

Gender-based discrimination in the configuration of restrooms at major airports in the United States of America, South Africa and China

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Abstract

Quite often, long queues can be observed at restrooms allocated to females at airports. Queuing is generally experienced negatively. At the same time, queues are seldom observed at the restrooms allocated to males. This amounts to unequal treatment. If unequal treatment is perceived to be unfair, this leads to negative emotions and mental health outcomes. In this research the configuration of toilets in restrooms was studied as it was hypothesized that the configurations may be instrumental to the observed gender-specified lengths of the queues. Four side-by-side restrooms were visited at six large international airports, two per country. Not one of the 24 restrooms designed for female use had an equal number of toilets to the 24 restrooms designated for males. Females were afforded fewer restroom facilities than males. This tendency was observed at airports in South Africa and China, and to a lesser extent in the United States of America. It is recommended that those who design restrooms for airports should be informed that the current configuration of restrooms results in gender-based discrimination. More, or alternative, restroom facilities need to be provided to females to minimize this effect. Redesigning restrooms should be done with cognizance of the gender-specific requirements of restroom users.

Keywords: Airports, restrooms, bathrooms, toilets, discrimination



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Introduction

Although access to restroom at airports are important to travellers (Bogicevic, Yang, Bilgihan & Bujisic 2013; Eboli & Mazzulla 2009; Mattozo, Silva, Costa & Fernandes Neto 2012), long queues at restrooms allocated to females at airports are often observed. The same queues are not found at restrooms allocated to males. This could be perceived as gender-based discrimination, which could be defined as giving the members of one gender either an unfair advantage or disadvantaging them in comparison with the members of the other group (Channar, Abbassi & Ujan 2011). It implies prejudicial treatment of an individual or group on the grounds of gender (Parziale 2007).

Even irrespective of the objective facts of disadvantageous treatment, perceptions of unfair discrimination have negative effects on, among other things, the mental well-being of such individuals (Klonoff, Landrin & Campbell 2000; Schmitt, Branscombe, Kobryniewicz & Owen 2002). One of the symptoms experienced as a result of perceived discrimination is reduced self-esteem (Schmitt, Branscombe & Postmes 2003). With specific reference to gender-based discrimination, Pavalko, Mossakowski and Hamilton (2003) state that exclusion from important arenas reduces women's self-esteem far more than that of men. Self-esteem is very central to general well-being and can be defined as the individual's general attitude towards him or herself (Baron, Branscombe & Byrne 2009). Other symptoms experienced by those discriminated against include feelings of hopelessness and depression (Brown & Siegal 1988).

Following a meta-analysis of this matter, Pascoe and Richman (2009: 351) conclude that "perceived discrimination has a significant negative effect on both mental

and physical health. Perceived discrimination also produces significantly heightened stress responses..."

Waiting in queues to access bathroom facilities also affects the general health of individuals. Health complaints such as incontinence, distended bladders and urinary infections are also associated with delayed access to toilet facilities (Greed 2009; Gershenson & Penner 2009). This would be of greater concern to women, as they often find themselves having to wait in queues to access bathroom facilities.

Airport authorities can ill afford the abovementioned reactions and an investigation into the matter of unfair distribution of restroom facilities seems necessary. Those in charge of airports should also consider that "buildings give materiality to the behavior that we consider orderly and, ultimately, enforce this order" (Schweder 2009:182). Airport authorities need to ask themselves whether they really want to be portrayed as enforcers of discrimination against women. This article investigates the extent of gender parity as far as the distribution of restroom facilities at airports are concerned.

Gender parity in the allocation of restroom facilities

What does gender parity in the allocation of restroom facilities entail? Three measures are suggested, namely: equal square footage, an equal number of toilets, or equal waiting time (Anthony & Dufresne 2009). When equal square footage is allocated to restrooms per gender, the likelihood of an unequal solution is high, as toilets which feature only in female restrooms take up more space than urinals, which are only found in male restrooms. Foregoing square footage would seem to suggest that proposing an equal number of toilets or toilets plus urinals per gender group would

be a bias-free solution, but such a solution is also flawed. In this regard, Gershenson and Penner (2009) argue that, due to women's toilet needs and uses, distributing toilets equally between men's and women's rooms actually produces an unequal result. It is thus suggested that an equal waiting time would most likely be the most just measure of a fair distribution.

