

FOOD RETAILING
IN ECONOMIC DEVELOPMENT:
PUERTO RICO, 1950-1965

Thesis for the Degree of Ph. D.
MICHIGAN STATE UNIVERSITY
John Reed Wish
1967



This is to certify that the

thesis entitled

FOOD RETAILING IN ECONOMIC DEVELOPMENT:
PUERTO RICO 1950 - 1965

presented by

JOHN REED WISH

has been accepted towards fulfillment
of the requirements for

Ph. D. degree in Business
Administration

A handwritten signature in cursive script, appearing to read "Charles C. State".

Major professor

Date July 11, 1967

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ABSTRACT

FOOD RETAILING IN ECONOMIC DEVELOPMENT: PUERTO RICO, 1950 - 1965

By

John Reed Wish

In the world as a whole, food supplies have not kept pace with population growth. While much effort has been devoted to production problems, little attention has been given to distribution. This thesis represents a portion of a United States Agency for International Development sponsored project to study the changes in food distribution and how those changes affected the economic development of Puerto Rico.

The specific goals of the research were: (1) to describe accurately what happened in food retailing from 1950 - 1965; (2) to investigate and explain the process by which change occurred in the Puerto Rican food retailing sector; and (3) to understand better the variables correlated with innovativeness.

Three different approaches were used. First, a historical description of retailing changes and the political and social factors behind them were compiled from

secondary sources. Second, from survey data of 1950 and 1965, from censuses of business for the period 1949 through 1963, and from informal interviews, a picture of the economics of change was drawn. Finally, social-psychological survey data was used to determine the explanations for innovativeness and to understand those which brought about the changes.

Some major findings of the research were:

1. In the sense of Rostow's national market, there was greater "national market" over the years studied. Only 44 per cent of the food consumption passed through retail food stores in 1949, as compared to 63 per cent in 1963.
2. While the precursors to change were many, the man who smoothed the way more than any other was the powerful politician and first-elected governor of Puerto Rico, Luis Muñoz-Marin. He publicly and privately committed himself and his party to a broad program of social reform.
3. Average gross margins of supermarkets in 1964 were 17.8 per cent, as compared to food store average gross margins of 23.1 per cent in 1949. In addition, it was found that basic foods like rice, beans, and dried cod were priced lower in the supermarkets than in the more traditional stores in 1966.

4. During the years considered, several efficiencies were introduced and, contrary to the expectations of many, total employment in food retailing increased rather than decreased.
5. The methods used in this thesis do not permit one to ascertain precisely the contribution of food retailing to the economic development of Puerto Rico. Still, it seems safe to conclude that food retailing has made a contribution through lower retailing margins, relatively lower prices, more employment, better diets, and lowered risks for the farmer.
6. Factor analysis suggested that the "ideal type" who introduced these changes in food retailing was young and well-educated, used mass media extensively to glean new ideas, knew of government programs that might help him, had a knowledge of prices in other areas, traveled more than average, but did not consider himself a Puerto Rican.

FOOD RETAILING
IN ECONOMIC DEVELOPMENT:
PUERTO RICO, 1950 - 1965

by
John Reed Wish

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Marketing and
Transportation Administration

1967

646740
12-8-67

FOREWORD

This thesis is one of several Ph. D. dissertations to come out of two research projects sponsored by the United States Agency for International Development. The co-directors of the first study, the Latin American Food Marketing Study, of which this thesis is a part, are Dr. Charles C. Slater, Professor of Marketing; Dr. Harold M. Riley, Professor of Agricultural Economics; and Dr. R. Vincent Farace, Associate Professor of Communication. Dr. James Shaffer of Agricultural Economics and Dr. Herman Koenig of Electrical Engineering served as consultants from Michigan State University. The second research project is the Latin American Market Planning Center under the direction of Dr. Charles C. Slater.

The first phase of the Latin American Food Marketing Study took place from June 1965 through June 1966 in Puerto Rico.¹ An interdisciplinary team of researchers from Michigan State University, the University of Puerto Rico, and the Puerto Rican Department of Commerce participated in that effort. Mr. Kelly Harrison, a doctoral

¹See Appendix A for a history of the project.

candidate in Agricultural Economics, and the author were with the project from its inception.

One of the strengths of this interagency project was that it combined the talents of Continentals and Puerto Ricans. Two Puerto Rican Department of Commerce employees, Mr. José Santiago and Mrs. Idalia Rodriguez, were assigned to the project full time, and the latter was engaged at the time in research for her master's thesis. In addition, three Puerto Rican graduate students worked part-time on the project and intended writing their theses as a part of the research. The general topics of the theses written by others are listed below.

