Table 1: Directional consistency rates (%) for simulation 1 with four fixing methods (*lavaan*) in the two-factor CFA model

Fixed method	Condition 1						Condition 2					
loading	0.7	0.7	0.7	0.7	0.7	0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
Method 1	100	100	100	100	100	100	0	0	0	0	0	0
Method 2	100	100	100	100	100	100	0	0	0	0	0	0
Method 3	0	0	0	0	0	0	100	100	100	100	100	100
Method 4		100	100		100	100		0	0		0	0

Table 2: Directional consistency rates (%) for simulation 1 with four fixing methods (*lavaan*) in the two-factor CFA model

Fixed method	Condition 3						Condition 4					
loading	-0.7	0.7	0.7	-0.7	0.7	0.7	-0.7	-0.7	0.7	-0.7	-0.7	0.7
Method 1	0	0	0	0	0	0	0	0	0	0	0	0
Method 2	100	100	0	100	100	0	0	0	0	0	0	0
Method 3	0	0	0	0	0	0	100	100	100	100	100	100
Method 4		0	0		0	0		0	0		0	0

Table 3: Directional consistency rates (%) for simulation 1 with four fixing methods (*Mplus*) in the two-factor CFA model

Fixed methods	Condition 1						Condition 2					
loading	0.7	0.7	0.7	0.7	0.7	0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
Method 1	100	100	100	100	100	100	0	0	0	0	0	0
Method 2	100	100	100	100	100	100	0	0	0	0	0	0
Method 3	0	0	0	0	0	0	100	100	100	100	100	100
Method 4		100	100		100	100		0	0		0	0

Table 4: Directional consistency rates (%) for simulation 1 with four fixing methods (*Mplus*) in the two-factor CFA model

Fixed methods	Condition 3						Condition 4					
loading	-0.7	0.7	0.7	-0.7	0.7	0.7	-0.7	-0.7	0.7	-0.7	-0.7	0.7
Method 1	0	0	0	0	0	0	0	0	0	0	0	0
Method 2	0	0	0	0	0	0	0	0	0	0	0	0
Method 3	0	0	0	0	0	0	100	100	100	100	100	100
Method 4		0	0		0	0		0	100		0	100

Table 5: Directional consistency rates (%) for simulation 1 with four fixing methods (*OpenMx*) in the two-factor CFA model

Fixed methods	Condition 1						Condition 2					
loading	0.7	0.7	0.7	0.7	0.7	0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
Method 1	100	100	100	100	100	100	0	0	0	0	0	0
Method 2	100	100	100	100	100	100	0	0	0	0	0	0
Method 3	0	0	0	0	0	0	100	100	100	100	100	100
Method 4		100	100		100	100		0	0		0	0

Table 6: Directional consistency rates (%) for simulation 1 with four fixing methods (*OpenMx*) in the two-factor CFA model

Fixed methods	Condition 3						Condition 4					
loading	-0.7	0.7	0.7	-0.7	0.7	0.7	-0.7	-0.7	0.7	-0.7	-0.7	0.7
Method 1	100	100	100	100	100	100	0	0	0	0	0	0
Method 2	100	100	0	100	100	0	0	0	0	0	0	0
Method 3	0	0	0	0	0	0	100	100	100	100	100	100
Method 4		0	0		0	0		0	0		0	0

Table 7: Directional consistency rates (%) for Solution 1 in the two-factor CFA model

Fixed method	Condition 1						Condition 3					
loading	0.7	0.7	0.7	0.7	0.7	0.7	-0.7	0.7	0.7	-0.7	0.7	0.7
Solution 1 (*lavaan*)	100	100		100	100		100	100		100	100	
Solution 1 (*Mplus*)	100	100		100	100		100	100		100	100	
Solution 1 (*OpenMx*)	100	100		100	100		100	100		100	100	

Table 8: Directional consistency rates (%) for Solution 1 in the two-factor CFA model

Fixed method	Condition 4					
loading	-0.7	-0.7	0.7	-0.7	-0.7	0.7
Solution 1 (*lavaan*)	100	100		100	100	
Solution 1 (*Mplus*)	100	100		100	100	
Solution 1 (*OpenMx*)	100	100		100	100	

Table 9: Directional consistency rates (%) for Solution 2 in the two-factor CFA model

Fixed method	Condition 1						Condition 2					
loading	0.7	0.7	0.7	0.7	0.7	0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
Solution 2 (*OpenMX*)	100	100	100	100	100	100	100	100	100	100	100	100

Table 10: Directional consistency rates (%) for Solution 3 in the two-factor CFA model

