

Media Data Analysis Practice Problems

Prof. Geoff Lantos

BA 344 - Advertising Management

0. An episode of "The Life of Lantos," which airs in the greater Sludgetown region, reaches various age categories as follows:

<u>Group</u>	<u>Total Population</u>	<u>"L of L" Audience Size</u>
Under 12	20,000	2,000
12- 17	15,000	5,000
18-34	20,000	10,000
35-54	25,000	10,000
55+	30,000	5,000

Required:

- Calculate audience coverage of this TV show for each age group.
- Calculate audience composition of this TV show for each age group.

1. Snackie Crackies cereal (two varieties: raisin pits and health nuts) runs the following media schedule during the month of November:

	<u>Audience</u>	<u>Message Opportunities</u> (Frequency)
<i>The Daily Blurb</i>	150,000	20
"Wrestle Fever"	300,000	8
"As the Stomach Turns"	225,000	4

There were 600,000 total potential viewers. 400,000 different people were exposed to one or more of these vehicles.

Required:

- Calculate the reach, cumulative rating, and gross impressions for Snackies' media schedule.
- For purposes of this part, assume that the number of message opportunities in each vehicle is one (i.e., disregard the third column above) and that 25,000 people were exposed to both *The Daily Blurb* and "Wrestle Fever," another 10,000 were exposed to "Wrestle Fever" and "As the Stomach Turns," another 5000 were exposed to *The Daily Blurb* and "As the Stomach Turns," and still another 1000 were (unmercifully) exposed to all three vehicles. Calculate the between-vehicle duplicated impressions, the net impressions, and average frequency.
- For purposes of this part, assume 10,000 people had two message opportunities in *The Daily Blurb*, 20,000 had two message opportunities in "Wrestle Fever," and 15,000 had two message opportunities in "As the Stomach Turns," and there was no other between-vehicle duplication. All people were exposed only to one vehicle (i.e., there was no between-vehicle duplication). Calculate the total number of within-vehicle duplicated impressions, the accumulated audience size, and average frequency (ignore data in part b.)

2. Uncle Earnie's underwater flyswatter had the following media schedule during November:

<u>Vehicle</u>	<u>Audience Rating</u>	<u>Message Opportunities</u>
"Zebra Stripes"	32	3
"Bowling for Dollars"	10	4
"Loose Lips"	25	10

The total target audience size was 100,000 readers/viewers.

Required:

- Calculate total GRPs for this schedule.
- If 20,000 of the 100,000 people were exposed to more than one of these vehicles, what would be total GRPs?
- Calculate total gross impressions for this schedule.

3. Cordelia's canned prunes ran the following magazine media schedule last month:

<u>Magazine</u>	<u>Circulation</u>	<u>Readers Per Issue</u>	<u>Duplicated Readers</u>
"Porcupine Press"	25,000	2	3,000
"The Flintstone"			

Collector"	8,000	5	5,000
"Beehive Management"	12,000	1	2,000

Each ad ran just once in each vehicle.

Required: Calculate gross impressions, unduplicated impressions, and average frequency.

4. Uncle Willy's refried pork hash has the following frequency distribution for the week just ended:

<u>Number of Times Exposed</u>	<u>Number of Persons</u>
0	3,000
1	6,000
2	7,000
3	4,000
4	2,000
5	1,000
6+	0
Total	23,000

Assume all exposures are unduplicated exposures.

Required:

- Calculate the average frequency.
- Calculate the effective reach.

5. D'Sparcy, McFannus, and Bowels ad agency uses a subjective method to weight media vehicles for impact, on a 0.0 to 1.0 scale, based on factors such as compatibility with the client's product, competitive environment, and audience involvement, among others. They calculated the following media schedule for a client for the month of October:

<u>Vehicle</u>	<u>Rating</u>	<u>Frequency</u>	<u>Impact Score</u>
"The Incredible Bulk"	22	3	.3
"Monsterpiece Theatre"	9	4	.8
"I Love Louie"	12	2	.5

Required:

- Calculate GRPs and ERPs for this schedule.
- Why do you think the agency believes that GRPs should exceed ERPs? Which of these two measures is more meaningful?

6. There are 1,000,000 households and 900,000 television households (TVHHs) in the greater Glicktown area. WEEP-TV, channel 3, reaches 800,000 of these homes. At 8 to 8:30 p.m. of second Tuesday last week, 750,000 homes were watching television (Glicktown is not a very exciting place to live), of which 300,000 were watching the "Zeke and Zelda show" on WEEP.

