Jersey genetic correlation – Interbull evaluation 2608

Raffaella Finocchiaro – Area 3

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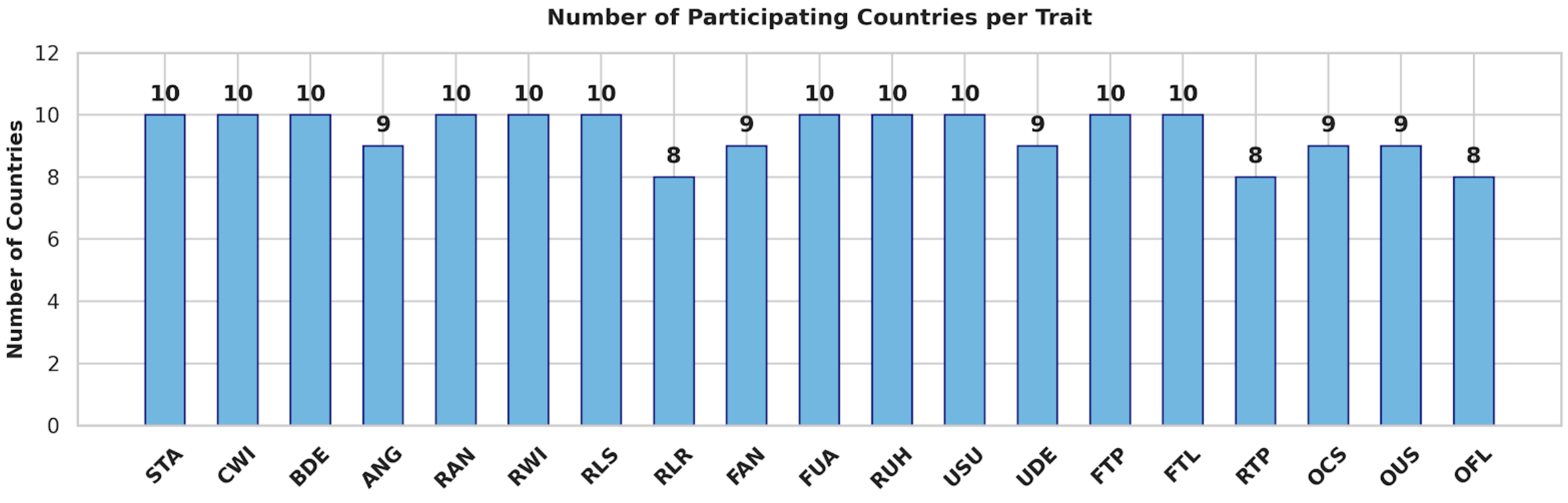
Introduction & Data input

- Jersey -> interbull traits 16

- Interbull evaluations since 1999
- Correlations between countries

- Correlation = measure of harmonisation of traits
- Overview on correlations for
  - linear traits
  - general characteristics

Interbull Evaluations



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Average EBV correlation – Interbull 2608

Level	Code		Complete name	Average Corr
≥ 0,90	UDE	UDDER	Udder Depth	0,9272
	RAN	FRAME	Rump Angle	0,9205
	STA	FRAME	Stature	0,9082
	RTP	UDDER	Rear Teat Placement	0,9062
0,80 – <0,90	FTP	UDDER	Teat Placement	0,9000
	RWI	FRAME	Rump Width	0,8238
	FUA	UDDER	Fore Udder	0,8199
< 0,80	RUH	UDDER	Rear Udder Height	0,7946
	BDE	FRAME	Body Depth	0,7800
	CWI	FRAME	Chest Width	0,7736
	RLS	FEET & LEGS	Rear Leg Set, Side View	0,7669
	USU	UDDER	Udder Support	0,7579
	ANG	FRAME	Rib_structure/angularity	0,7452
	FAN	FEET & LEGS	Foot Angle	0,7262
	RLR	FEET & LEGS	Rear Leg Set, Rear View	0,6385

Phenotypic correlations between linear traits within complex

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Survey

- **Data-call**→ Countries were asked to provide Jersey phenotipic correlations between all linear traits for 1° calving cows scored in 2025
  - 3 countries provided correlations for 2025

Interpreting the correlations

- The phenotypic correlation indicates **whether changes in one trait are systematically associated with changes in a second trait**
- The value **(-1.0 to +1.0**) indicates **how strong the association** is
  - -1.0 or +1.0 means if one trait changes in value the other trait does it always too i.e. both traits are the same, may be just on a different scale
- **Different correlations between countries <u>don't tell</u>**
  - **what trait is the source/reason** (1st, 2nd, both traits)
  - **who is 'right'**

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Body group traits pair correlations

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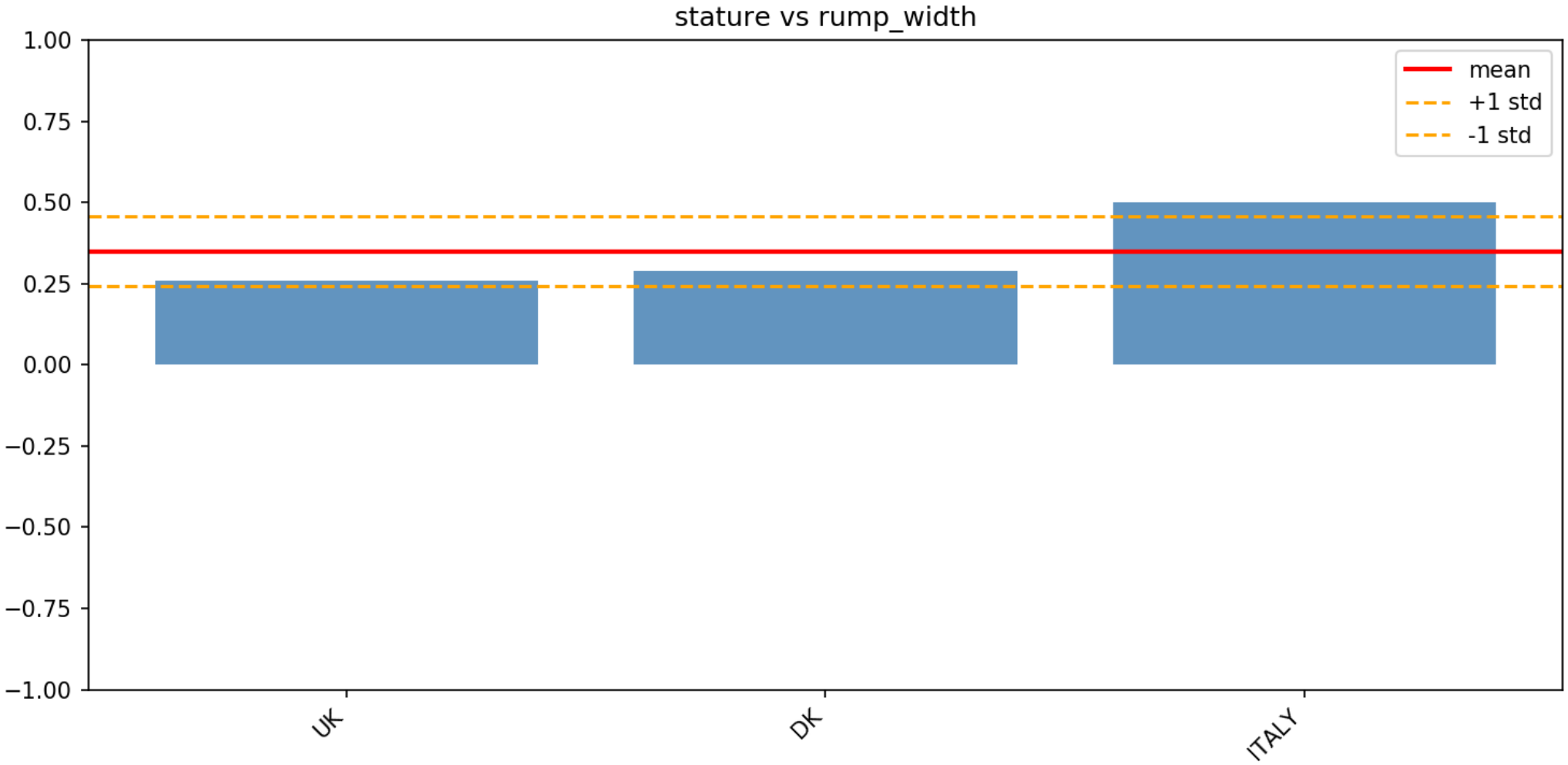