José Gonzalez Casillas, **"The Marketing of Selected Starchy Vegetables in Puerto Rico"* (M.S. candidate, Department of Economics, College of Agriculture at Mayaguez, Puerto Rico).

Luis Davis, **"La Diferencia en Márgenes de Precios de una Selección de productos agrícolas"* (M.S. candidate, Department of Economics, University of Puerto Rico).

Kelly Harrison, *"Agricultural Marketing Coordination and its Role in Agricultural Development in Puerto Rico,"* (Ph.D. Candidate, Department of Agricultural Economics, Michigan State University, 1966).

Idalia Rodriguez, **"An Analysis of Changes in Consumer Demand for Food and Food Shopping Habits, Puerto Rico, 1950-65"* (M.S. candidate, Department of Economics, University of Puerto Rico).

Perfecto Santana, **"Análisis Comparativo de los Cargos de Transportación y la Estructura Geografica de Precios para un Grupo Seleccionado de Productos Alimenticios en Puerto Rico, 1950-65"* (M.S. candidate, Department of Economics, University of Puerto Rico).

* To be completed around September 1967.

The first public airing of some of the project views was given by Dr. Charles C. Slater at the American Marketing Association Meetings in September 1965. Then, in June 1966, a three-day conference was held in San Juan to discuss preliminary findings with local businessmen, government officials, representatives of the United States Agency for International Development, and officials of certain Latin American governments. A limited number of summaries have been published.¹

At Michigan State University, East Lansing, the Communication Department, the Computer Services Branch, and the Agricultural Economics Department gave the project primary support on data processing. Since May 1966, Dr. Vincent Farace of the Communication Department has been, in addition to his other responsibilities with the project, in charge of data processing and analysis.

¹Robert W. Nason (ed.), The Role of Food Marketing in the Economic Development of Puerto Rico. Summary of the seminar held June 8-11, 1966, San Juan, Puerto Rico.

ACKNOWLEDGMENTS

The research, analysis, and writing for this thesis was done while the author was employed as a research assistant in the Department of Marketing and the Latin American Studies Center of Michigan State University. Drs. Charles C. Slater, Harold M. Riley, and R. Vincent Farace, the co-directors of the research project sponsored by the United States Agency for International Development, of which this thesis is a part, contributed many of the ideas and concepts developed herein. One of the great advantages to the author was the continual exchange of ideas that took place between the co-directors and other faculty members, such as Dr. James D. Shaffer, Dr. Herman Koenig, José Santiago, Idalia Rodriguez, and Kelly Harrison.

Throughout the development of this thesis, the author was fortunate to have the guidance and interest of his committee, who were at times geographically distant. While Drs. Slater and Riley were on the scene in Puerto Rico for over six of the twelve months of field work, the other thesis committee members gave freely of their time from distant locations. Dr. Everett Rogers of the Department of Communication took time from his own research

efforts to help, read, and constructively criticize. Dr. Donald Taylor of the Department of Marketing was able to comment in detail and suggest better organization even though he was working both in Recife, Brazil, and at the Michigan State University campus. The comments and criticisms from each of the committee members helped improve the analysis and clarify the final presentation of the dissertation.

There were others who contributed as much. In Puerto Rico, there was the assistance of more than 100 food retailers who were willing to be interviewed. There were the many conversations with Mr. William P. Roach, the head buyer of Grand Union Supermarkets, and Mr. Modesto Ortiz, the general manager of the Cooperative Federation. Mr. Harold Toppel, Mr. George Topel, Mr. Milton Toppel, and Mr. Max Seplowin of Pueblo Supermarkets were also most helpful in providing background material. Mr. Lee Slusher, general manager of Bargain Town Supermarkets and a relative newcomer to Puerto Rico, provided the view of a recently arrived entrepreneur.

In Puerto Rican government offices, there was always a willing sense of cooperation. Mr. Don Lemons, consultant in the Department of Commerce and formerly a director of Fomento's food marketing program, was especially helpful because of his first-hand knowledge of the government and private industry programs. The Agricultural

Experiment Station loaned the use of its IBM facilities as well as gave us access to the economists who were most intimately concerned with the improvements of food marketing. The Agricultural Extension Service was involved in consumer marketing programs and help to cooperatives, and we were given access to their files, information, and knowledge. Here, Mrs. Judith Frias was especially helpful.

At the University of Puerto Rico campus, our main contact was the Social Science Research Center. The director, Dr. Rafael de Jesus-Toro, was helpful and encouraging in all phases of our work. His administrative assistant, Miss Carmen H. Lopez, was of particularly great help in retrieving research memorandums from the 1949-53 Galbraith and Holton study.