Required: Calculate the following for Glicktown and/or WEEP in the 8:00 to 8:30 time slot.

- TV penetration rate.
- WEEP's coverage
- HUT index.
- WEEP's rating.
- WEEP's share of audience.
- Assuming now that the above are average figures for a typical Tuesday night during the four-week period just ended, and you advertised on "Zeke and Zelda Show" three times during this period. What would be your total GRPs and average share of audience?

7. You are marketing *Dumpsters*, a trashy new novel about a new psychographic segment. You believe that people with a low educational level constitute your target market. Specifically, your research helped you to define your target market as follows:

Educational Level Target Market Profile

Less than 3rd grade	30%
3rd through 5th grade	40%
6th through 9th grade	20%
10th through 12th grade	8%
College education	2%

Data for three magazines' target audiences defined by educational level are as follows;

<u>Educational Level</u>	<u>National Enquirer</u>	<u>Star</u>	<u>Globe</u>
Less than 3rd grade	5%	35%	15%
3rd through 5th grade	15%	35%	20%
6th through 9th grade	25%	25%	30%
10th through 12th grade	35%	4%	20%
College education	20%	1%	15%

Product usage data on trashy novels is also available for each of the three media vehicles as follows:

<i>National Enquirer:</i>	Heavy users - 60%
	Medium users - 30%
	Light users - 2%
	Nonusers - 8%
<i>Star:</i>	Heavy users - 10%
	Medium users - 40%
	Light users - 45%
	Nonusers - 5%
<i>Globe</i>	Heavy users - 30%
	Medium users - 40%
	Light users - 20%
	Nonusers - 10%

Demographic breakdowns of product usage are as follows:

Profile of Usage

<u>Educational Level</u>	Heavy	Medium	Light	Nonuser
Less than 3rd grade	30%	30%	10%	0%
3rd through 5th grade	30%	30%	50%	10%
6th through 9th grade	20%	20%	20%	20%
10th through 12th grade	15%	10%	15%	30%
College education	5%	10%	5%	40%
Total	100%	100%	100%	100%

Required: Assuming you are budget constrained so that you can only afford to advertise by running print ads in one of these three vehicles, and that page rates and CPMs are approximately equal in all three, select a media vehicle to advertise in using each of the following methods of media/market profile matching (explain your choice in each case):

- Direct matching, matching your target market's demographic profile with the demographic profile of the vehicle's target audience.
- Direct matching, using product usage variables.
- Indirect matching.
- Do you get different results with the three methods? If so, which method would you prefer? Why?

8. a. 45% of the Urology Times target audience is in your target market. 10% of the population is in your target market. Calculate an index of target market selectivity for Urology Times.

b. 50% of your target market reads Journal of Eschatology Management. 5% of the population reads this edifying publication. Calculate an index of target market selectivity for this journal.

9. Cost and audience data for :60 spots on three local radio stations are as follows:

<u>Station</u>	<u>Cost</u>	<u>Audience</u>
WART	\$300	40,000
KRAP	\$150	75,000
KOOK	\$250	80,000

Required:

- Calculate unit cost for each station
- Calculate CPM for each station.
- Which station should you advertise on?

10. The following is data on two different magazines:

	<u>Hammer and Sichel</u>	<u>Hansel and Gretel</u>
Per page cost (4 color)	\$20,000	\$25,000
Circulation	300,000	200,000
Readers per issue	2.5	1.8

Required: Calculate the CPM for each of these publications.

11. The following is data on two different magazines:

	<u>Dimple Delight</u>	<u>Funny Freckles</u>
Cost per insertion	\$35,000	\$20,000
Circulation	750,000	900,000
Circulation among your target market	150,000	300,000

Required:

- Calculate the CPM for each of these publications.
- Calculate the CPM/TM for each of these publications.
- Assuming you have been requested to choose the most cost efficient publication, which one do you choose? Why?

12. Cost and ratings data is available for the following three radio programs:

	<u>"Gutter Talk"</u>	<u>"Leftist Lingo"</u>	<u>"Right-wing Rhetoric"</u>
Cost per :60 spot	\$20,000	\$40,000	\$15,000
Rating	10	15	25

Required: Calculate CPRP (CPP) for each of these shows.

13. The following data is available for two newspapers:

	<u>Hixville Recorder</u>	<u>Tinytown Tattler</u>
Cost per page	\$9,000	\$7,000
Cost per line	\$4.00	\$2.75
Circulation	95,000	120,000

Required: Calculate the miline rate for each paper.