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What happens to a Radio Station's Share and Cumulative Audience When a New Radio Station Enters the Marketplace?

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Abstract: *This paper considers the share order effect on existing radio stations' market share and cumulative audience when a new radio station enters an existing market. The share order effect model (SOE) predicts that all brands will lose market share to a new entrant, in direct proportion to their size before the new entrant's launch. The concept of proportional loses is also consistent with the empirical duplication analyses such as Ehrenberg's (1959) Duplication of Purchase Law, as shown by the Dirichlet model (Goodhardt, Ehrenberg and Chatfield, 1981). However, the SOE model may not hold true in all situations, especially where some products could be considered more similar than others. Such an exception could apply to radio markets where many stations have similar formats, for example, rock, easy listening or classic hits. In New Zealand, commercial radio stations are now primarily owned by two media organisations – Radio Works and The Radio Network. These two organisations control the majority of the country's 15 commercial networks. While some networks broadcast nationally, on a range of different frequencies, others broadcast in only four or five out of the over 25 marketplaces. However, over the past decade the two media organisations have extended their network coverage into almost all of the regional marketplaces. This paper examines how a newly launched radio station in one New Zealand commercial radio market impacted on the market share and cumulative audience of the existing stations. It tests the hypothesis that all radio stations will lose market share to a new entrant, in direct proportion to their size before the new entrant's launch. The selected marketplace has a 10+ population of 360,000 with 20 commercial radio stations. The data used in this research comes from the Research International official radio audience surveys which were collected during both 2009 and 2010. The surveys in the marketplace were undertaken during the same time frame each year. The preliminary results support the hypothesis. The correlations between the actual market share and cumulative audience and the predicted market share and cumulative audience were 0.960 and 0.962 respectively, whilst the Mean Absolute Deviations were 3.21 and 4.85 respectively. While the mean absolute deviation (MAD) and the correlation show a good fit, consideration also needs to be given to the average market shares and cumulative audience. The averages were; market share 6.1 and cumulative audience 10.5 - reflecting the intense degree of competition. However, these low average market shares and cumulative audiences mean that the actual sample sizes for each station are also low.While it does not conclusively show that the SOE model holds true in radio markets, this research adds to our body of knowledge. It indicates that while other variables may also affect the overall market share and cumulative audience, a new station entering an existing market will largely draw its audience from the existing stations in proportion to their market share and cumulative audience.*

Key words: Share Order Effect · Dirichlet Model of Consumer Behaviour · Duplication of Purchase · Radio Markets

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1 Introduction and literary survey

The share order effect model (SOE) (Lomax, Hammond, East and Clemente, 1996; Ehrenberg, 1988) predicts that all brands will lose market share to a new entrant, in direct proportion to their size before the new entrant's launch. The concept of proportional loses is also consistent with the empirical duplication analyses such as Ehrenberg's (1959) Duplication of Purchase Law, as shown by the Dirichlet model (Goodhardt, Ehrenberg and Chatfield, 1981).

However, the SOE model may not hold true in all situations, especially where some products could be considered more similar than others (Lomax, Hammond, Clemente and East, 1996). Such an exception could apply to radio markets where many stations have similar formats, for example, rock, easy listening or classic hits. This paper extends previous research (Lees, 2004) further examining how a newly launched radio stations in a New Zealand commercial radio market impacts on the market share and cumulative audience of existing stations.

In New Zealand, radio stations within the commercial radio market are now primarily owned by two media organisations – Radio Works and The Radio Network. These two organisations control the majority of the country's 15 commercial networks. At the start of this century the two media organisations had some networks that broadcast nationally, on a range of different frequencies, while other networks broadcast in only four or five out of the over 25 marketplaces. Over the past ten years the two media organisations have extended their network coverage whereby most networks now broadcast into almost all of New Zealand's marketplaces. This paper looks at the effects of one of those expansions on a regional marketplace.