Even with all the help in Puerto Rico, the thesis would have been much more difficult to do had it not been for willing help on the Michigan State University campus. Most of the analysis took place during the summer of 1966. During that time, the author had considerable help from the personnel of the Latin American Study Center, whose director, Dr. Garland Wood, had been the campus coordinator. Miss Pat Moyer helped greatly in data research. Dr. Vincent Farace and his graduate assistant, David Lindley of the Department of Communication, were of great assistance in planning and executing the data processing.

Last, but not least, I wish to acknowledge the part played by my wife, Marianne, who helped in the editing and encouraged me at all times, and our three young children, who showed great patience during this period of stress.

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CHAPTER I

MARKETING AND DEVELOPMENT

(A REVIEW OF LITERATURE)

Introduction

There is evidence to suggest that, as the wealthier nations become even wealthier on a per capita income basis, the poorer nations become even more impoverished in that respect. L. J. Zimmerman suggests that "the past hundred years have shown a relative impoverishment of the poorest part of the world,"¹ and "our findings lead to the conclusion that a hundred years ago the distribution of the world income was much more equal than it is today."²

There is also growing attention being paid to the lower rate of growth of food supply as compared with population growth. The relative importance of food and food prices is emphasized by the fact that low-income families making up a dominant proportion of the urban population spend from 45 to 75 per cent of their disposable incomes

¹L. J. Zimmerman, Poor Lands, Rich Lands: The Widening Gap (New York: Random House, 1965), p. 38.

²Ibid., p. 40.

on food. Hence, market reforms which bring about changes in the availability and price of food could have a substantial effect on the welfare of consumers and on their potential productivity as workers. In addition, it seems reasonable to expect that marketing improvements which provide more dependable market outlets and more stable prices would encourage an expansion in farm production and the commercial sale of an increasing marketable surplus over and above subsistence needs. This would lead to expanded economic activity in food processing and distribution and would contribute to economic growth and political stability. This chapter includes a review of the generally accepted theory of economic development.

Contributions from Economic Theory

The Classical School

Adam Smith suggested that development could be best accomplished through increased specialization. He points out that greater division of labor and specialization lead (1) "to an increase in dexterity among workers, (2) to a reduction in the time necessary to produce commodities, and (3) to the invention of better machines and equipment."³

³Gerald M. Meir and Robert E. Baldwin, Economic Development Theory, History, Policy (New York: John Wiley and Sons, Inc., 1957), p. 21.

The impetus toward this specialization was what Smith called "the natural tendency of men to truck, barter, and exchange one thing for another."⁴ According to Smith, accelerated development could come about only as capitalists were willing to save and invest in new and improved methods of production. The investment of capitalists thus provided jobs for the surplus workers from the agricultural sector.

Parsimony, and not industry, is the immediate cause of the increase of capital. Industry, indeed, provides the subject which parsimony accumulates. But whatever industry might acquire, if parsimony did not save and store up, the capital would never be greater.⁵

In addition, Smith warns that the size of the market may limit the division of labor and thereby slow the accumulation of capital and economic development.

Economists, following in the steps of Adam Smith, remembered part of his ideas and devoted much attention to the subject of capital accumulation. But it would seem that the attention of these developmental experts turned away from the "tendency to truck and barter" and centered on the loftier concerns of capital accumulation and the general

⁴Adam Smith, An Inquiry into the Nature and Causes of the Wealth of Nations, ed. Edwin Cannan (New York: The Modern Library, Random House, 1937), p. 13.

⁵Ibid., II, ch. 3.

benefits of parsimony, particularly among the poor. It seems worthwhile, consequently, to review some of the writings which touch upon "exchange" in general and the role of exchange or marketing in food as a contributing factor to development.

The Neo-Classical School

With the exception of Adam Smith, whose contributions to the ideas of developmental economics have been commented upon, the classical economists were, for the most part, concerned with accumulation of capital. Subsequently, in the late 19th century, Alfred Marshall and others who came to be known as neo-classicists modified the classical description of the process of capital accumulation by re-defining the role of investors and savers. Contrary to the classical model, savers and investors did not necessarily have to be the same people. The capital market was the institutional arrangement which facilitated the flow of savings into productive investment.

Under the neo-classical model, economic development was viewed as a gradual harmonious process whereby all groups eventually reaped the benefits of growth. Marshall's concept of "external" economies illustrates the ways in which investments by one entrepreneur may benefit others.

Schumpeter's Disharmonious Growth

In his book, The Theory of Economic Development, J. A. Schumpeter rejected the classical and neo-classical belief that economic growth is a gradual harmonious process. He argued that real economic advances come in leaps and spurts as a result of great innovations. Consequently, he placed a great deal of emphasis on the entrepreneur as the central figure in the development process.