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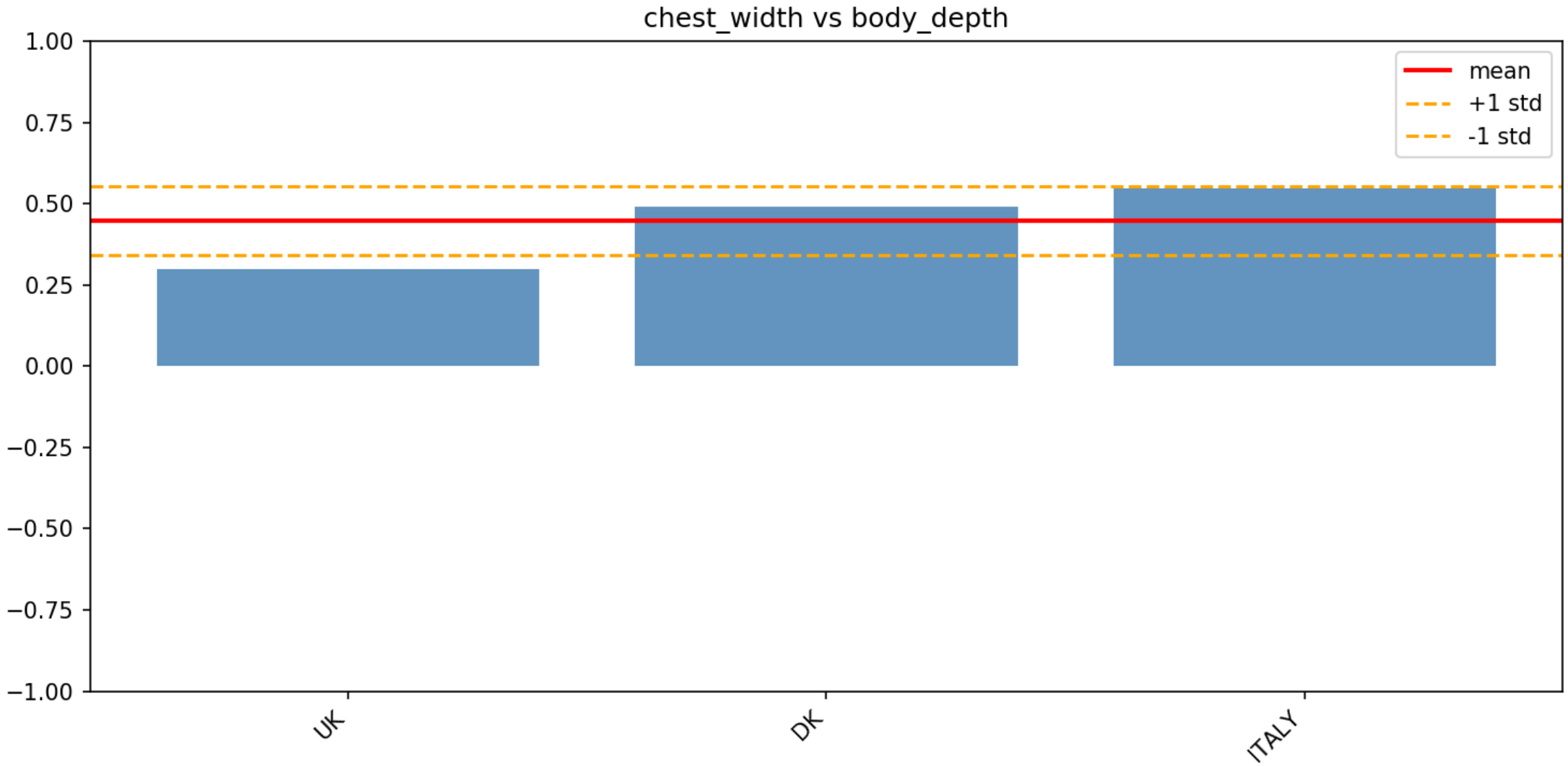

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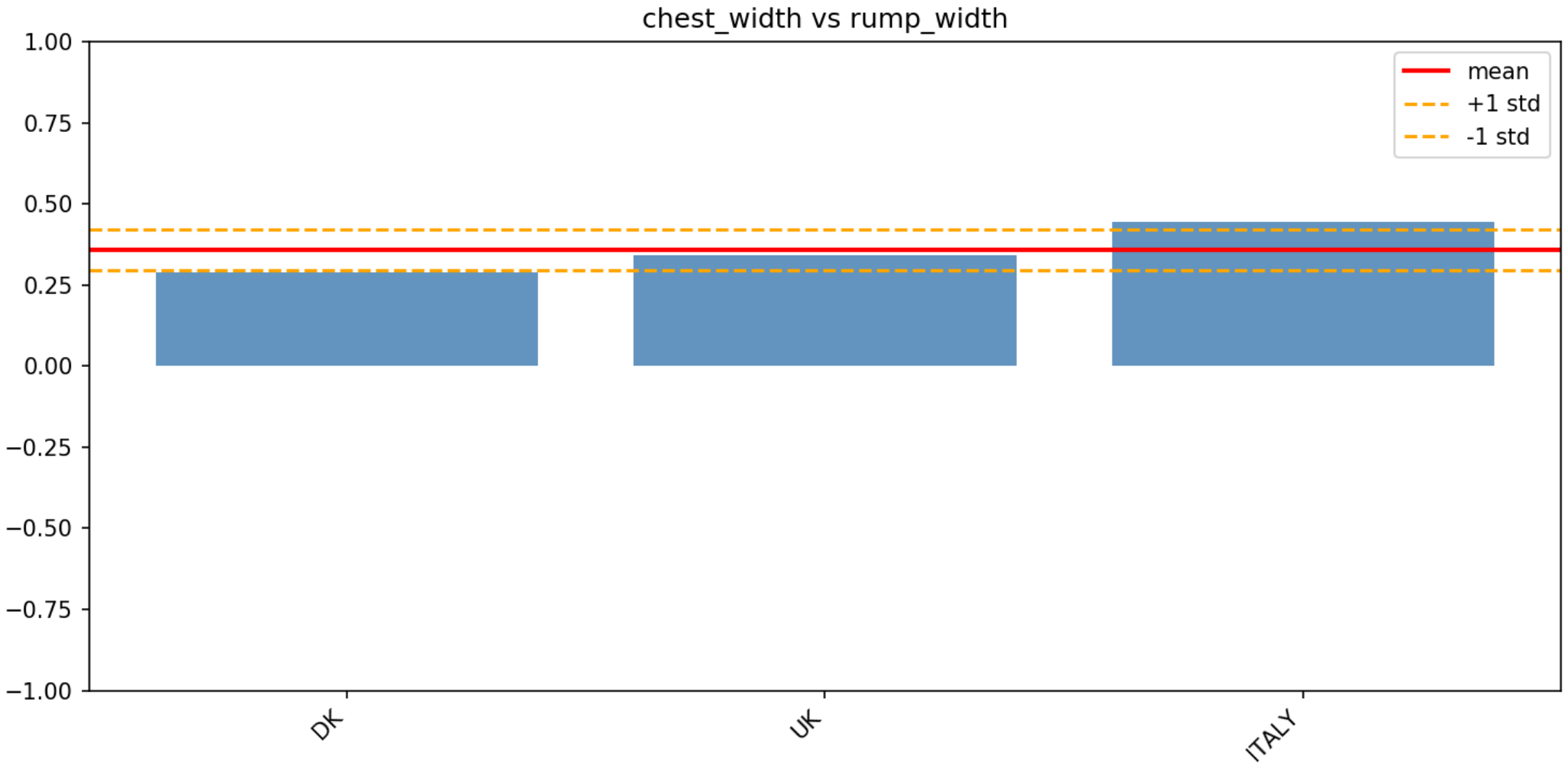