Fixed method	Condition 1						Condition 2					
loading	0.7	0.7	0.7	0.7	0.7	0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
Solution 3 (*lavaan*)	100	100	100	100	100	100	100	100	100	100	100	100
Solution 3 (*Mplus*)	100	100	100	100	100	100	100	100	100	100	100	100
Solution 3 (*OpenMX*)	100	100	100	100	100	100	100	100	100	100	100	100

Table 11: Directional consistency rates (%) for Solution 3 in the two-factor CFA model

Fixed method	Condition 3						Condition 4					
loading	-0.7	0.7	0.7	-0.7	0.7	0.7	-0.7	-0.7	0.7	-0.7	-0.7	0.7
Solution 3 (*lavaan*)	100	100	100	100	100	100	100	100	100	100	100	100
Solution 3 (*Mplus*)	100	100	100	100	100	100	100	100	100	100	100	100
Solution 3 (*OpenMX*)	100	100	100	100	100	100	100	100	100	100	100	100

Table 12: Directional consistency rates (%) for simulation 1 with four fixing methods (*lavaan*) in the three-factor CFA model

Fixed method	Condition 1								
loading	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Method 1	100	100	100	100	100	100	100	100	100
Method 2	100	100	100	100	100	100	100	100	100
Method 3	0	0	0	0	0	0	0	0	0
Method 4		100	100		100	100		100	100

Table 13: Directional consistency rates (%) for simulation 1 with four fixing methods (*lavaan*) in the three-factor CFA model

Fixed method	Condition 2								
loading	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
Method 1	0	0	0	0	0	0	0	0	0
Method 2	0	0	0	0	0	0	0	0	0
Method 3	100	100	100	100	100	100	100	100	100
Method 4		0	0		0	0		0	0

Table 14: Directional consistency rates (%) for simulation 1 with four fixing methods (*lavaan*) in the three-factor CFA model

Fixed method	Condition 3								
loading	-0.7	0.7	0.7	-0.7	0.7	0.7	-0.7	0.7	0.7
Method 1	0	0	0	0	0	0	0	0	0
Method 2	100	100	0	100	100	0	100	100	0
Method 3	0	0	0	0	0	0	0	0	0
Method 4		0	0		0	0		0	0

Table 15: Directional consistency rates (%) for simulation 1 with four fixing methods (*lavaan*) in the three-factor CFA model

Fixed method	Condition 4								
loading	-0.7	-0.7	0.7	-0.7	-0.7	0.7	-0.7	-0.7	0.7
Method 1	0	0	0	0	0	0	0	0	0
Method 2	0	0	0	0	0	0	0	0	0
Method 3	100	100	100	100	100	100	100	100	100
Method 4		0	0		0	0		0	0

Table 16: Directional consistency rates (%) for simulation 1 with four fixing methods (*Mplus*) in the three-factor CFA model

Fixed methods	Condition 1								
loading	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Method 1	100	100	100	100	100	100	100	100	100
Method 2	100	100	100	100	100	100	100	100	100
Method 3	0	0	0	0	0	0	0	0	0
Method 4		100	100		100	100		100	100

Table 17: Directional consistency rates (%) for simulation 1 with four fixing methods (*Mplus*) in the three-factor CFA model

Fixed methods	Condition 2								
loading	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
Method 1	0	0	0	0	0	0	0	0	0
Method 2	0	0	0	0	0	0	0	0	0
Method 3	100	100	100	100	100	100	100	100	100
Method 4		0	0		0	0		0	0

Table 18: Directional consistency rates (%) for simulation 1 with four fixing methods (*Mplus*) in the three-factor CFA model

Fixed methods	Condition 3								
loading	-0.7	0.7	0.7	-0.7	0.7	0.7	-0.7	0.7	0.7
Method 1	0	0	0	0	0	0	0	0	0
Method 2	0	0	0	0	0	0	0	0	0
Method 3	0	0	0	0	0	0	0	0	0
Method 4		0	0		0	0		0	0

Table 19: Directional consistency rates (%) for simulation 1 with four fixing methods (*Mplus*) in the three-factor CFA model

Fixed methods	Condition 4								
loading	-0.7	-0.7	0.7	-0.7	-0.7	0.7	-0.7	-0.7	0.7
Method 1	0	0	0	0	0	0	0	0	0
Method 2	0	0	0	0	0	0	0	0	0
Method 3	100	100	100	100	100	100	100	100	100
Method 4		0	100		0	100		0	100

Table 20: Directional consistency rates (%) for simulation 1 with four fixing methods (*OpenMx*) in the three-factor CFA model

Fixed methods	Condition 1								
loading	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Method 1	100	100	100	100	100	100	100	100	100
Method 2	100	100	100	100	100	100	100	100	100
Method 3	0	0	0	0	0	0	0	0	0
Method 4		100	100		100	100		100	100

