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Misinterpretation of Tourism Statistics

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THE MISINTERPRETATION OF TOURISM STATISTICS.

The Morning Bulletin of 11th February 1987, under the front-page headline *"CQ Leads the Nation in Tourism"*, gave details from a press release by Queensland's Minister for Tourism, Mr Muntz, which when interpreted literally, gave the impression that this region was the market leader in terms of successful tourism promotion, as the headline implied.

The statistics cited referred to the seven year period from 1979 to 1986 and the actual measure of tourist activity used was percentage increase in tourists spending the night in the region.

The figures correctly indicated that the Central Queensland Region, with an increase of 87.4% over the period, was the leading Queensland Region, in terms of the measure used, and the Cairns/Tablelands Region was ranked second with 72.9%. Queensland, with a 73% increase was well ahead of the national figure of 44%.

Local Tourist Industry spokesmen reacted favourably to this news.

One spokesman for the Capricorn Tourism and Development Organisation (C.T.D.O.) attributed this headline catching performance to "three things - the increased number of high quality beds, the increased number of attractions, and the increase in industrial activity in Central Queensland".

It is not clear how increased industrial activity makes a region more attractive to tourists nor has Capstats uncovered evidence of any significant recent increase in industrial activity in the region.

Another Rockhampton Tourism Industry spokesman commented that "the figures came as no surprise to him as the Capricorn Iwasaki Resort had poured $1/2 million into material advertising". (Our emphasis)

This spokesman appears to have overlooked that for 6 of the 7 years in question, the Capricorn Iwasaki Resort had not opened its doors to tourists.

Both spokesmen noted several initiatives that had contributed to this outstanding performance.

We at Capstats were surprised at both the statistics themselves and the claims made in relation to them. The statistics came from a reliable source - the Queensland Tourist and Travel Corporation - and the actual percentage increases cited were correct, but on the basis of the performances of the Gold Coast, the Sunshine Coast and the Cairns/Tablelands regions, the big three in terms of successful Tourism Regions over recent years, we found it difficult to understand how, (desirable as it may be) the Rockhampton/Gladstone Region could, in all seriousness, be described as leading the State or Nation in terms of tourism activity.

On examining the recent Q.T.T.C. tourism statistics, we ascertained that in fact, while the actual statistics cited were correct, they did not substantiate the market leadership claims made. What we had here was a selective and quite persuasive interpretation of one measure, "Visitors Staying in Commercial Accommodation" which gave a false impression of the Rockhampton/Gladstone Region as the dynamic market-leader. In addition, the period chosen i.e. 1979-86, had the effect of exaggerating this region's percentage increase relative to other regions, as the 1979 base figure was quite small relative to well established regions such as the Gold Coast and the Sunshine Coast. Modest increases in absolute numbers can show up as high percentage increases. In situations such as this, percentage increases are not valid indicators of differences in comparative performance, and should not be used for this purpose.

The tourism leadership claim, which a thorough analysis of the relevant statistics does not support, exemplifies three major pitfalls (or malpractices) in the selection and interpretation of statistics viz.

1. Reading into a single statistical indicator, an overall performance which it does not support i.e. superficial interpretation.

2. Persuasive misuse of percentage changes as comparative inter-regional performance measures where the base figures are not strictly comparable (i.e.) Incorrect use of statistics.

3. Bias in the selection of a measure that creates the illusion of high level performance where the use of a set or family of indicators is necessary in order to present a balanced performance assessment i.e. persuasive selectivity that is performance biassed.

A close analysis of the statistics presented in the January 1987 "Monthly Monitor", prepared from the Research and Development Department of the Queensland Tourist and Travel Corporation, provides a reliable basis for comparing the Rockhampton/Gladstone Region's performance, between 1983 and 1986, compared with the other eight Queensland Tourism Regions. Before evaluating comparative performances, a few words on the actual performance measure used may be appropriate in each case.

Visitor Nights Spent in Commercial Accommodation.