The Commercial Radio Marketplace

For this extension, just one New Zealand commercial radio market was analysed as it had experienced the recent addition of a new station. The actual marketplace has been replaced by the generic labels ('Market 1') to maintain both marketplace and individual station anonymity. Since commercial radio research requires respondents to be over 10 years of age to complete a diary, the population of the marketplace is expressed in terms of the number of people over the age of 10 (10+ population). The selected marketplace has a 10+ population of 360,000 with 20 commercial radio stations. The marketplace also has at least four non-commercial radio stations – National Radio, Concert programme and two religious stations.

In the marketplace the vast majority of stations broadcast on the FM frequency with some stations also simulcasting in both AM and FM. In 'Market 1' the new station entering the marketplace had a contemporary New Zealand music format – pitching it against in direct competition to at least five other commercial stations.

2 Methodology

The data used in this paper comes from the official radio audience surveys which were collected during both 2009 and 2010. The surveys were undertaken during the same months of each year. Each survey period lasted 8 to 12 weeks. These results are based on the average weekly Monday to Sunday, midnight to midnight audience.

The research methodology was diary based quantitative research. Each diary was pre-printed with all the known radio stations in the region being listed. Two versions of the radio diary were used with the only difference being the order in which the stations were listed. Station orders were reversed to prevent order effects confounding the results.

The diaries were placed within randomly selected households. Respondents had to be over 10 years of age and were asked to complete a diary of their week's radio listening. During that week

the respondents had to indicate the radio station they listened to for each period of 8 minutes or more. Listening was defined as 'respondents being able to hear the spoken announcements being broadcast and so identify the station broadcasting'. Each respondent is contacted at least once throughout the week to ensure the instructions were clearly understood and that there were no problems.

The survey data was weighted by age, gender and geography based on census data to ensure the data was representative of the population. The sample was 1,614 respondents.

As mentioned previously, it is expected that all radio stations will lose share to the new entrant in direct proportion to their size before the launch. The market shares for the existing stations were predicted using the SOE model. As an example, consider, a theoretical radio market with only three stations (Station A, Station B, Station C), into which Station D is launched. Before the launch of Station D, Station A had a market share of 50 %, Station B of 30 % and Station C of 20 %. Station D's launch is successful and it achieves a market share of 10%. The SOE model, underpinned by the IIA (independence of irrelevant alternatives) assumption, would predict that the three existing stations will lose market share to Station D in proportion to the share before the launch. Therefore we would expect the post launch position to be Station D 10 %, Station A 45 % (50*[100-10/100]), Station B 27 % (30*[100-10/100]), and Station C 18 % (20*[100-10/100]).

Therefore this study examines how a newly launched radio station in one New Zealand commercial radio market impacted on the market share and cumulative audience of the existing stations. It tests the hypothesis that all radio stations will lose market share to a new entrant, in direct proportion to their size before the new entrant's launch. In doing so it builds on previous share order effect research and replicates previous research into the New Zealand radio market (Lees, 2004; Lees and Buchanan, 2005) whilst extending it to cover not only market share but also cumulative audience.

3 Results and discussion

How Does a New Radio Station Affect the Market Share of the Existing Stations?

A radio station's market share is based on both its cumulative audience (the number of different people listening) and the time spent listening (how long those people listen for). Therefore any changes in either the cumulative audience or time spent listening will affect the station's share. It also needs to be noted that time spent listening is in fact a measure of purchase or consumption volume and not purchase frequency.

Based on the SOE assumptions, table 1 shows the fit of the actual to the predicted market share for the existing stations. However, the average market share also includes the new station.

The results indicate that the SOE model can be used to predict that all brands will lose market share to a new entrant, in direct proportion to their size before the new entrant's launch

Table 1 Fit of the Actual to the Predicted Market Share

Market 1	
MAPE	19 %
MAD	3.21
r	0.96
Average Market Share	6.1 %

Source: own research

While in all cases the mean absolute percentage error (MAPE) the mean absolute deviation (MAD) and the correlation show a good fit, consideration also needs to be given to the average

market shares. The averages, particularly in the metropolitan markets are relatively low (reflecting the intense degree of competition). These low average market shares mean that the actual sample sizes for each station are also low.