He is the innovator, the one who undertakes new combinations of the factors of production. Innovations may occur in the following forms: (1) the introduction of a new good; (2) the use of a new method of production; (3) the opening of a new market; (4) the conquest of a new source of raw material supply; and (5) the reorganization of any industry.⁶

Schumpeter argued that economic development occurred in an environment where businessmen could not, with certainty, evaluate the risk nor readily compare the rate of return to the interest rate in order to make riskless investment decisions by weighing rate of return against the cost of capital. In Schumpeter's world, "a high degree of risk and uncertainty exist."⁷

The entrepreneur, then, is the particular type of individual who is willing to operate in an uncertain environment and make innovations successful. It is this kind

⁶ Meir and Baldwin, op. cit., p. 87.

⁷ Ibid., p. 87.

Schumpeter is never clear about the origins of the innovator. It is suggested in this thesis that the collisions between cultures also brings about innovation.

of environment which leads Schumpeter to conclude that great spurts of development are centered around, and ignited by, significant economic innovations.

Schumpeter recognized the importance of capital accumulation in the development process, but he did not feel that the neo-classical theory of capital accumulation was appropriate in a real world of high risk and disharmonious growth.

While some of his ideas have been supplanted by later economists, Schumpeter's emphasis on the entrepreneur as the agent of economic growth continues to receive a great deal of attention. The measurement and prediction of factors associated with innovativeness (i.e., the types of persons who become entrepreneurs) will be discussed in later chapters of this thesis.

Keynes and Post-Keynesian Contributions

In 1936, John Maynard Keynes published a book which stimulated a revolution in the economics of income and employment. His work was aimed at explaining the causes and remedies for the great economic depression which gripped the developed world.

Keynes pointed out that unemployment and economic stagnation could be an equilibrium condition in a capitalistic economy. This was caused by two factors: (1) The investor's perception of the relationship between the cost of capital and the probable return on investment makes him

unwilling to provide sufficient productive investments (i.e., perceived risk is too great); (2) The demand for money for liquidity purposes at a low interest rate is such that people would rather hold cash balances than purchase securities at a low return (i.e., perceived return is too low). Hence, there will be a lack of investment capital which prevents full employment. A continuation of the low propensity to invest would lead to idle plant capacity, greater unemployment and low consumption. Therefore, a lack of effective demand was postulated as the main factor preventing full employment. Keynes argued that one way to alleviate the problem was through heavy government spending and deficit financing. Such spending would provide additional employment and foster confidence in the economic future, which would encourage private investment. This would lead to greater employment and greater income through the multiplier effect.

Most developmental economists argue that even though Keynes' analysis has considerable appeal and utility in developed nations, his solution is not directly applicable in the less developed economies. They argue that even though low income, low employment, and low investment are the same conditions postulated by Keynes, his remedies do not apply to developing nations because "unemployment, though extensive, is usually confined to unskilled workers. In addition, excess capacity prevails only in particular industries and sectors. Because of shortages and bottlenecks elsewhere,

deficit financing is most likely to result in a rise in the price level without any increase in real output."⁸ Some economists are now saying that at least parts of the Keynesian analysis can and should be used to a much greater extent in diagnosing and treating the development problems of the poor nations.

Post-Keynesian analysis is generally an extension of Keynes' teaching. The two main proponents are Ensey Domar and R. F. Harrod. Those two economists, working separately, devised similar economic growth models based on Keynesian analysis. Their major contribution was in viewing capital accumulation in a dual role. Investment generates income and it also increases the productive capacity of the economy by increasing its capital stock. Harrod and Domar were, therefore, concerned with determining the conditions required for smooth growth in real income. Their growth model was designed for the more developed economies but has been widely used for forecasting growth rates and determining saving rates for income growth targets in developing nations. While it depends heavily upon Keynes' theories, it is much more oriented to investment than to Keynes' ideas of the importance of demand.

⁸Robert E. Baldwin, Economic Development and Growth (New York: John Wiley and Sons, Inc., 1966), p. 42.

Pragmatic Suggestions for Rapid Development

Although some of the economists discussed earlier argued that lack of effective demand was not an issue of developing nations, Lauchlin Currie suggests that it is. He implies that developing nations, under the influence of economic development theorists, have placed too much emphasis on GNP growth rates, production, and investment. As a result, consumption has lost its place as the goal of production. He therefore suggests a development plan which would place primary emphasis on increased consumption, particularly of the low income under-employed. He stressed the value of economic theory in his plan and is especially convinced that the Keynesian analysis of the lack of effective demand is useful. Basically, his argument is that economic efficiency considerations and traditional development theory are necessary but not sufficient to break through the vicious circle of poverty in developing nations. The approach must also include considerations in income distribution, or as he prefers, "relative consumption gains arising from income redistribution."

