachers and parents responses.
- We propose a model that establishes four dimensions in the SPS trait. Physical dimension, emotional dimension, interpersonal dimension and cognitive dimension.
- Collected samples allowed us to test psychometric properties from Polish sample and trends of a cross-cultural approach to the SPS trait.
- We observed trends confirm the theoretical model. The reliability indices and the indices of the irt models in the Polish sample show adequate values to assume the reliability of the scale in the measurement of the trait.

- Some items seems very controversial and need to be cleaned showed moderate and high values of uniqueness.
- Irt models running over Polish sample showed that scale response must be shortened to five point scale which is enough to measure the trait
- It was used EAS, CBQ, and HSC country versions for cross validation of our scales. Correlation data showed negative correlations with shyness and positive correlations with aspects of temperament that parallel high sensitivity. At the same time there were moderate correlation with HSC scale for those emotional, physical and cognitive aspect meaning

- It is proposed a percentile criterion to identify potentially highly sensitive children and highly sensitive children, with the 90th and 95th percentiles indicating characteristic scores for these children.
- We understand that both ends of the distribution will be a reason to attend to these children since their level of sensitivity can generate pathological developments if they are not attended to. A score at the 90th or 95th percentile on two or more of the subscales should alert us to a highly sensitive or potentially sensitive child.

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Thanks!!