Fairness of Adapted Assessment Centre Exercises: A Case Study from Turkey

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Fairness & Bias

FAIRNESS

- How would we tell whether a measurement tool is fair for different groups (male/female; socially advantaged/ disadvantaged; ethnic groupings)? (Gibbs & Stobart, 2009).

- Qualities
- Experiences
- Backgrounds

Fairness & Bias

FAIRNESS as a term (SIOP, 2008);

- Equal Group Outcomes
- Equal Treatment of All Examinees
- Having comparable opportunity to learn the subject matter covered by the measurement tool.

Fairness & Bias

- Bias refers to any construct-irrelevant source of variance that results in systematically higher or lower scores for identifiable groups of examinees (SIOP, 2008).

- It is essential that a measurement tool is fair to all applicants, and is not biased against a segment of the applicant population. Bias can result in systematic errors that distort the inferences made in selection and classification (Zumbo, 1999).

Fairness & Bias

- Selection methods should be free from bias, particularly relative to members of legally protected groups (SIOP, 2003)

- Should seek to avoid adverse impact and other negative consequences as far as possible (American Educational Research Association et al., 1999).

A Method to Detect Bias

In pscyhometrics,

Differential Item Functioning (DIF)

- A comparative method, which investigates each item in a test.
- Percentages of examinees who gives correct response in equated groups

A Method to Detect Bias

- DIF requires that members of the two groups be matched on the relevant underlying ability before determining whether members of the two groups differ in their probability for success.

- If the compared groups is not matched, then the possible differences between the groups can not be considered as proof for bias; the source of difference can be «real performance differences».

A Method to Detect Bias

GROUP 1 (FEMALES) n=100	GROUP 2 (MALES) n=100
Item 1	Item 1
Item 2	Item 2
Item 3	Item 3
Item 4	Item 4
Item 5	Item 5
Item 6	Item 6
Item 7	Item 7
Item 8	Item 8
Item 9	Item 9
Item 10	Item 10
OVERALL SCORE	OVERALL SCORE

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Group Equating in Gender Groups

EQUATED GROUPS	OVERALL SCORE
G1 (30 Females, 30 Males)	OVERALL SCORE: 0 – 3
G2 (40 Females, 40 Males)	OVERALL SCORE: 4 – 7
G3 (30 Females, 30 Males)	OVERALL SCORE: 8 – 10

EQUATED GROUPS	Percentage of Examinees who Gives Correct Response to Item 1 in FEMALES	Percentage of Examinees who Gives Correct Response to Item 1 in MALES	Statistical Sig.
G1	% 18	% 16	.376
G2	% 52	% 49	.424
G3	% 76	% 79	.508

