

Create Multiple Fares and Passengers Types

Objective

- Create low, medium and high fare levels and corresponding passenger levels by O&D Point of Origin (POO)
- Apply these levels to the Average Fares and Average Market Size generated during input creations

Data Preparation

- Combine $O\&D_{POO}$ passengers PDEW and fares into fare bucket increments, the smaller increments the better results, and sort in ascending order
- The following example will use \$10 increments to conserve space
- Calculate the passenger percent-of-total of each increment

Data Preparation

- From low to high, calculate the:
 - Absolute difference in passenger percent-of-total from the previous increment
 - No difference exists for the first or lowest increment
 - Cumulative passenger distribution
- In the reverse order, from high to low, calculate the:
 - Absolute difference in passenger percent-of-total from the previous increment
 - No difference exists for the first or highest increment
 - Cumulative passenger distribution

Algorithm

- Establish “Green Zone” thresholds in the cumulative passenger distributions
 - The low fare / medium fare threshold must be between 15-25 percent of the CPD from Low to High
 - The high fare / medium fare threshold must be between 15-25 percent of the CPD from High to Low
- Determine the low / medium fare cutoff point:
 - From the low to high set of data, select the largest passenger difference (starting from the lowest fare increment), then check if the corresponding cumulative percentage falls in the Green Zone
 - If so, this fare increment and all those lower fall in the low fare category
 - If not, continue increment by increment until the Green Zone threshold is met or exceeded

Algorithm

- Determine the high / medium fare cutoff point:
 - From the high to low set of data, select the largest passenger difference (starting from the highest fare increment), then check if the corresponding cumulative percentage falls in the Green Zone
 - If so, this fare increment and all those higher fall in the high fare category
 - If not, continue increment by increment until the Green Zone threshold is met or exceeded
- Calculate the average fare
 - Total passengers were previously computed
- Calculate the high, medium and low fares and their corresponding passengers

Algorithm

- Convert low, medium and high fares into ratios of the average fare
 - An average fare of \$140 and a low fare of \$92 would ratio to 65%, while a high fare of \$239 would ratio to 171%
- Convert low, medium and high passengers to a percent of total passengers
 - Low fare passengers of 92 and total passengers of 288 would yield a low fare percentage of 25%
- Finally, use these ratios and percentages to convert average fares and passengers into their multiple fare equivalents

Multiple Fares: A Numeric Example

							Reverse	Reverse	--- Percent of: ---	
<u>Fare</u>	<u>Pax</u>	<u>PaxPct</u>	<u>PctJump</u>	<u>CumPct</u>	<u>PctJump</u>	<u>CumPct</u>	<u>Fare</u>	<u>Pax</u>	<u>Avg Fare</u>	<u>Total Pax</u>
\$50	1	0%		0%	1%	100%				
\$60	3	1%	1%	1%	0%	100%				
\$70	4	1%	0%	3%	1%	99%				
\$80	2.5	1%	1%	4%	9%	97%				
\$90	27.5	10%	9%	13%	3%	96%				
\$100	35	12%	3%	25%	7%	87%	\$91.58	73	65%	25%
\$110	55	19%	7%	44%	3%	75%				
\$120	45	16%	3%	60%	7%	56%				
\$130	25	9%	7%	69%	5%	40%				
\$140	10	3%	5%	72%	2%	31%				
\$150	5	2%	2%	74%	1%	28%				
\$160	2.5	1%	1%	75%	0%	26%				
\$170	3.5	1%	0%	76%	0%	25%				
\$180	2.5	1%	0%	77%	0%	24%				
\$190	3	1%	0%	78%	2%	23%				
\$200	10	3%	2%	81%	5%	22%	\$129.20	161.5	92%	56%
\$210	25	9%	5%	90%	7%	19%				
\$220	5	2%	7%	92%	1%	10%				
\$230	2	1%	1%	93%	0%	8%				
\$240	1.5	1%	0%	93%	1%	7%				
\$250	4	1%	1%	94%	1%	7%				
\$260	1	0%	1%	95%	0%	6%				
\$270	2	1%	0%	95%	0%	5%				
\$280	2.5	1%	0%	96%	0%	5%				
\$290	3	1%	0%	97%	2%	4%				
\$300	7.5	3%	2%	100%		3%	\$239.07	53.5	171%	19%
Total	288						\$140.07	288		100%

Multiple Fares: A Numeric Example

Global Average

Average Fare		
low = \$73	Med = \$159	Hi = \$282

Percent of Pax		
low = 28%	Med = 44%	Hi = 28%

Sample Market/Poo

Mkt	Poo	Average Fare			Cut		Percent of Pax			TotPax
		Low	Med	Hi	Lo-Med	Med-Hi	Low	Med	Hi	
XXX-YYZ	XXX	25	65	89	45	85	16%	61%	23%	26,198
XXX-YYZ	XXX	109	181	304	125	225	41%	31%	28%	25,729
XXX-YYZ	XXX	27	65	88	45	85	16%	60%	24%	17,802
XXX-YYZ	XXX	94	131	196	85	165	60%	24%	16%	17,636
XXX-YYZ	XXX	57	91	158	45	125	16%	61%	23%	16,889
XXX-YYZ	XXX	42	71	109	25	105	37%	46%	17%	16,815
XXX-YYZ	XXX	51	103	177	45	145	18%	67%	15%	16,771
XXX-YYZ	XXX	41	74	106	25	105	24%	33%	43%	16,742
YYZ-XXX	YYZ	85	164	286	105	205	40%	27%	23%	16,490
YYZ-XXX	YYZ	73	105	168	65	125	41%	36%	23%	16,374
YYZ-XXX	YYZ	55	138	211	65	185	21%	52%	27%	15,607
YYZ-XXX	YYZ	76	117	188	65	165	34%	47%	19%	15,605
YYZ-XXX	YYZ	60	92	150	45	125	28%	50%	22%	15,532
YYZ-XXX	YYZ	42	75	105	25	105	31%	42%	26%	15,276
YYZ-XXX	YYZ	40	74	106	25	105	22%	31%	47%	15,204
YYZ-XXX	YYZ	53	102	196	45	145	25%	49%	26%	14,906