Gershenson and Penner's (2009) argument above is substantiated by the fact that females spend significantly more time in restrooms than males (Males - Mean time = 178.9 sec., SD = 96.6; Females - Mean time = 118.4 sec., SD = 102.6; $t(118) = -3.33$, $p = .001$; $d = .34$; Baillie, Fraser, & Brown 2009). This difference is partly due to the fact that females practice better hygiene than males and wash their hands more often than men do when visiting restrooms (Edwards, Monk-Turner, Poorman, Rushing, Warren & Willie 2002; Johnson, Sholcosky, Gabello, Ragni & Ogonosky 2003) and are more likely to use soap and dry their hands (Garbutt, Simmons, Patrick & Miller 2007). These activities take up time additional time.

In this paper it would be argued that at least equal numbers of facilities should be allocated to females as to males. This is the second measure as suggested by Anthony and Dufresne (2009). This is done with cognisance of Gershenson and Penner's (2009) argument that such a solution will most likely still constitute gender-based discrimination. If any disparities are therefore found using this (flawed) measure, it will provide clear evidence of discrimination.

An argument against providing similar numbers of restroom facilities for females and males may be that there are fewer female passengers at airports. Van Herck, Castelli, Zuckerman, Nothdurft, Van Damme and Dahlgren (2004) found in a convenient sample from several European airports that

49.6% of travellers were women and 50.4% men (N=5 465). Similar results were found by Thanasupsin, Chaichana and Pliankarom (2010) in the East (Thailand) with 50.6% female and 49.4% male users (N=2000). Basing an argument against providing similar numbers of restroom facilities for females and males on the assumption of significant gender differences in air transport users is not supported by the aforementioned reports.

Methodology

The research design was a cross sectional study which was observational in nature and known as descriptive research, not causal or relational. The researcher recorded the information that was present in a population, but did not in any way manipulate variables. This type of research can be used to describe characteristics that may exist in a population, but does not determine cause-and-effect relationships between different variables. Such a methodology is often used to make inferences about possible relationships or to gather preliminary data to support further research and experimentation. Consequently, data on the availability restroom facilities were collected at two airports per country. In the United States of America, two major airports were visited, namely the Hartsfield Atlanta International Airport (ATL) near Atlanta and the John F Kennedy Airport (JFK) near New York. In China, the Beijing Capital International Airport (PEK) near Beijing and the Pudong International Airport (PVG) near Shanghai were visited. In South Africa, the O.R. Tambo International Airport (JHB) near Johannesburg and the Cape Town International Airport (CPT) near Cape Town were visited. These airports were selected as they are major international airports in their respective countries.

At each airport four restrooms provided to males and four restrooms provided to

females were visited. Thus, in total eight restrooms per airport were visited. In an attempt to find similar restrooms, only restrooms with side-by-side entrances for males and females were included in the study. In most cases, restrooms are presented in such a manner at airports.

The researcher (male) and an assistant (female) inspected the restrooms allocated to males and females. In each pair of restrooms, the number of toilets and urinals were counted. The sum of the toilets and urinals was considered as the extent of services rendered.

The following calculations were performed. For each airport and country, the number of facilities (toilets and urinals) per gender was tabulated. Then the percentage of facilities allocated to females, per country, were calculated (number of facilities provided to females / total number of facilities). Following this, an Anova was performed to

test whether the number of facilities provided differed statistically along gender lines per airport. Differences were deemed statistically significant when $p < .05$. This value is commonly used in social sciences (Rosenthal, Rosnow & Rubin 2009). Practical significance was calculated and presented as the Cohen d-value. This value presents difference between (two) groups as a fraction of the pooled standard deviation (Pallant 2010; Rosenthal, Rosnow & Rubin 2009). When d is larger than .8 the difference is interpreted as practically significant. With d-values between .8 and .5 the effect size is moderate, while a d-statistic between .5 and .2 indicate a small effect (Cohen 1988; Steyn 2000).

Results

In Table 1 data is presented on the observed number of restroom facilities at the selected international airports.