Currie has suggested that those countries interested in economic development should reformulate their development objectives, taking into consideration the importance of income distribution, as well as aggregate gross income. He defines his objectives as:

A program designed to assure the elements of a minimum tolerable standard of living for, say, the poorer half of the population in terms of the basic necessities of food, clothing, housing, health, primary education, miscellaneous goods, and amusements.⁹

He argues that most Latin American nations fit in with the type of stagnation analysis that was applicable to Western Europe and the United States in the thirties, the Keynesian analysis of lack of effective demand, and unused capacity. He cites the example of the great increases in output in World War II when all resources were bent toward common goals as being quite a revelation. With little or no immediate addition to capital, output increased in the United States from \$186 billion in 1938 to over \$320 billion in 1944.¹⁰ The increase in output came from intensive use of existing facilities and labor.

Further, Currie argues that the experiences of European recovery after the Second World War have useful lessons for developing nations. He is very much concerned about the lack of effective demand and the distribution of income, mainly in the cities. He argues that if the level of living for the poorest people in the cities is improved, great numbers will be better off. He determines that the birth rates of city dwellers appear to be lower than birth rates of the rural population. He agrees with many other

⁹Lauchlin Currie, Accelerating Development - The Necessity and the Means (New York: McGraw-Hill Book Company, 1966), p. 20.

¹⁰Ibid., p. 81.

observers that there is a population surplus in the rural areas. He makes the further point, though, that one way to slow down the population explosion is to get more people out of the rural areas and into the city. When this happens, he implies that the people left in the rural areas will be better off.

Currie contends that agricultural incomes are too low and that there is competition between the mechanized, efficient farmer and the marginal subsistence farmer.¹¹ He continues that once the elements of agricultural technology have been mastered and there are no support prices or dumping, the growth of agricultural output will depend upon the growth of effective demand, regardless of the resources poured into agriculture.¹²

Since most of the people still live in rural areas, Currie claims his interest is in achieving some minimum standard of consumption or well-being for the masses, "though not necessarily concerned with improving its welfare where it now happens to be engaged in what it is now doing."¹³ In essence, he is promoting a mobilization of the nation's total resources, economic and human, for a domestic war to eliminate poverty.

¹¹Currie, Op. Cit., p. 33.

¹²Ibid., p. 38.

¹³Ibid., p. 22.

Walt Rostow also is concerned with increasing well-being. He makes a specific point of the fact that development cannot proceed unless the great numbers of people who are not now in the money economy (mainly rural peasants) are brought into it. For example, if 50 per cent of the population has no money and no way of earning it, and if only 10 or 20 per cent of the remainder can assert their demand for goods, the market is much smaller and distorted than it appears at first sight. Getting more people into the money economy through more effective exchange linkages between urban and rural areas is what Rostow calls the creation of the "national market."¹⁴ Thus, Rostow is among the few economists who have made a point of emphasizing Smith's early recognition of the "natural tendency to truck and barter." To Rostow, the phrase "national market" connotes an interlocking exchange of products between the urban and rural sectors within or between regions of a country.

Admittedly, Currie does not use the phrase which Rostow coined, but they are both concerned with raising the level of living, and Rostow would agree with Currie's contention that for many countries, particularly those in Latin America, "the problem is at least capable of solutions,"¹⁵

¹⁴W. W. Rostow, "The Concept of the National Market and its Economic Growth Implications," Proceedings of the 1965 Fall Conference of the American Marketing Association (Chicago, 1965), p. 18.

¹⁵Currie, Op. cit., p. 31.

and "is a problem of the gap between the rich and poor parts of the developing nations themselves."¹⁶

Rostow further suggests that "the operational task of development in many parts of the world over the next decade or so may be to break down these structural distortions, to produce a self-reinforcing agricultural and industrial expansion, and to create truly national markets within these countries."¹⁷ Rostow is concerned with the results of better national markets.

Marketing in Development

Even if it is desirable to create a "national market," how is it accomplished? Rostow suggests that one way is by widening domestic markets through the production of low-cost consumer items. This would be paid for by farm production that is sold to buyers from the burgeoning urban areas. Rostow believes that each of us desires enough to eat, some degree of mobility, and the possibility of privacy. Yet, Elizabeth Hoyt has noted that:

One can look through whole shelves of books on the economics of underdeveloped areas without finding reference to the importance of incentive through development of wants or the importance of markets as a means by which this incentive can be given.¹⁸

¹⁶W. W. Rostow, View from the Seventh Floor (New York, Harper and Row, 1964), p. 135.

¹⁷Ibid., p. 135.