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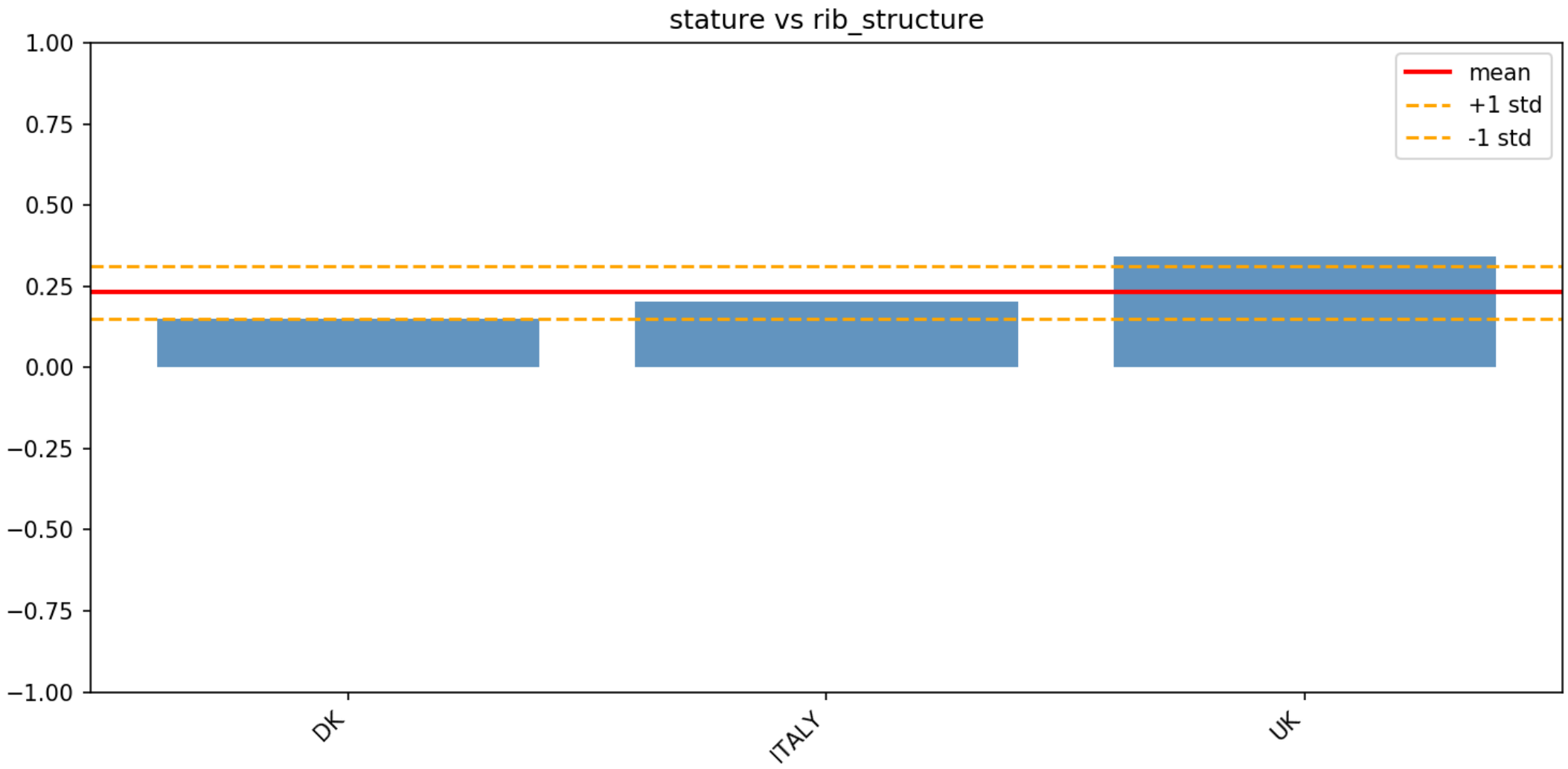