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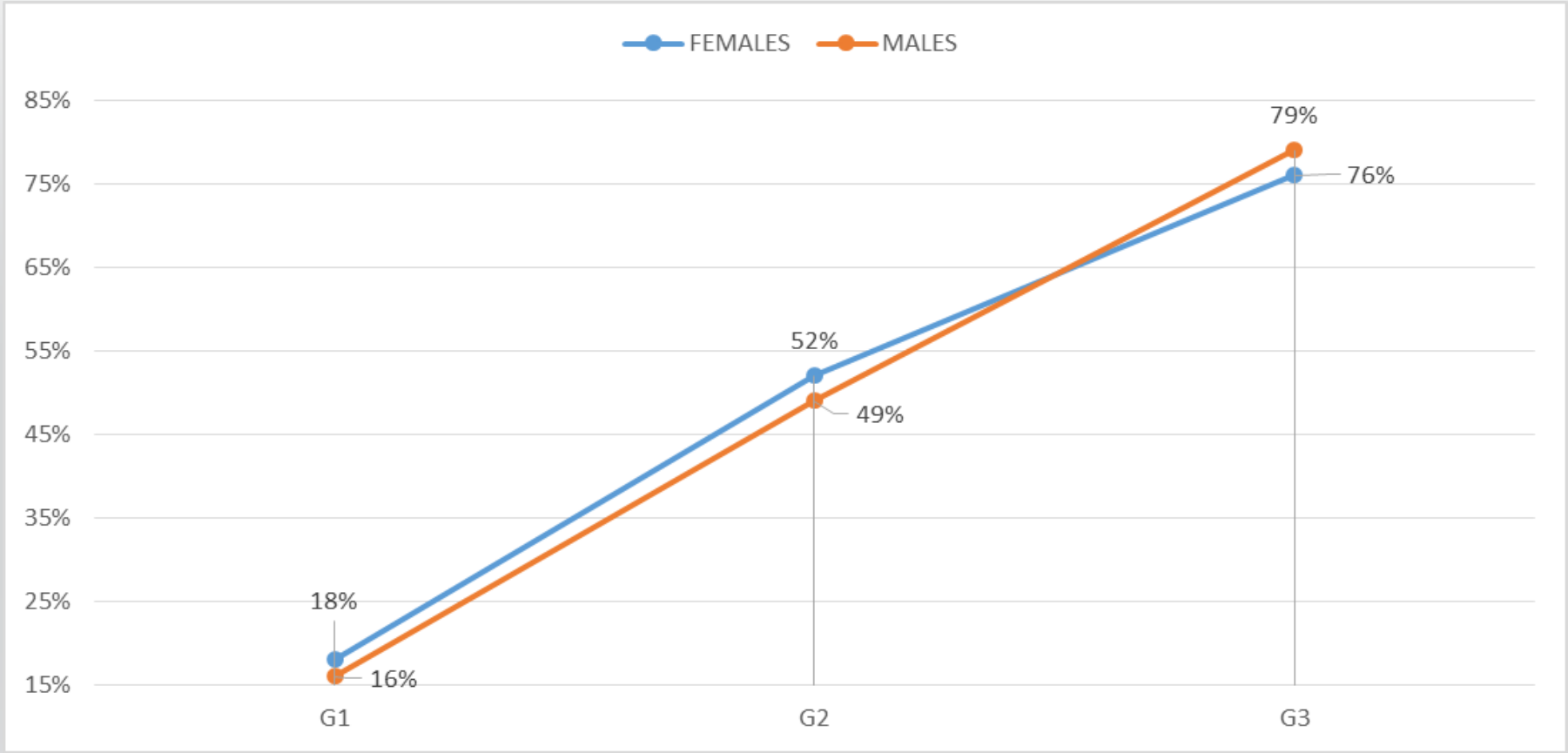
A Method to Detect Bias: ITEM 1



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A Method to Detect Bias

- If there is a statisticially significant difference; it **does not** mean directly that item is biased.
- It means, percentages of people who give correct answer in equated groups is diverse. So this difference **may** arise from item itself.
- Need for Expert Opinion!

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- Thornton & Gibbons (2009); historically, ACs have demonstrated little evidence of systematic bias.

  - A recent meta-analysis (Dean, Roth, & Bobko, 2008) found an average difference between for black and white candidates,

  -Anderson, Lievens, Van Dam, and Born (2006) found higher means for women than men.

Assessment Center

- Especially, adapted Assessment Center Exercises is more open to the effect of cultural diversities and adaptation process itself; risk for bias.

- Prevention:
- Cultural Review (1st stage in adaptation process).
- Expert opinions from psychologists.

Assessment Center Exercises

GROUP 1 (FEMALES)

n=79

Competency 1
Competency 2
Competency 3
Competency 4
Competency 5
Competency 6
Competency 7

OVERALL SCORE

GROUP 2 (MALES)

n=88

Competency 1
Competency 2
Competency 3
Competency 4
Competency 5
Competency 6
Competency 7

OVERALL SCORE

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Case Study: Competencies

Competencies		Group Exercise	Analysis Exercise	Role Playing-I	Role Playing-II
Earning Trust of Customer	Sensitive to Customer Needs	2,5			2,75
	Continue to Communication		2,75	2,5	2,75
Bringing to a Conclusion	Impress and Persuade	2,75		2,5	2,5
	Accomplish the Objective	2,5	2,75	2,25	
Having Mastery on a Subject	Having Expertise on Job		2,75		2,5
	Analysis	2,5	2,5		2,5
	Self Development	2,5	3	2,5	
Having Common Sense	Collaborate	2,5	3		2,75
Leading the Team	Being Model to His/Her Team	2,75		2,25	2,5
	Directing to Target	2,5		2,5	
	Developing His/Her Team		2,75	2,25	