¹⁸Elizabeth Hoyt, "Impact of a Money Economy on Consumption Patterns" (The Annals of the American Academy, #305, 1956), p. 20.

Her comment was written before the recent expression of concern for the "national market." Rostow, in a speech before the American Marketing Association, suggests that "there are (assuming roads and minimum basic education) four necessary and sufficient conditions" for the creation of the "national market:"

1. The farmer must receive a reliable and fair price for his product;
2. Credit must be available at reasonable rates;
3. There must be technical assistance that is relevant to local conditions; and
4. Reasonable prices for inputs for farm and family, such as seed, fertilizers, farm tools, and consumer goods.

Rostow continues that when these conditions are met, development accelerates and food production increases.¹⁹

In 1958, Peter Drucker noted:

The essential aspect of an underdeveloped economy and the factor, the absence of which keeps it underdeveloped, is the ability to organize economic efforts and energies....to convert a self-limiting, static system into creative, self-generating organic growth.²⁰

Drucker goes on to state that marketing improvements are the ones which will start the self-generating organic growth. The opposite opinion has been expressed by Kenneth Myers,

¹⁹W. W. Rostow, "The Concept of a National Market and its Economic Growth, Implications, in Marketing and Economic Development," p. 11.

²⁰Peter F. Drucker, "Marketing and Economic Development," Journal of Marketing 22(3) 1958, 255.

who notes that a historical study of United States development indicates, "the role of marketing was adaptive."²¹

On the other hand, Moyer and Hollander²² agree that further research is needed before any definitive conclusions can be made concerning the measureable role of marketing in the rate of economic development. Moyer accepts the traditional definition of marketing as:

the performance of business activities directed toward, and incident to, the flow of goods and services from producer to consumer or user.

He adds that it is also:

an organizing function which integrates and thus reduces risks of production and consumption.²³

Moyer's monograph summarizes the findings of the few empirical studies that have been conducted throughout the world. As a result of his review, he concludes that it is possible for persons and institutions in marketing to perform functions which might contribute to the development process. However, there have been some specific

²¹Kenneth H. Myers, "Marketing's Role in the Economy," Proceedings of the Winter Conference of the American Marketing Association, December 1963.

²²Stanley C. Hollander, "Retailing Cause or Effect?" Proceedings of the Winter Conference, American Marketing Association, December 1962, p. 223.

²³Reed Moyer, Marketing in Economic Development, International Business Occasional Paper #1, Graduate School of Business Administration, Michigan State University, 1965.

contributions made in the critical area of food marketing and economic development which shed a bit more light on the issues.

Food Marketing in Development

It is difficult to over-emphasize the importance of food in a developing economy because of the high percentage of total income spent for this necessary group of commodities. Throughout most of Latin America, rapid population expansion and urbanization are placing increasing pressures on food supplies.²⁴ Inadequate production and/or poor management of food inventories have frequently contributed to inflationary price spirals.

As mentioned above, marketing reforms, as part of an overall strategy for attaining more rapid economic growth, might have strategic importance. But, at present, relatively little is known about how to develop improved food marketing systems in countries in the early stages of development. The proceedings of the agricultural marketing seminars sponsored by USAID in Jamaica (1959) and in Brazil (1962) are evidence

²⁴The State of Food and Agriculture, 1962, Food and Agricultural Organization of the United Nations (Rome). See also Food Balances for Twenty-four Countries of the Western Hemisphere, 1959-61, United States Department of Agriculture ERS Foreign 86, 1964.

of the general lack of knowledge about marketing conditions and the means for improving markets in Latin American countries.²⁵ Stephen Enke in his book, Economics for Development, says:

Food comes first. Only after a country has satisfied its essential food requirements, unless it has something to export, can it start producing anything but the most necessary manufactures.²⁶

Robert Stevens has concentrated on a slightly different problem associated with food production in developing nations. He examines income elasticities of demand for food in several developing nations. He notes the rate of population growth and points to the necessity for increasing food production in order to keep pace and provide a surplus for development. He carries the analysis further to examine some of the possible effects of a rapid increase in the demand for food as development gets under way in an economy with high rates of population growth. Stevens finds relatively high income elasticities in the nations studied. His estimates place income elasticities of between 0.4 to 0.6 for

²⁵ Development of Agricultural Marketing and Cooperatives in Latin America and Caribbean, Report of a seminar held at Kingston, Jamaica, November 2-13, 1959, International Cooperation Administration. See also Marketing, Storage and Processing of Agricultural Products, Report of a seminar held at Rio de Janeiro, Brazil, 1962, sponsored by the Government of Brazil and the U. S. Agency for International Development.