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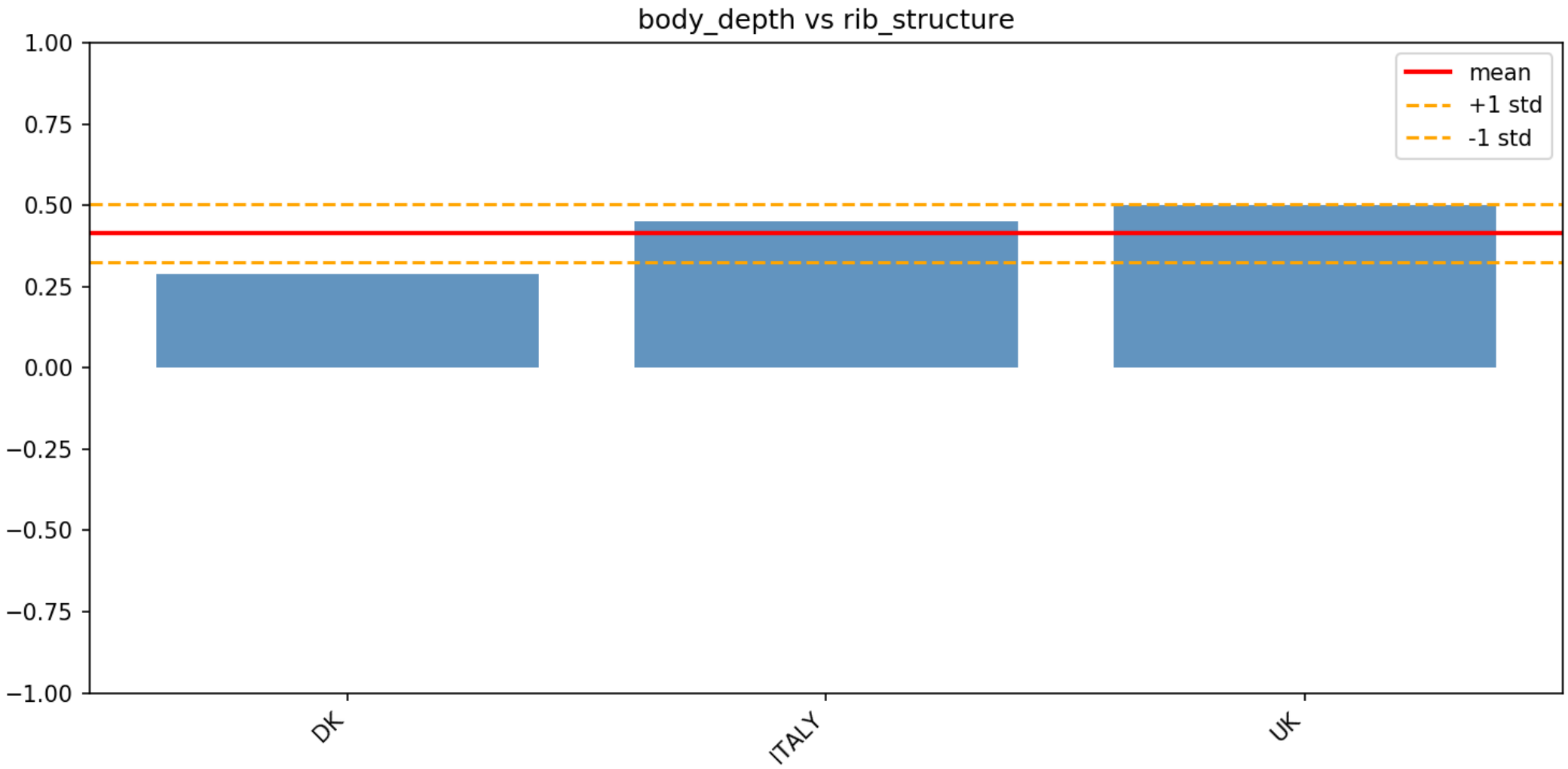

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Mean Correlations

	stature	chest_width	body_depth	rib_structure	rump_angle	rump_width
stature	1	0,3253	0,3643	0,2309	0,1008	0,3496
chest_width		1	0,4461	0,1344	0,0659	0,3582
body_depth			1	0,4135	0,0441	0,3554
rib_structure				1	0,0121	0,2202
rump_angle					1	0,0844
rump_width						1

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Feet & Legs Traits pair correlations

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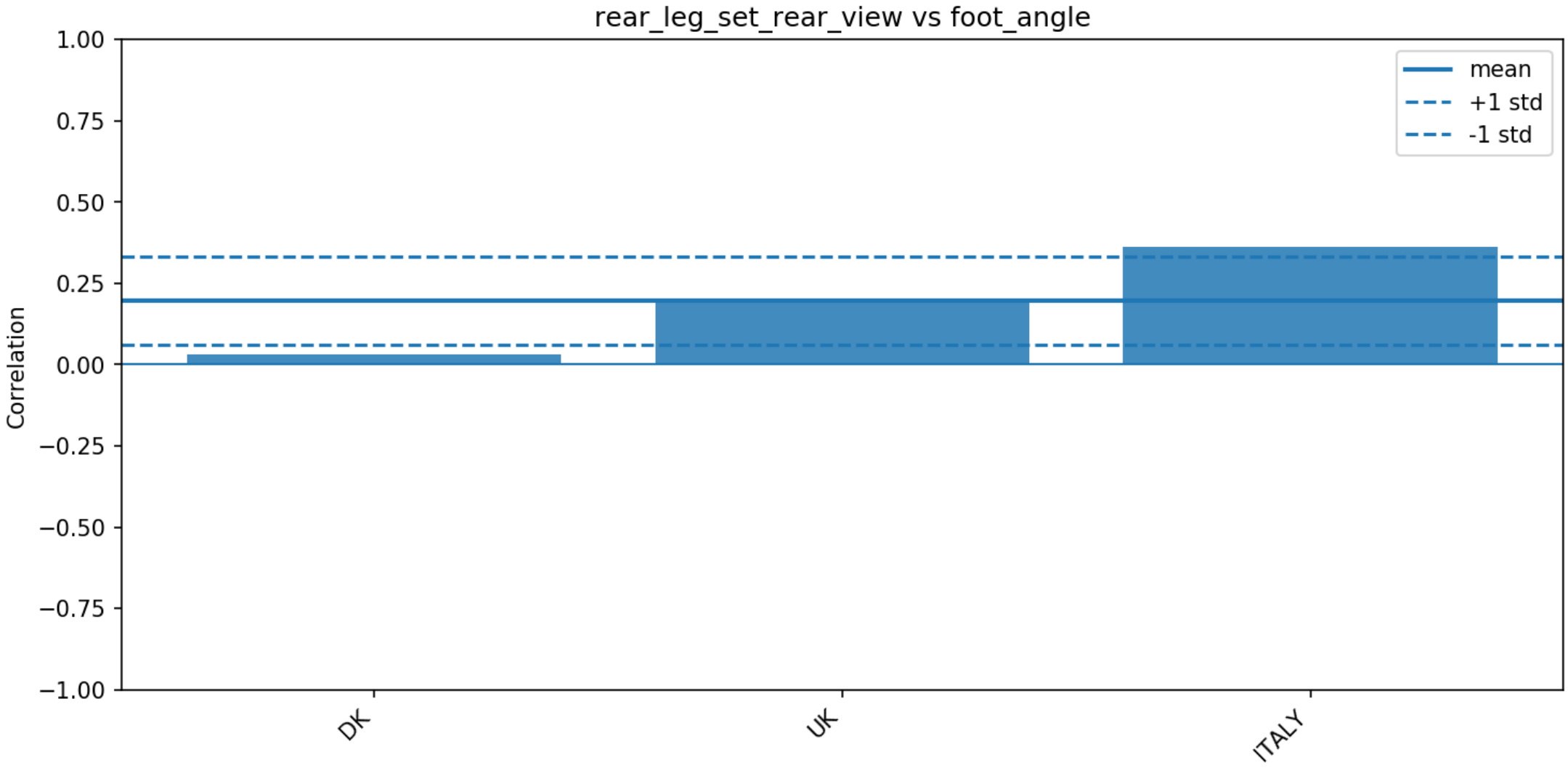