The measure is equivalent to the number of paying guests in hotels, motels, resorts, cabins, and caravans. Column 1, Table 1, shows the distribution of market shares between the nine regions in 1983. Gold Coast with 31.69% was the clear market leader with Sunshine Coast second (21.2%), and Cairns/Tablelands third (10.2%) The Rockhampton/Gladstone Region with 4.6%, ranked eighth out of the nine regions.

Only Darling Downs with 2.3% had a smaller market share for the year ending 30th June 1983.

In 1986 the Gold Coast was still the market leader having increased its market share to 35.5%; Sunshine Coast was still second with 22.2% and Cairns/Tablelands still third with 11.2%. All three leaders increased their market shares, so some of the less developed regions must have experienced declines.

Rockhampton/Gladstone Region increased its market share by 0.2% and thus improved its ranking from eighth to seventh out of the nine regions. The Townsville/Bowen Region slipped from 5.6% to 4.7% and dropped in the ranking from seventh to eighth out of the nine regions.

Over the period in question, Brisbane/Ipswich, Maryborough/Bundaberg, Mackay/Whitsunday and Townsville/Bowen all experienced declines in market shares.

Now, focusing on absolute increases over the period 1983-86, we notice that Gold Coast, Sunshine Coast and Cairns/Tablelands accounted for 5.83 million of the total Queensland increases of 6.86 million that is a massive 85% of all additional visitor nights. This gives an indication of the magnitude of the "Big Three". The other six regions had to share the remaining 15% that is, 1.03 million visitor nights, between them. Rockhampton/Gladstone gained 360,000 of this 1.03 million which resulted in an increased market share of 0.2%.

Table 1.

VISITOR NIGHTS SPENT IN COMMERCIAL ACCOMMODATION 1983-86

(000'S)

	1983	1983 Market Share	1986	1986 Market Share	Absolute Change 1983-86	% Change 1983-86	Actual Change 1985-86	% Change 1985-86
Gold Coast	5,910	31.6	9,080	35.5	+3,170	+53.6	+1,770	+24.2
Brisbane/Ipswich	1,630	8.7	2,020	7.9	+ 390	+23.9	+ 10	+ 0.5
Sunshine Coast	3,970	21.2	5,670	22.2	+1,700	+42.8	+1,010	+21.7
Maryborough/Bundaberg	1,700	9.1	1,460	5.7	- 240	-14.1	+ 50	+ 3.5
Rockhampton/Gladstone	860	4.6	1,220	4.8	+ 360	+41.9	+ 60	+ 5.2
Mackay/Whitsunday	1,260	6.7	1,450	5.7	+ 190	+15.1	+ 200	+16.0
Townsville/Bowen	1,040	5.6	1,200	4.7	+ 160	+15.4	+ 140	+13.2
Cairns/Tablelands	1,900	10.2	2,860	11.2	+ 960	+50.5	+ 540	+23.3
Darling Downs	420	2.3	590	2.3	+ 170	+40.5	- 10	- 1.7
Qld. Total (Excl. Western Qld.)	18.690	100.0	25,550	100.0	+6,860	+36.7	+3,770	+17.3

This performance is hardly spectacular. Now if we focus on the 1985-86 performance, we notice that Rockhampton/Gladstone Region attracted an additional 60,000 visitor nights and ranks sixth out of the nine regions in terms of absolute gain as well as sixth out of the nine in terms of percentage gain being well behind the three market leaders - Gold Coast, Sunshine Coast and Cairns/Tablelands and also well behind the Mackay/Whitsunday and Townsville/Bowen Regions.

So in terms of the "visitor nights" measure the Rockhampton/Gladstones Region's performance is quite mediocre, but there is some solace to be drawn from the fact that the Region's market share increased marginally.

Visitors Staying in Commercial Accommodation.

