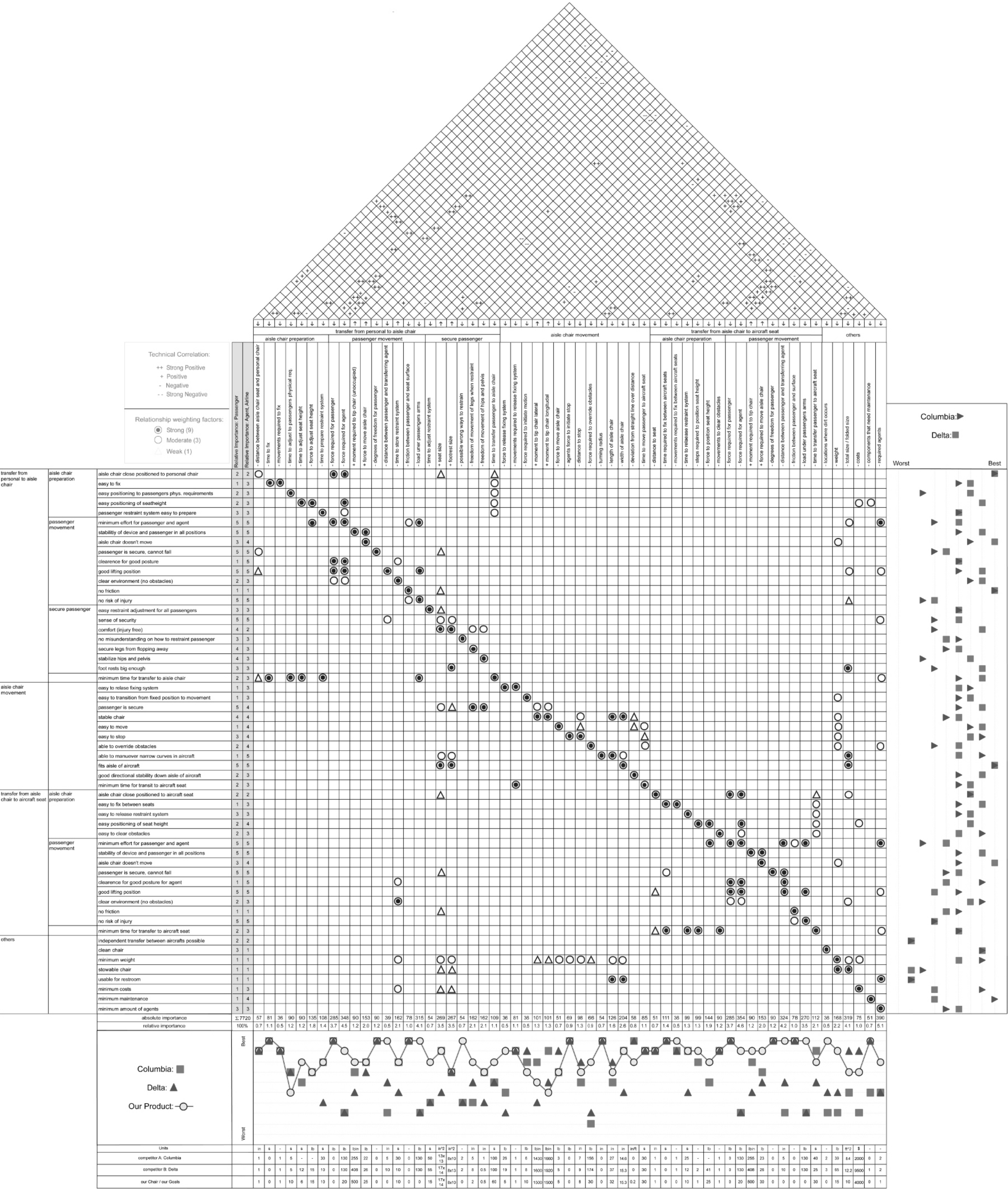

Category	Subcategory	Customer requirement	Relative Importance: Passenger	Relative Importance: Agent, Airline
transfer from personal to aisle chair	aisle chair preparation	aisle chair close positioned to personal chair	2	2
		easy to fix	1	3
		easy positioning to passengers phys. requirements	2	3
		easy positioning of seatheight	2	3
		passenger restraint system easy to prepare	3	3
	passenger movement	minimum effort for passenger and agent	5	5
		stabilitiy of device and passenger in all positions	5	5
		aisle chair doesn't move	3	4
		passenger is secure, cannot fall	5	5
		clearence for good posture	1	5
		good lifting position	5	5
		clear environment (no obstacles)	2	3
		no friction	1	1
		no risk of injury	5	5
	secure passenger	easy restraint adjustment for all passengers	3	3
		sense of security	5	5
		comfort (injury free)	4	2
		no misunderstanding on how to restraint passenger	3	3
		secure legs from flopping away	4	3
		stabilize hips and pelvis	4	3
		foot rests big enough	3	3
		minimum time for transfer to aisle chair	2	3
aisle chair movement		easy to relase fixing system	1	3
		easy to transition from fixed position to movement	1	3
		passenger is secure	5	4
		stable chair	4	4
		easy to move	1	4
		easy to stop	3	4
		able to override obstacles	2	4
		able to manuever narrow curves in aircraft	1	5
		fits aisle of aircraft	5	5
		good directional stability down aisle of aircraft	2	3
		minimum time for transit to aircraft seat	2	3
transfer from aisle chair to aircraft seat	aisle chair preparation	aisle chair close positioned to aircraft seat	2	2
		easy to fix between seats	1	3
		easy to release restraint system	3	3
		easy positioning of seat height	2	4
		easy to clear obstacles	2	3
	passenger movement	minimum effort for passenger and agent	5	5
		stability of device and passenger in all positions	5	5
		aisle chair doesn't move	3	4
		passenger is secure, cannot fall	5	5
		clearence for good posture for agent	1	5
		good lifting position	5	5
		clear environment (no obstacles)	2	3
		no friction	1	1
		no risk of injury	5	5
		minimum time for transfer to aircraft seat	2	3
others		independent transfer between aircrafts possible	2	2
		clean chair	3	1
		minimum weight	1	1
		stowable chair	1	1
		usable for restroom	1	1
		minimum costs	1	3
		minimum maintenance	1	4
		minimum amount of agents	3	3

Technical characteristic	absolute importance	relative importance	Units	competitor A: Columbia	competitor B: Delta	our Chair / our Goals
(total)	Σ7720	100%				
- distance between aisle chair seat and personal chair	57	0.7	in	1	1	1
- time to fix	81	1.1	s	0	0	0
- movements required to fix	36	0.5	-	1	1	1
- time to adjust to passengers physical req.	90	1.2	s	5	5	10
- time to adjust seat height	90	1.2	s	-	12	6