²⁶ Stephen Enke, Economics for Development (Englewood Cliffs, New Jersey: Prentice Hall, 1963), pp. 26-27.

net total food consumption with the higher figure "more likely at low per capita income levels."²⁷

Stevens suggests that such a high income elasticity, coupled with the rapid rural to urban population shift and rising incomes which prevail in early stages of development, could place a great deal of pressure on the food marketing systems of developing nations. This pressure could cause inflationary food prices.

George Mehren cites further positive support for an emphasis of food and food processing activities as centers for economic development. Yet, he notes that many areas are not using the known technologies and procedures which have proven profitable.²⁸

Possibly the earliest study which could be interpreted as being concerned with the role of food marketing in economic development was the Galbraith and Holton study Marketing Efficiency in Puerto Rico.²⁹ In 1949-1950, the Puerto Rican food retailing system was "atomistic" and one in which price competition was not practiced since merchants

²⁷ Robert D. Stevens, Elasticity of Food Consumption Associated with Changes in Income in Developing Countries. Foreign Agriculture Economic Report #23 (Washington, D. C., U. S. Department of Agriculture, 1965), p. iv.

²⁸ George Mehren, "Marketing Organization and Economic Development," Journal of Farm Economics 41(5) December 1959, 1307.

²⁹ John K. Galbraith and Richard Holton, Marketing Efficiency in Puerto Rico (Cambridge: Harvard University Press, 1954).

thought their demand curve was relatively inelastic. Credit was extensive at all levels of the food distribution system. To the extent that margins could be reduced through efficiencies, the poorest consumers would not need to spend as much money on food and thus could use it to buy other consumer goods. As a result of modeling a system of food distribution, Galbraith and Holton recommended certain policy changes. Most of their recommendations were implemented over the next few years by the Puerto Rican government and private individuals.

The Latin American Food Marketing Study

As mentioned in the Foreword, this thesis is a part of the Latin American Food Marketing Study, which has five specific objectives. Dr. Charles Slater clearly laid out these objectives in a speech in September 1965:

1. To measure and analyze the changes that have taken place in the food marketing system serving the San Juan and Mayaguez areas of Puerto Rico over the past fifteen years;
2. To describe and analyze the food marketing system of a second major market area, such as a city in Latin America;
3. To identify critical marketing problems and to evaluate alternative means of improving the marketing system;
4. To develop research methodologies useful in appraising marketing problems;

5. To draw inferences and formulate hypotheses concerning the role of food marketing in countries in the early stages of economic development.³⁰

In addition, Dr. Slater acknowledged the usefulness of the Galbraith and Holton report and other statistical information, which would serve as a benchmark against which one could measure the food marketing system as it existed in 1965. Slater further outlined some fundamental propositions. He hypothesized that economic growth can be fostered by reduced or more stable food prices, increased velocity of capital can make the same amount of money do more work when risks are lowered through better market integration, and new market entrants may reduce margins and enhance countervailing power.³¹

Innovations and Social Change

In many of the studies cited above, it is suggested that economic development cannot take place unless some people change. This section is primarily devoted to identifying reports of research into how such change is brought about.

A Theory of Social Change

E. E. Hagan, an economist, was troubled by what he perceived to be the inadequacies of the explanations contained

³⁰Charles C. Slater, "The Role of Food Marketing in Latin American Economic Development," Proceedings of the 1965 Fall Conference of the American Marketing Association (Chicago, 1965), pp. 31-32.

³¹Ibid., p. 34.

in various economic theories of development. His experience in Burma led him to look for a better explanation of the growth process. Early in the book, On the Theory of Social Change, he spells out his dissatisfaction with the capital accumulation approaches of some previous economists.

They all assume that the central problem in growth is capital formation and they all assume that sufficient technological creativity to carry forward economic growth is present in all societies. Now it is clear beyond any question that technological creativity is responsible for a far greater share of increase in productivity than is capital formation.³²

One could suggest that Hagen has chosen to follow some of the ideas laid out by Schumpeter. Along with Schumpeter, he believed that change starts when a person becomes dissatisfied with society and wants to reform it. This person, the innovator,³³ is open to new phenomena, and he believes previously unnoticed aspects of the world are meaningful and knowable. "He trusts his evaluations of the world. The prospect of resolving a problem therefore attracts him." Anxiety is common and creates a "gnawing feeling that the (innovator) is not doing enough,

³²Everett E. Hagen, On the Theory of Social Change (Homewood, Illinois: Dorsey Press, Inc., 1962), p. 49.