Table 2 refers to the indicator upon which the exaggerated claims were based viz. "visitors staying in commercial accommodation" This measure does not take length of stay into account and refers to visitors spending at least one night in the region. (A visitor who spends a night in one venue, say a motel on the Capricorn Coast is recorded once only, but a visitor staying one night in Rockhampton, one night on the Capricorn Coast and one night at Gladstone is recorded three times).

This measure records actual persons booking into commercial accommodation. Each person is recorded once only at each venue, irrespective of the length of stay.

Table 2 shows that in 1983 the Rockhampton/Gladstone Region had a 6% market share and was ranked eighth out of the nine regions being ahead of Darling Downs only.

In 1986 the Rockhampton/Gladstone Region had increased its market share to 8.8% and its ranking to sixth out of the nine regions.

To gain 240,000 additional visitors using commercial accommodation over a three year period was no mean feat. Only the prestigious Gold Coast with 540,000, did better. In interpreting the 88.9% increase it is necessary to remember that at the start of the period the Rockhampton/Gladstone Region had the second smallest base figure (and market share) in Queensland. Note also that Darling Downs, which had the smallest base figure in 1983, experienced a high percentage increase of 66.7%. Percentage increases in situations such as this are not reliable performance indicators.

Table 2.

VISITORS STAYING IN COMMERCIAL ACCOMMODATION

(000'S)

Region	Actual 1983	Market Share 1983	Actual 1986	Market Share 1986	Absolute Change 1983-86	% Change 1983-86	Market Share of Change	Absolute Change 1985-86	% Change 1985-86	Average Length of Stay 1983	Average Length of Stay 1986
Gold Coast	1120	24.7	1660	28.8	+540	+48.2	43.5	+400	+31.7	5.3	5.5
Brisbane/Ipswich	610	13.5	650	11.3	+40	+6.6	3.2	-20	-3.0	2.7	3.1
Sunshine Coast	660	14.6	800	13.9	+140	+21.2	11.3	+20	+2.6	6.0	7.1
Maryborough/Bundaberg	440	9.7	520	9.0	+80	+18.2	6.5	+200	+62.5	3.9	2.8
Rockhampton/Gladstone	270	6.0	510	8.8	+240	+88.9	19.4	+100	+24.4	3.2	2.4
Mackay/Whitsunday	430	9.5	370	6.4	-60	-14.0	-	+40	+12.1	2.9	3.9
Townsville/Bowen	380	8.4	500	8.7	+120	+31.6	9.7	+140	+38.9	2.7	2.4
Cairns/Tablelands	410	9.1	410	7.1	-	-	-	-20	-4.7	4.6	7.0
Darling Downs	210	4.6	350	6.1	+140	+66.7	11.3	-	-	2.0	1.7
Qld. Total (Excl. Western Qld.)	4530	100.0	5770	100.0	+1240	27.4	100.0	860	17.5	4.1	4.4

So while the absolute increase for Rockhampton/Gladstone Region is good by any standards, the percentage increases should be interpreted with caution. In concentrating solely on this "favourable" measure, "length of stay", which is more closely related to expenditure in the region, is ignored. The length of stay statistics, depicted also in Table 2, are far from flattering for the Rockhampton/Gladstone Region.

Over the period in question the length of stay of visitors attracted to the region fell significantly from 3.2 nights (fifth ranking) to 2.4 nights (equal seventh ranking with the Townsville/Bowen Region). Only Darling Downs Region, with 1.7 nights, had a lower length of stay ranking. Note also that while the average for the State was increasing, only Rockhampton/Gladstone, Maryborough/Bundaberg, and Townsville/Bowen Regions showed a decreasing trend, and that for Rockhampton/Gladstone Region was the second most severe. How do our tourism industry spokesmen explain this? More people are visiting the region but they are staying for shorter periods! This does take away from the market leader claim. It shows up a real problem.

In sharp contrast with the Rockhampton/Gladstone Region's performance, notice that the length of stay for the Cairns/Tablelands Region has increased dramatically from 4.6% to 7.0%. This is what improved Tourism performance is all about.