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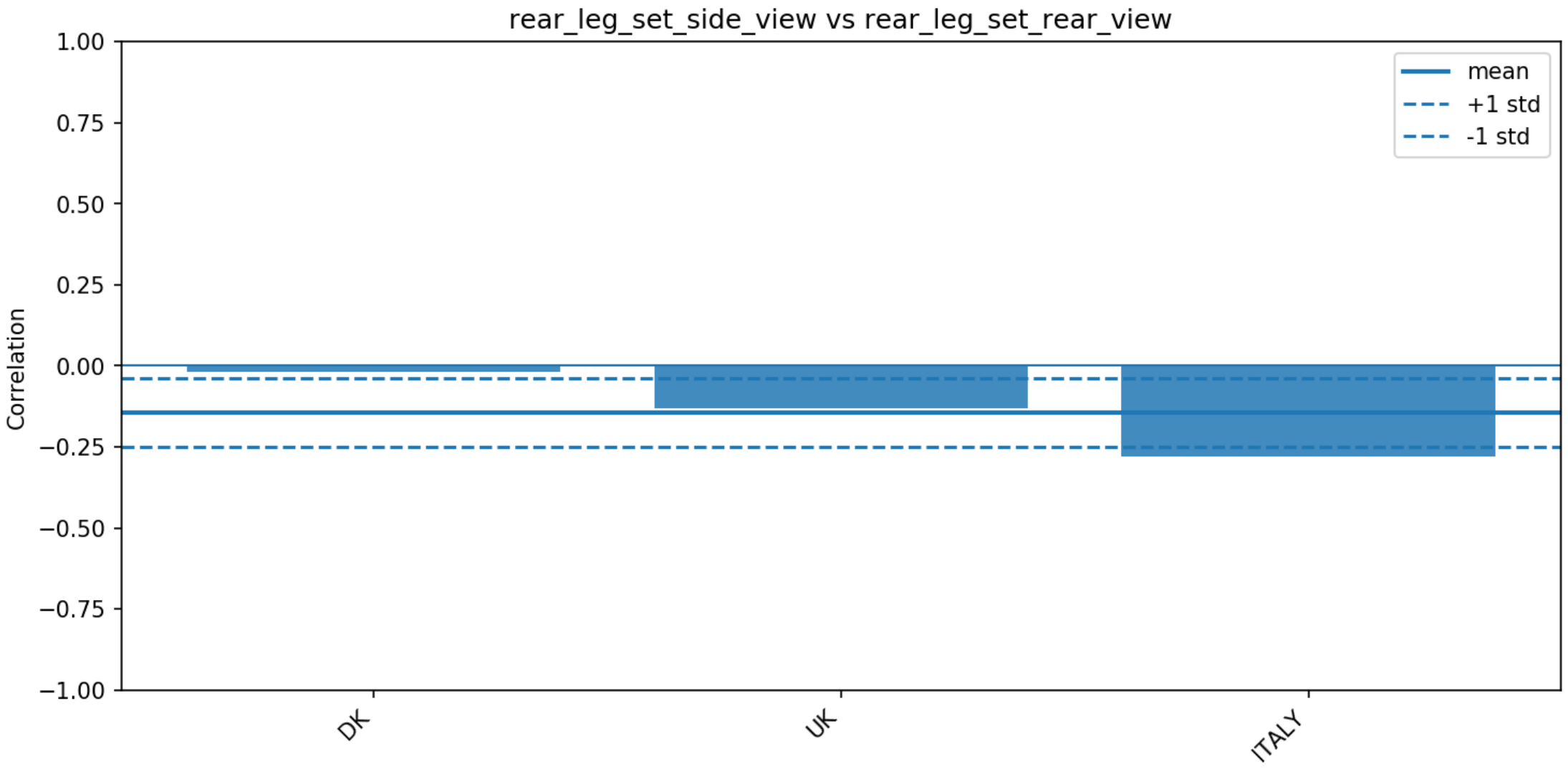

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Mean Correlations

	rear_leg_set_side_view	rear_leg_set_rear_view	foot_angle
rear_leg_set_side_view	1	-0,1428	-0,3111
rear_leg_set_rear_view		1	0,1972
foot_angle			

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Udder traits pair correlations

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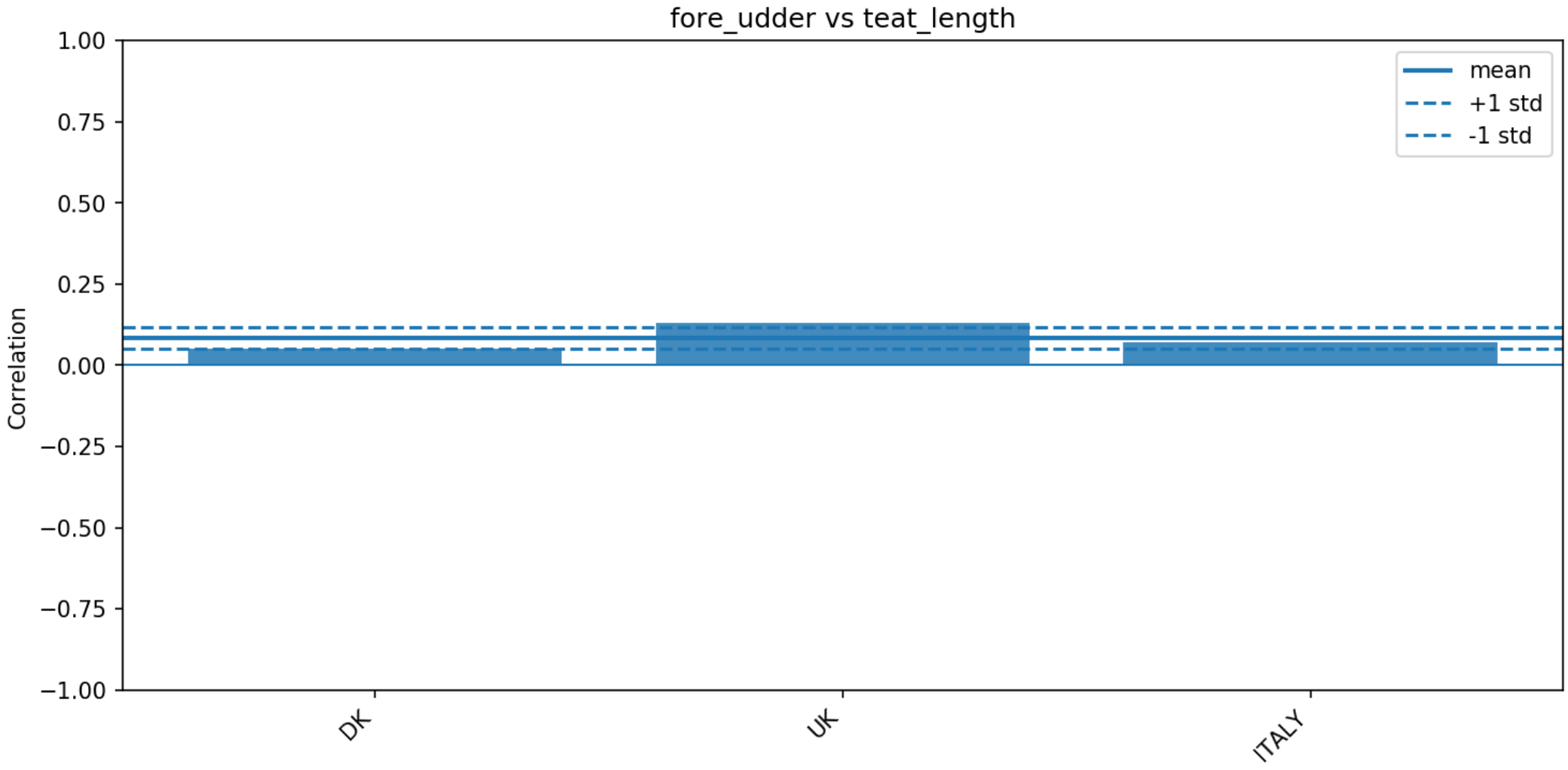