11 Competencies; 7 of 11 measured with Role Playing-I

SUM SCORES

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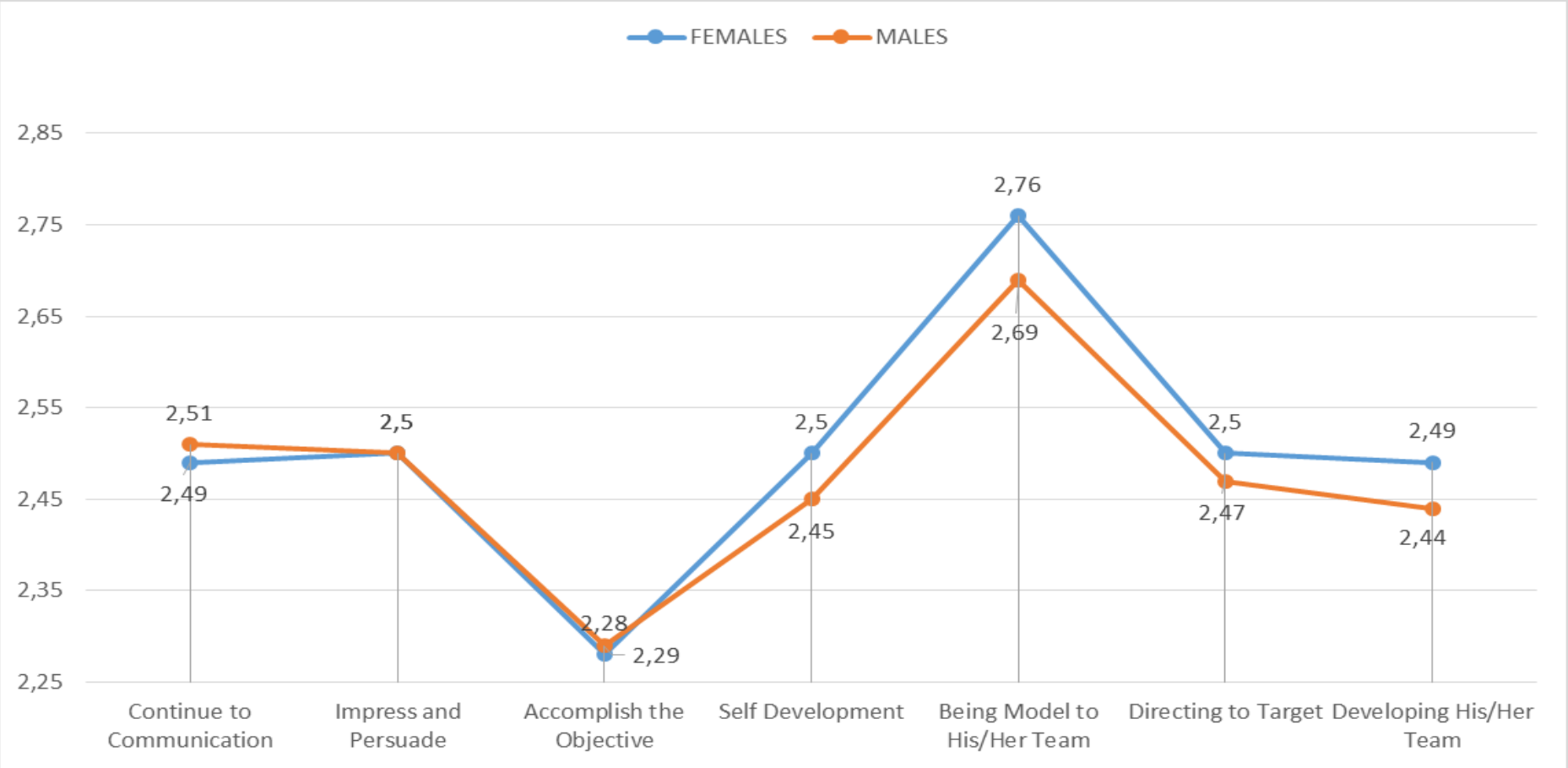
Group Equating in Gender Groups

RANGE of SUM SCORES: 15 - 23

EQUATED GROUPS	OVERALL SCORE
G1 (21 Females, 24 Males)	OVERALL SCORE<17
G2 (38 Females, 42 Males)	17≤OVERALL SCORE<20
G3 (20 Females, 22 Males)	OVERALL SCORE≥20

		FEMALES			MALES		
Competencies		*G1*	*G2*	*G3*	*G1*	*G2*	*G3*
Earning Trust of Customer	Continue to Communication	2,27	2,49	2,74	2,29	2,51	2,71
Bringing to a Conclusion	Impress and Persuade	2,54	2,5	2,51	2,56	2,5	2,49
	Accomplish the Objective	2,24	2,28	2,48	2,24	2,29	2,47
Having Mastery on a Subject	Self Development	2,49	2,5	2,52	2,51	2,45	2,48
Leading the Team	Being Model to His/Her Team	2,74	2,76	2,79	2,76	2,69	2,77
	Directing to Target	2,44	2,5	2,51	2,41	2,47	2,48
	Developing His/Her Team	2,48	2,49	2,55	2,47	2,44	2,56

