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MASSEY UNIVERSITY AND
PALMERSTON NORTH

An Impact Study of Some Relationships Between
University and City

A thesis presented in partial fulfilment of the
requirements for the degree of Master of Arts
in Geography at Massey University

by

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1978

ERRATA :

P.37 Table 3. Should read:

$$Mt = Ac + t - (Ac \times Lt)$$

Ac + t = Age cohort A at census c + t yrs.

P.48 Table 9. Age groups 65 - yrs. should read 65+

P.49 Table 10. Age groups 90- yrs should read 90 +

P.53 Line one should read '30 -34 age groups '

P.56 Table 12. Correction as for Table 3.

P.60 Table 13. Note should read:

Internal Students = Full Time + Part Time.

P.65 Table 16. Year 1969 should be added as follows:

Education	234
Humanities	702
Science	82
<u>Soc.Sci.</u>	<u>716</u>
	1734

P.67 Text correction:

Formula should read as follows:

$$\left[a(IE) - b \right] + a \left[M-b (M) \right] + a \left[M-b (M) \right] \times R$$

P.70 The calculation 2726 - 327 - 361 = 3414 should have the minus signs replaced by addition signs.

ABSTRACT

An examination of the regional impact of a non-profit making institution is central to this study. This type of institution is seen as not merely a response to a local or national need but also as a determinant of regional population and economic change. The development of Massey University since 1966 was the example selected for analysis. The study seeks to add to the more usual type of impact analysis by examining population and spatial changes as well. It also seeks to derive relationships that may be of use to planners of other similar institutions.

The population base prior to, and after 1966 was examined in terms of growth, structural change, and migration dynamics. The population components directly attributable to the university were also measured, then subtracted from the established base population. This revealed the probable population impact that the university had made upon the city of Palmerston North. It was estimated that the migration gain of 5000 from 1966 to 1971 would have been a net loss of 500 if the university had not intervened. Infrastructure additions of 874 dwelling units, and over 30 classrooms were estimated to have been needed to provide for the estimated 8% of the total population that could be directly attributed to the university. Suburban growth in new housing areas and in the central city area were seen as one consequence of this.

Economic impacts were examined by way of an economic base ratio to derive a static employment multiplier. When the calculated multiplier value of 1.36 was applied to the 788 jobs created by the university it was estimated to have generated a further 286 in supportive industry. Regional income multipliers were derived from three surveys of income, consumption and expenditure patterns. The first survey was of academic staff, and a

multiplier value of 1.34 was derived. The second survey was of non-academic staff members, and from this a multiplier value of 1.30 was established. The survey of students yielded a multiplier value of 2.27. The economic base multiplier value of 1.36 was applied to the regional expenditure of the university itself. From this information it was determined that an estimated \$18.15 million was added to the regional income in 1976 from all the previous sources.

The relationships between all of the estimates may be expressed in terms that may be of interest to those involved in the planning of other tertiary institutions within the region. They are as follows:

For every 100 internal students enrolled, full-time and part-time;

35 staff members and dependents were added to the city population.

18 housing units were required.

19 jobs were created at the university.

6 jobs in supportive industry were created in the city.

0.72 classrooms were required for dependent children.

\$377,075 was added to the regional income from all sources.

PREFACE

At the outset of this study it was the intention to examine the impact of a 'new' University upon its region. To a geographer the human and spatial dimensions of change are as important as the more usual economic analysis of impact. It is with this in mind that the study was undertaken.

Education is an activity that society engages upon for the intrinsic merits of so doing. Nevertheless it is clearly seen by all who inhabit Palmerston North city that the results of the University development are seen in population growth and changes, in extra employment created within the region, and the directing of millions of dollars into the local economy, all of which should be measurable. It was felt that the stimulus of the University development has created a city that is substantially different from the type of city it was, and from others of a similar size in the nation not having a university. An important aim of the thesis is to probe changes following University development.

The phenomenon of population change as a dynamic process assumes importance in this study, and some attempt is made to explore this in terms of migration, the dynamics of the city's growth, and the overall changes that these have brought. There is little doubt that this is capable of being pursued further, and a study of these elements at some future time could test the assumptions and findings made here. Additional research could also be undertaken to study the relationship between changes in population and the development of infrastructure to meet these changes.

In order to prosecute the study a close analysis was made of the government census figures for 50 years, with greater attention given to the last two decades. To gain further information concerning the origins, ages, and residences of students a survey

was conducted of students who were boarding, flatting and living in hostels. Of necessity these were random samples, and an error factor is recognised as being present in the extrapolation of the results. Wherever possible this was reduced by cross checking the information gained with University statistics, student enrolment forms, and other data obtained from the Registry.

Information concerning staff members, both academic and non-academic, was similarly obtained. Two surveys were conducted to ascertain levels of income and expenditure, marital status and number of dependents, and residential details. One was conducted with academic staff members, the other with non-academic staff. Questionnaires were sent to a random sample of each staff category as the University had no information available. Again error is a recognised factor, and as it was not possible to cross check as previously, the data so gained was examined and interpreted in a conservative manner. The impression left was that the University knew very little about itself.

Whilst the techniques used are recognised research methods the variation in time span makes it less accurate than it would otherwise have been. If data for 1976 were available from the records of that year, rather than gathered in 1978 and applied in retrospect the accuracy would be greater. Where changes have occurred in this manner, every effort has been made to compensate.

ACKNOWLEDGMENTS

Without the help and assistance of many people this study would have never been completed. I take this opportunity to extend thanks to all who have given generously of their time and patience in helping to resolve the many problems I encountered. In particular I wish to acknowledge and thank Dr. Richard Le Heron for the encouragement and help he has offered both as my teacher and supervisor in this venture. Together with the staff of the Geography

Department of the University, he has given me an appreciation of the academic discipline of Geography.

I could have done little without the assistance of my employers, the officers of the Hawke's Bay Education Board, and the Department of Education through whose generosity I was able to continue with University studies. I am grateful too, for the ready assistance of the Registry staff of the University, especially Mr Weir, and his officers, Mr. Wood, Mr. Lovell, and Mr. Birkbeck. It was with their assistance that I was able to obtain information from the University records.

I extend thanks to the library staff at the University, and the National Library, for the time they have spent assisting me to find information concerning the population of Palmerston North. The time and assistance offered by the staff and students who took part in the surveys is also recognised gratefully. It filled in vital gaps with information unobtainable in any other manner. I would especially like to recognise the patient and loyal encouragement of my wife, Margaret, without whom I could not have achieved anything.

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