Table 21: Directional consistency rates (%) for simulation 1 with four fixing methods (*OpenMx*) in the three-factor CFA model

Fixed methods	Condition 2								
loading	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
Method 1	0	0	0	0	0	0	0	0	0
Method 2	0	0	0	0	0	0	0	0	0
Method 3	100	100	100	100	100	100	100	100	100
Method 4		0	0		0	0		0	0

Table 22: Directional consistency rates (%) for simulation 1 with four fixing methods (*OpenMx*) in the three-factor CFA model

Fixed methods	Condition 3								
loading	-0.7	0.7	0.7	-0.7	0.7	0.7	-0.7	0.7	0.7
Method 1	100	100	100	100	100	100	100	100	100
Method 2	100	100	0	100	100	0	100	100	0
Method 3	0	0	0	0	0	0	0	0	0
Method 4		0	0		0	0		0	0

Table 23: Directional consistency rates (%) for simulation 1 with four fixing methods (*OpenMx*) in the three-factor CFA model

Fixed methods	Condition 4								
loading	-0.7	-0.7	0.7	-0.7	-0.7	0.7	-0.7	-0.7	0.7
Method 1	0	0	0	0	0	0	0	0	0
Method 2	0	0	0	0	0	0	0	0	0
Method 3	100	100	100	100	100	100	100	100	100
Method 4	0	0		0	0		0	0	

Table 24: Directional consistency rates (%) for Solution 1 in the three-factor CFA model

Fixed method	Condition 1								
loading	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Solution 1 (*lavaan*)	100	100		100	100		100	100	
Solution 1 (*Mplus*)	100	100		100	100		100	100	
Solution 1 (*OpenMx*)	100	100		100	100		100	100	

Table 25: Directional consistency rates (%) for Solution 1 in the three-factor CFA model

Fixed method	Condition 3								
loading	-0.7	0.7	0.7	-0.7	0.7	0.7	-0.7	0.7	0.7
Solution 1 (*lavaan*)	100	100		100	100		100	100	
Solution 1 (*Mplus*)	100	100		100	100		100	100	
Solution 1 (*OpenMx*)	100	100		100	100		100	100	

Table 26: Directional consistency rates (%) for Solution 1 in the three-factor CFA model

Fixed method	Condition 4								
loading	-0.7	-0.7	0.7	-0.7	-0.7	0.7	-0.7	-0.7	0.7
Solution 1 (*lavaan*)	100	100		100	100		100	100	
Solution 1 (*Mplus*)	100	100		100	100		100	100	
Solution 1 (*OpenMx*)	100	100		100	100		100	100	

Table 27: Directional consistency rates (%) for Solution 2 in the three-factor CFA model

Fixed method	Condition 1								
loading	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Solution 2 (*OpenMX*)	100	100	100	100	100	100	100	100	100

Table 28: Directional consistency rates (%) for Solution 2 in the three-factor CFA model

Fixed method	Condition 2								
loading	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
Solution 2 (*OpenMX*)	100	100	100	100	100	100	100	100	100

Table 29: Directional consistency rates (%) for Solution 3 in the three-factor CFA model

Fixed method	Condition 1								
loading	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Solution 3 (*lavaan*)	100	100	100	100	100	100	100	100	100
Solution 3 (*Mplus*)	100	100	100	100	100	100	100	100	100
Solution 3 (*OpenMX*)	100	100	100	100	100	100	100	100	100

Table 30: Directional consistency rates (%) for Solution 3 in the three-factor CFA model

Fixed method	Condition 2								
loading	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
Solution 3 (*lavaan*)	100	100	100	100	100	100	100	100	100
Solution 3 (*Mplus*)	100	100	100	100	100	100	100	100	100
Solution 3 (*OpenMX*)	100	100	100	100	100	100	100	100	100

Table 31: Directional consistency rates (%) for Solution 3 in the three-factor CFA model

Fixed method	Condition 3								
loading	-0.7	0.7	0.7	-0.7	0.7	0.7	-0.7	0.7	0.7
Solution 3 (*lavaan*)	100	100	100	100	100	100	100	100	100
Solution 3 (*Mplus*)	100	100	100	100	100	100	100	100	100
Solution 3 (*OpenMX*)	100	100	100	100	100	100	100	100	100

Table 32: Directional consistency rates (%) for Solution 3 in the three-factor CFA model

Fixed method loading	Condition 4								
	-0.7	-0.7	0.7	-0.7	-0.7	0.7	-0.7	-0.7	0.7
Solution 3 (*lavaan*)	100	100	100	100	100	100	100	100	100
Solution 3 (*Mplus*)	100	100	100	100	100	100	100	100	100
Solution 3 (*OpenMX*)	100	100	100	100	100	100	100	100	100