Table 1 : Distribution of restroom facilities per site, airport, country and gender

USA										
	Site 1		Site 2		Site 3		Site 4		Total	
	male	female	male	female	male	female	Male	female	male	female
Atlanta	12+7	12	17+12	30	10+6	13	12+10	20	86	75
New York	14+9	17	5+5	8	8+13	19	4+5	9	63	53
								Total	149	128
South Africa										
	Site 1		Site 2		Site 3		Site 4		Total	
	male	female	male	female	male	female	male	female	male	female
Johannesburg	6+4	9	5+4	8	4+3	7	5+6	8	37	32
Cape Town	3+3	3	5+4	7	3+5	5	3+4	5	30	20
								Total	67	52
China										
	Site 1		Site 2		Site 3		Site 4		Total	
	male	female	male	female	male	female	male	female	male	female
Beijing	12+9	13	12+11	19	5+4	4	10+8	9	71	45
Shanghai	9+8	10	5+3	4	6+6	11	6+4	7	47	32
								Total	109	77

In the table above it can be observed that, in the column for males, two values are presented. The first represents the number of toilets and the second the number of urinals found in the restroom. From the same table it is evident that fewer facilities

are available for females at all airports in all the mentioned countries. In the USA, 46.2% of all facilities were allocated to females. In South Africa, this figure is 43.7% and in China it is 39.5%. A statistical analysis of these differences is presented in Table

Table 2: Differences between countries: Anova results

Country		Sum of Squares	df	Mean Square	F	Sig.
USA	Between Groups	27.563	1	27.563	.569	.463
	Within Groups	677.875	14	48.420		
	Total	705.438	15			
South Africa	Between Groups	14.063	1	14.063	4.112	.062
	Within Groups	47.875	14	3.420		
	Total	61.938	15			
China	Between Groups	105.063	1	105.063	3.646	.077
	Within Groups	403.375	14	28.813		
	Total	508.438	15			

From Table 2 it is evident that the differences are not statistically significant at the 5% level. To test the practical

significance of the differences, Cohen d-values were calculated.

Table 3: Practical significance of differences: Cohen d-values

Country		N	Mean	Std. Deviation	Cohen d-value
USA	Female	8	16.0000	7.17137	0.38278
	Male	8	18.6250	6.73875	
	Total	16	17.3125	6.85778	
South Africa	Female	8	6.5000	2.00000	0.92272
	Male	8	8.3750	1.68502	
	Total	16	7.4375	2.03204	
China	Female	8	9.6250	4.95516	0.88028
	Male	8	14.7500	5.75078	
	Total	16	12.1875	5.82201	

From the table above it can be seen that the differences, given the guidelines provided by Cohen (1988) and Steyn (2000), are practically significant for South Africa and China ($d > .8$) and small for the USA ($.5 < d > .2$).

Discussion

Queues at female restrooms at airports exist because, percentage wise, fewer restroom facilities are provided for females (USA 46.2; South Africa 43.7; China 39.5). Statistic such as those should be sufficient for political lobbyists. Political lobbying to increase equivalence in the distribution of

restroom facilities was effective in the USA (Anthony & Dufresne 2009).

The non-significant statistical differences found with the Anova could be the result of sample size. Considering that the social science convention of using a p-value of .05 is contentious and arbitrary (Rosenthal, Rosnow & Rubin 2009), the values of .062 for South Africa and .077 for China could be indicative of actual differences. These differences materialized in the test of effect size, where practically significant differences were found in the number of facilities found in South Africa and China. Statistically, there is thus evidence of gender-based discrimination in these countries.

The observable queues seen at airports, also in the USA, are the result of unequal allocation of restroom facilities. This is particularly so in South Africa and in China. Thus, using a flawed measure provides evidence of gender-based discrimination. This is particularly worrying as this solution does not take account of females' unique requirements when using restrooms.

Conclusion

Queues at female restrooms at airports are the result of poor design which does not consider the unique ablution requirements of women. In order to enhance the female travel experience, designers should take these unique requirements into consideration. As the situation in the USA is not as rife as it is in South Africa or China, we should take note of how changes were effected in the in the USA – namely through political lobbying.

It is therefore suggested that, when observing a queue at female restrooms when visiting an airport, one asks the manager why women are treated as second-class customers.

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