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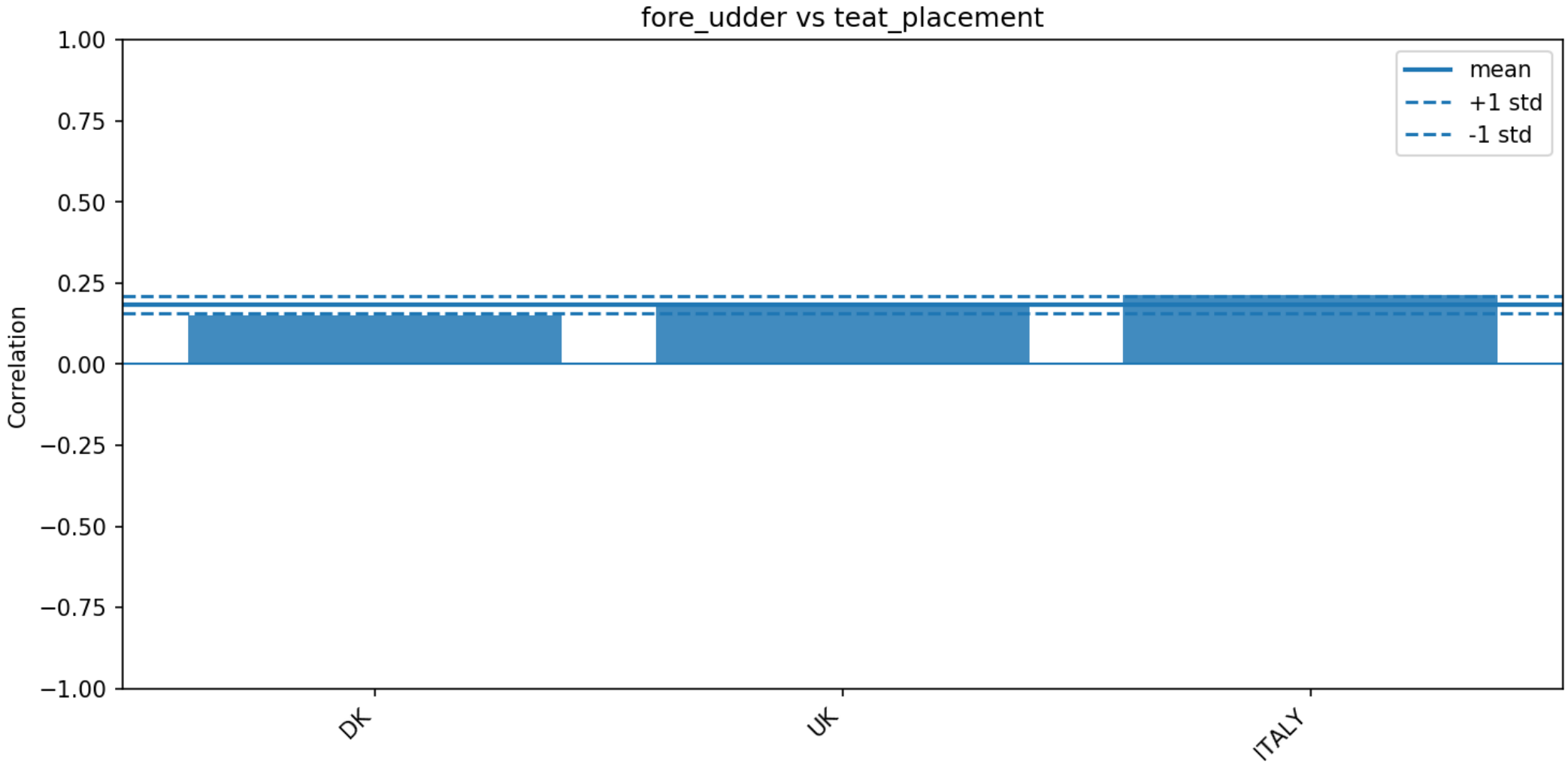

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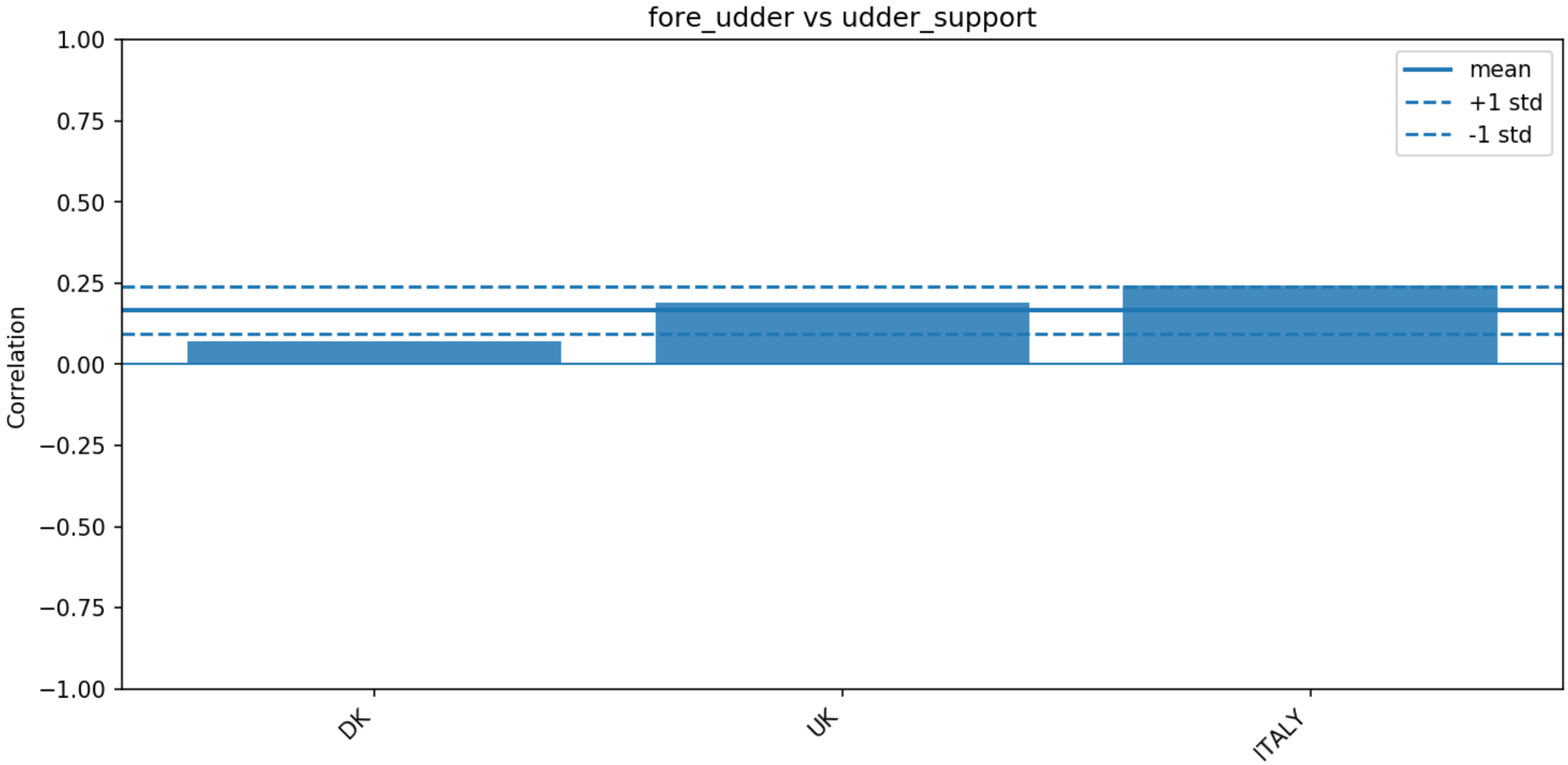