Role Playing Exercise - Group 1



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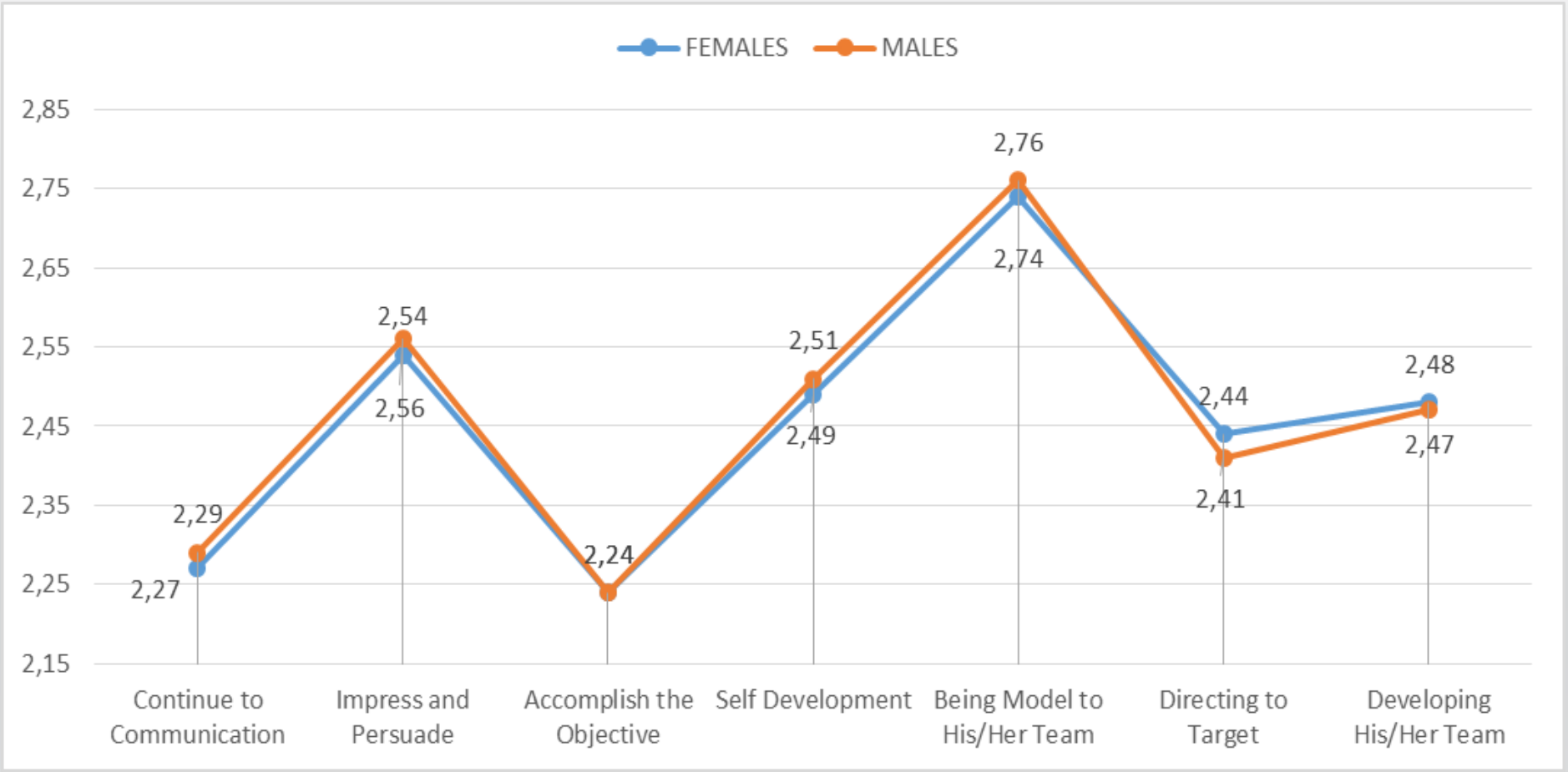
Role Playing Exercise - Group 2