- force to adjust seat height	135	1.8	lb	-	15	15
- time to prepare restraint system	108	1.4	s	30	10	10
- force required for passenger	285	3.7	lb	0	0	0
- force required for agent	348	4.5	lb	130	130	20
+ moment required to tip chair (unoccupied)	90	1.2	lbin	255	408	500
+ force to move aisle chair	153	2.0	lb	22	26	25
- degrees of freedom for passenger	90	1.2	-	0	0	0
- distance between passenger and transferring agent	39	0.5	in	5	10	0
- time to store restraint system	162	2.1	s	30	10	10
- friction between passenger and seat surface	78	1.0	-	0	0	0
- load uner passengers arms	315	4.1	lb	130	130	0
- time to adjust restraint system	54	0.7	s	50	55	15
+ seat size	269	3.5	in^2	13x13	17x14	17x14
+ footrest size	267	3.5	in^2	8x10	8x13	8x10
- possible wrong ways to restrain	54	0.7	-	2	2	0
- freedom of movement of legs when restraint	162	2.1	in	5	8	2
- freedom of movement of hips and pelvis	162	2.1	in	1	0.5	0.5
- time to transfer passenger to aisle chair	109	1.1	s	100	100	60
- force to release fixing system	36	0.5	lb	26	19	5
- movements required to release fixing system	81	1.1	-	1	1	1
- force required to initiate motion	36	0.5	lb	6	8	10
+ moment to tip chair lateral	101	1.3	lbin	1430	1600	1500
+ moment to tip chair longitudal	101	1.3	lbin	1660	1920	1500
- force to move aisle chair	51	0.7	lb	3	5	5
- agents force to initiate stop	69	0.9	lb	0	0	0
- distance to stop	98	1.3	in	7	9	8
- force required to override obstacles	66	0.9	lb	156	174	30
- turning radius	54	0.7	in	0	0	0
- length of aisle chair	126	1.6	in	27	37	32
- width of aisle chair	204	2.6	in	14.6	15.3	15.3
- deviation from straight line over distance	58	0.8	in/ft	0	0	0.2
- time to move passenger to aircraft seat	85	1.1	s	30	30	30
- distance to seat	51	0.7	in	1	1	1
- time required to fix between aircraft seats	111	1.4	s	0	0	0
- movements required to fix between aircraft seats	36	0.5	-	1	1	0
- time to relaease restraint system	99	1.3	s	25	12	10
- steps required to position seat height	99	1.3	-	-	2	1
- force to position seat height	144	1.9	lb	-	41	25
- movements to clear obstacles	90	1.2	-	1	1	1
- force required for passenger	285	3.7	lb	0	0	0
- force required for agent	354	4.6	lb	130	130	20
+ moment required to tip chair	90	1.2	lbin	255	408	500
+ force required to move aisle chair	153	2.0	lb	23	26	30
- degrees of freedom for passenger	90	1.2	-	0	0	0
- distance between passenger and transferring agent	324	4.2	in	5	10	0
- friction between passenger and surface	78	1.0	-	0	0	0
- load under passengers arms	270	3.5	lb	130	130	0
- time to transfer passenger to aircraft seat	112	2.1	s	40	25	30
- locations where dirt occurs	36	0.5	-	2	3	0
- weight	168	2.2	lb	39	65	15
- total size / folded size	319	4.1	ft^2	8.4	12.2	10
- costs	75	1.0	$	2000	9500	4000
- components that need maintenance	51	0.7	-	0	1	0
- required agents	390	5.1	-	2	2	1