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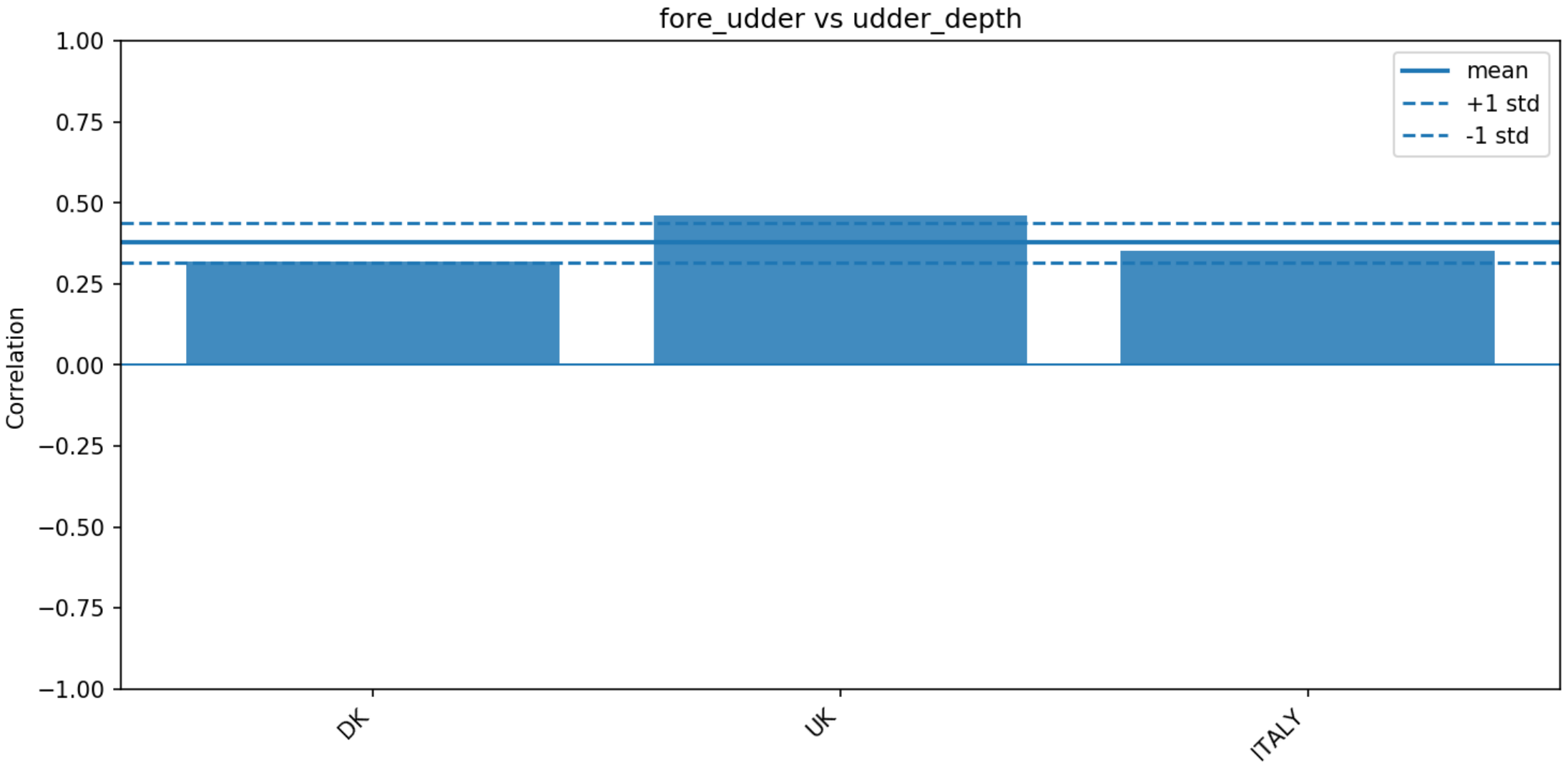

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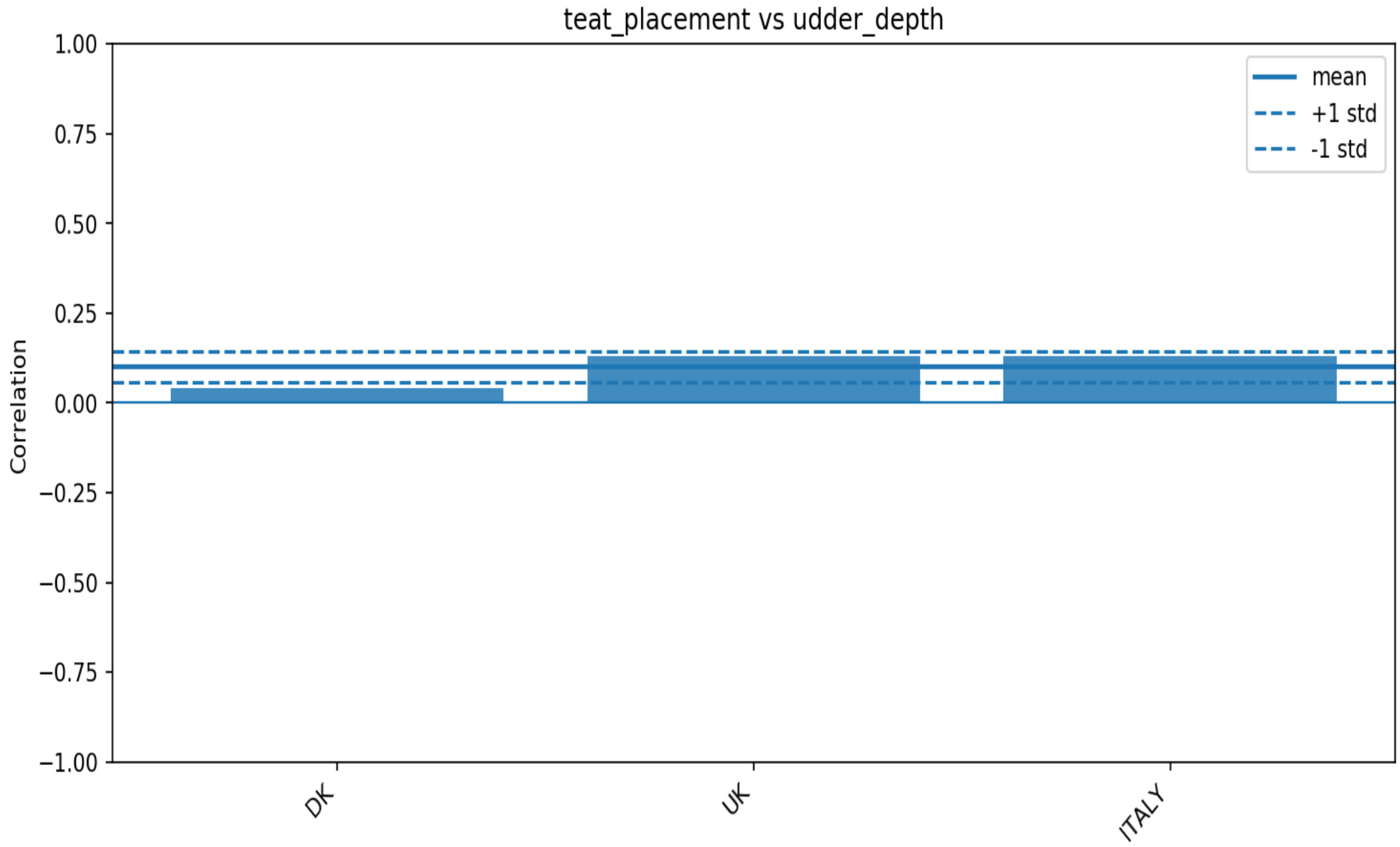