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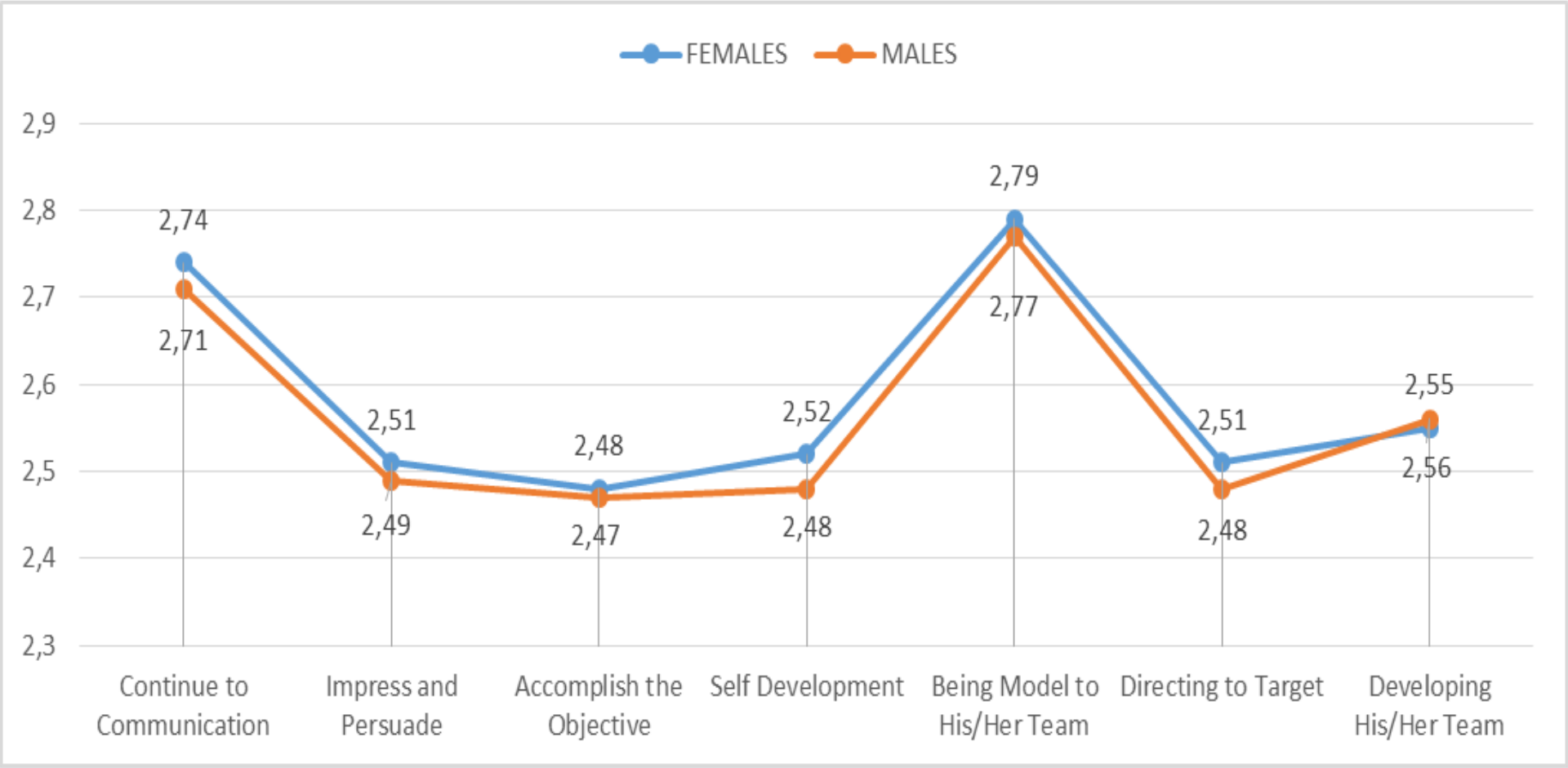
Role Playing Exercise - Group 3



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Role Playing Exercise - Comparison

Competency	FEMALES	MALES	Stat. Sig	FEMALES	MALES	Stat. Sig	FEMALES	MALES	Stat. Sig
	G1			*G2*			*G3*		
Continue to Communication	2,27	2,29	0.133	2,49	2,51	0.150	2,74	2,71	0.121
Impress and Persuade	2,54	2,56	0.141	2,5	2,5	-	2,51	2,49	0.138
Accomplish the Objective	2,24	2,24	-	2,28	2,29	0.316	2,48	2,47	0.151
Self Development	2,49	2,51	0.155	2,5	2,45	0.111	2,52	2,48	0.126
Being Model to His/Her Team	2,74	2,76	0.158	2,76	2,69	0.108	2,79	2,77	0.136
Directing to Target	2,44	2,41	0.140	2,5	2,47	0.136	2,51	2,48	0.126
Developing His/Her Team	2,48	2,47	0.151	2,49	2,44	0.122	2,55	2,56	0.151

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Thank you.

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