Mackay/Whitsunday Region did very well also in extending visitor's length of stay in the region.

Expenditure by Visitors Staying in Commercial Accommodation.

To operators, this is the most important statistic of all. Table 3 shows that in 1983 the Rockhampton/Gladstone Region with 3.2% market share, ranked a very low eighth out of the nine, Queensland Regions managing only to keep ahead of Darling Downs, as it usually does.

In 1986 this market share had increased to 4.1%, and with Maryborough/Bundaberg Region having experienced a decline in tourist activity, Rockhampton/Gladstone Region improved to seventh position. There is no evidence of leading the State to be seen here, although the percentage increase was second only to Cairns/Tablelands.

Table 3.

EXPENDITURE BY VISITORS STAYING IN COMMERCIAL ACCOMMODATION

($ MILLION)

Region	Actual 1983	Market Share 1983	Actual 1986	Market Share 1986	Absolute Change 1983-86	% Change 1983-86	Absolute Change 1985-86	% Change 1985-86
Gold Coast	300.4	38.2	506.7	38.9	+206.3	+ 68.7	+179.4	+54.8
Brisbane/Ipswich	126.5	16.1	168.0	12.9	+ 41.5	+ 32.8	+ 37.9	+29.1
Sunshine Coast	90.8	11.5	165.6	12.7	+ 74.8	+ 82.4	+ 3.8	+ 2.3
Maryborough/Bundaberg	45.8	5.8	45.0	3.5	- 0.8	- 1.7	+ 10.0	+28.9
Rockhampton/Gladstone	25.1	3.2	53.0	4.1	+ 27.9	+111.2	- 2.4	- 4.4
Mackay/Whitsunday	50.7	6.4	92.9	7.1	+ 42.2	+ 83.2	+ 17.7	+23.5
Townsville/Bowen	52.5	6.7	67.8	5.2	+ 15.3	+ 29.1	+ 16.8	+32.9
Cairns/Tablelands	78.3	10.0	173.3	13.3	+ 95.0	+121.3	+ 80.7	+87.4
Darling Downs	16.5	2.1	31.5	2.4	+ 15.0	+ 90.9	+ 6.7	+27.0
Qld. Total (Excl. Western Qld.)	786.7	100.0	1303.7	100.0	+517.2	+65.7	+351.6	+36.9

When we focus on the most recent performance, we notice that between 1985 and 1986 the Rockhampton/Gladstone Region experienced an absolute decline in Commercial Accommodation takings of $2.4 million, and that this was the only region out of the nine that experienced a decline. If percentages are of interest, over a period where expenditure by visitors for the state rose by approximately 37%, expenditure by visitors in the Rockhampton/Gladstone Region declined by 4.4%.

This is a far cry from leading the State or the Nation.

The Gold Coast is a sophisticated tourist region by international standards and as the tables indicate, it consistently improves its market share position within the Queensland Tourism Market.

The Sunshine Coast, likewise, is a consistently high performer that steadily increases its market share.

Cairns/Tablelands is the outstanding performer of the seven remaining Tourist Regions. On any tourism indicator we wish to examine, this region is forging ahead. It is the region that has consolidated its position as one of the "Big Three". This did not come about by accident. It is the result of careful planning, clever marketing and a highly professional approach to regional promotion within a highly competitive market. Even now the Cairns/Tablelands Region is drawing up a Development Strategy for the next five years - a plan costing $150,000 (50% State Government Funded). The Cairns/Tablelands Region is the most recent success story model.

It is premature for the Rockhampton/Gladstone Region (now two separate regions) to start taking accolades. All the hard work lies up ahead.

Conclusion.

We trust that we have established the need for caution in interpreting statistics, in particular, we hope that we have demonstrated how persuasive and how misleading citing percentage changes can be. Superficial analysis and bias in the selection of indicators can misrepresent the true situation. Statistics are meant to present facts - not distort them.