As mentioned previously, market share is a reflection of a station's cumulative audience and time spent listening (TSL). The variable TSL is a measure of purchase or consumption volume and not purchase frequency and may distort the findings. On the other hand cumulative audience is a count of the number of people who listened to a station. Consideration was also given to the impact of a new station on the existing station's cumulative audience. Based on the SOE model, table 2 shows the actual average cumulative audience or reach, and the fit of the actual to the predicted cumulative audience.

Table 2 Fit of the Actual to the Predicted Cumulative Audience

Market 1	
MAPE	13 %
MAD	4.85
r	0.96
Average Cumulative Audience	10.5 %

Source: own research

As with the fit of the market share the MAPE, MAD and correlation for cumulative audience all show a relatively good fit supporting the original proposition, that brands will lose market share to a new entrant, in direct proportion to their size before the new entrant's launch.

However, the new station achieved a market share of less than 3 % and a cumulative audience of less than 5 %. Such small market shares and cumulative audiences, does makes it very difficult to draw any firm conclusions from this marketplace.

As seen in table 2, 'Market 1's cumulative audience showed a good fit with a correlation of 0.96, a MAD of 4.85 and a MAPE of 13 %. However, there were some individual deviations that suggest other variables are operating in that marketplace. These variables may include actions such as changes in station personnel, or increased promotion during the survey period, as well as underlying patterns in possible switching between stations with similar formats.

As mentioned, the concept of proportional loses is also consistent with empirical duplication analyses such as Ehrenberg's Duplication of Purchase Law (see also Lees and Wright, 2012). Consideration was given to possible switching patterns or audience duplication between stations to see if they followed the SOE model. Using the Duplication of Purchase Law with a duplication ratio (D value) of 2.3, the fit of actual audience duplication to estimated duplication showed a correlation or r of 0.91, a MAPE of 7.7 % and a MAD of 2.9. This fit tends to confirm the generalisation that brands share their audience in proportion to their market share.

However, further investigation is required as there is considerable variation for individual station duplication. This variation in duplication between stations could be due to several reasons. Firstly Station A, being the dominant brand in the market, is expected to have a weaker than expected duplication (Fader and Schmittlein, 1993). Secondly there could be partitions in the market reflective of the AM/FM frequencies, and thirdly the vagrancies of the survey period may have impacted on the results.

However, looking at just the new station, its duplication appears to be shared in proportion to the other station's market shares reflecting a double jeopardy trend.

Implications for Radio Marketers

When launching a new station the main aim of the broadcaster is to shift audience listening, in terms of both numbers of listeners and the time spent listening, from the major competition to the new station. This paper shows, from the audience duplication patterns, that while there is a shift of audience listening from the major competition to the new station, there is also a shift from the other stations in proportion to their market share. Thus a degree of cannibalisation may be happening where new stations compete with others in the same stable. This means that while there is a need to ensure the new station is positioned as being substitutable for the main competition and as being distinctly different from any of the organisation's existing stations, the effects of this strategy will be small.

The SOE model also shows that market share estimates for a new station cannot be set in a vacuum and that the SOE needs to be recognised particularly when it will impact across the entire market.

The duplication deviations also indicate that the new station may well behave like an existing station in terms of its cumulative audience and audience duplication. This is also reflective of both Ehrenberg and Goodhardt (2000) and Wright and Sharp (2001) where they show new brands look and behave almost instantly like existing brands. These findings will be of value to broadcasters who are looking at expanding their networks across the country.

4 Conclusions

Conclusion and Further Research

While it does not conclusively show that the SOE model holds true in radio markets, this research has extended previous research. It also indicates that while other variables may also affect the overall market share and cumulative audience, a new station entering an existing market will largely draw its audience from the existing stations in proportion to their market share and cumulative audience. Given the fragmentation of the New Zealand radio marketplace, the main media organisations need to be aware that when launching a new station into an existing marketplace, the new station does not cannibalise their existing stations to the extent that their overall combined cumulative audience is detrimentally affected. However, this threat is likely to be ameliorated where the actual audience draw is affected by how similar the new station is to an existing station's format and by any partitions in the market.

While this research addresses issues in the radio market in terms of market structures and the share order effect, it also highlights the need for further research into audience duplication and listening patterns. Further research could also specifically consider the impact of a new radio station on those stations it is directly targeting not just the 10+ age bracket.

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