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Mean Correlations

	fore_udder_attachment	front_teat_placement	teat_length	udder_depth	rear_udder_height	central_ligament	rear_teat_placement
fore_udder_attachment	1	0,1847	0,0833	**0,3769**	**0,2458**	0,1676	0,0911
front_teat_placement		1	-0,0393	0,1002	0,1209	0,292	0,474
teat_length			1	0,0199	0,0426	0,0849	**-0,124**
udder_depth				1	**0,1951**	**0,1753**	0,0896
rear_udder_height					1	**0,1999**	0,1468
central_ligament						1	**0,3664**
rear_teat_placement							1

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Conclusions

- Differences in phenotypic correlations can give hints where:
  - countries probably apply in practice different trait
  - Analysis and standardise the linear traits definitions

- Countries finding very different correlations for specific combinations compared to other countries should try to find out what of the involved two traits

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Type WG 2027 Goal

Reach a list of shared linear traits uniform for definition & meaning

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Type WG 2027

- SURVEY and phenotipycal correlation for the EJF Countries





ANAFIBJ R&D department

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Type WG 2027



- 2-days pratcical session next spring (likely end mMarch):
  - Day 1:
    - Morning – theorical meeting for deep discussion in definition and meaning
    - Afternoon – practical session in farm
    - Evening – discussion and networking
  - Day 2:
    - Morning – practical session in farm
    - Afternoon – final consideration and back home



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Jersey Facts in Italy

Anna Fabris

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Anno	Allevamenti	Vacche	Latte Kg	Grasso %	Proteine %	Vacche/Allev.
2016	751	7.009	6.521	4,93	3,94	9
2017	727	6.730	6.514	4,87	3,93	9
2018	725	6.695	6.623	4,93	3,94	9
2019	760	6.859	6.587	4,94	3,93	9
2020	773	6.701	6.794	4,86	3,91	9
2021	776	6.757	7.006	4,94	3,95	9
2022	795	7.025	7.050	4,91	3,92	9
2023	802	6.760	7.089	4,81	3,91	8
2024	840	6.917	7.211	4,89	3,92	8
2025	842	7.013	7.318	4,94	3,92	8

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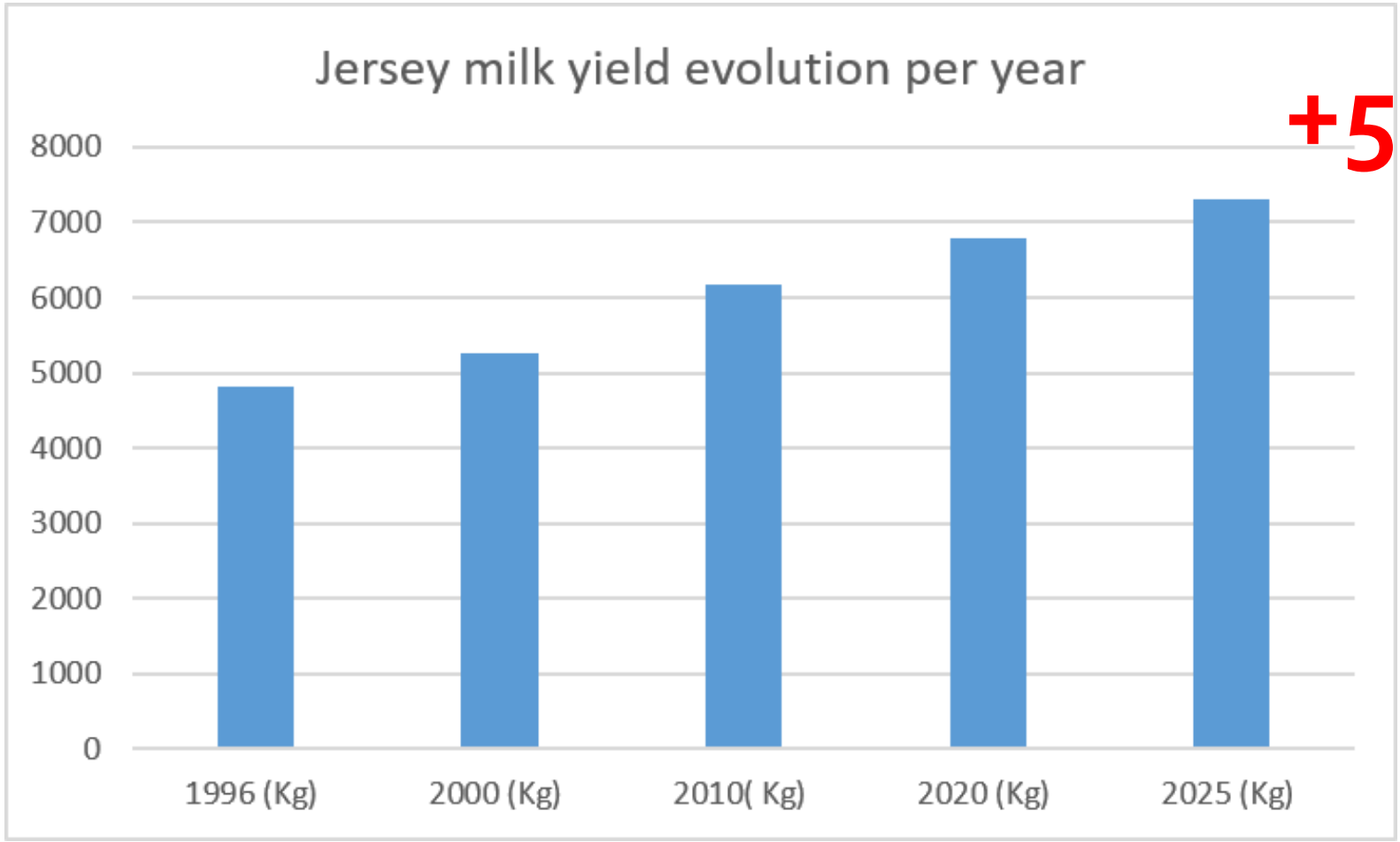

+51%

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Jersey Facts

Longevity	
Age at first calving (months)	26,8
Average number of lactations	3
Lenght of productive life (days)	1069
Average life output (kg milk)	17152,7
Age of culling (years and months)	6 years and 3 months
Number of cows producing 100 000 Kg or more per year	0

Breeding goals and breeding program	
What are the breeding goals for Jersey in your country ? Please describe	IQJ combines milk quality traits (milk and protein) plus three linear traits relative to functional udder
Formula of the Total Merit index in your country ?	IQJ = 1.33 x (-0.03 x milk kg + 2.94 x protein kg + 1.55 x fore attachment strength +1.51 x ligament + 13.06 x udder depth)
Total number of AI with Jersey semen per year ?	9263 all, of which 8096 AI
Dominating breeding strategy : sexed semen / crossbreeding with beef / etc.	no data for sexed; 11% beef semen

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