³³The person who organizes "reality into relationships embodying new mental or aesthetic concepts. And further innovation involves two steps: Arriving at a new mental conception and converting it into material form." Ibid., p. 86.

or well enough. Repeatedly, they escape from their anxiety temporarily by creative achievement."³⁴

In order for the innovator to reveal himself, Hagen feels it is necessary for a disturbing event to occur. After it does, respect from "significant others" is withdrawn, and the group, of which the would-be innovator is a member, finds himself without the desired amount of status. When there is withdrawal of respect, there are several avenues open to the individual or the group of which he is a part, "he may become ritualistic, retreatist, innovational or rebellious."³⁵

It is evident that many of the seeds of Hagen's ideas are in H. G. Barnett's landmark book, Innovation: The Basis of Cultural Change.³⁶ Barnett suggests that the innovators are the dissident, the dissenters, the indifferent (those to whom customs are not important), the disaffected (those who have experienced major crises), or the resentful. While they both say that one finds innovators among these groups, neither one of these authors explains why some and not all among these groups become innovators.

³⁴Ibid., p. 86. In the theme popularized by Festinger, the innovator has lowered his cognitive dissonance.

³⁵Ibid., p. 198.

³⁶H. G. Barnett, Innovation: The Basis of Cultural Change (New York: McGraw Hill, 1953).

That very important next step of locating which individuals or which type of individuals are most likely to create the change or be the innovators, has been discussed rather extensively in the sociological specialty of the study of diffusion of innovations. One of the foremost authorities in this field, Everett M. Rogers, has devoted ten years of research to the study of innovations and the people involved with them. His 1962 book, Diffusion of Innovations, is primarily a summary of the findings of various studies, combined with insights and suggestions both for change agents and further research.

Diffusion of Innovations

Most of the studies cited by Rogers come from interviews with farmers. In a 1966 Bibliography, Rogers cites 708 empirical reports of innovation studies. Only 25 of these studies concern marketing or general economics. Still, many of the ideas gleaned from the agricultural respondents should provide some insight in marketing institutions. For instance, Rogers talks of innovators as deviants. He notes that, almost by definition, the innovator is a deviant from the society in which he lives. However, deviation is a matter of degree and is related to the social system toward which one has reference. Rogers talks of predicting innovativeness as one would predict such things as academic success, juvenile delinquency, and so on. One method which

seems to have some promise is multiple correlation. Rogers notes that ten studies have used multiple correlation methods for predicting innovativeness. These ten studies explain between 17 and 56 per cent of the variance in innovativeness on the basis of independent variables considered. All of the studies in which more than 30 per cent of the variance was explained have some combination of economic and sociological variables.³⁷

Rogers admits that much of the research reported in his book tends toward "raw empiricism." While admitting to the necessity for empiricism, he does attempt to build a theoretical base for the diffusion and adoption of innovations. He suggests that adoption depends upon antecedents having to do with the individual's identity of himself within his social system, as well as the perceptions of that individual in his environment. Within these antecedents, Rogers suggests that information sources bombard the individual and make it possible for him to learn more about innovation. These perceptions of the individual, on the other hand, are primarily of external characteristics, such as the norms of the society, economic constraints, incentives, and the characteristics of the institutional arrangements. On the basis of this evaluation, the individual decides whether or not to adopt the innovation.

³⁷E. M. Rogers, Diffusion of Innovations (New York: The Free Press, 1962), Table 10-1, p. 288.

A pertinent question is, "Why all the concern about innovation?" Zimmerman says that a willingness to accept innovations is a precondition to economic progress.³⁸ Also, in a most interesting and useful review of economic theories of innovation by the U. S. Department of Agriculture, Agricultural Markets in Change, the following summary appears:

Most economic writers agree that innovations are important to both supply and demand. They are cost-saving if they raise output with a given input. They will not be adopted, however, unless the expected reduction of costs justifies them, that is, there is a chance for greater profits.³⁹

Furthermore, Robert W. Solow, an economist, put to empirical test some of the theories of development. He noted that capital formation explains little of the increased output in the United States.⁴⁰ Thus, he agrees with E. E. Hagen who, as a result of his research in other nations, concluded that capital formation was not sufficient. Technical progress, i.e., innovations, accounted for more of the increased output per man hour. Even among economists there is growing acceptance that variables other than capital formation are important in explaining the growth process.⁴¹

³⁸L. J. Zimmerman, op. cit., p. 157.

³⁹Marketing Economic Division, U.S. Department of Agriculture, Agricultural Markets in Change, Agricultural Economic Report 395, Economic Research Service (Washington, D. C., July 1966), p. 31.

⁴⁰Robert M. Solow, "Technical Change and the Aggregate Production Function," Review of Economics and Statistics, 39 (August 1957), 312.

⁴¹Benton F. Massell, "Capital Formation and Technological Change in United States Manufacturing," Review of Economics and Statistics, XLII (2) (May 1960), 182.

The Centrality of Exchange

A broader view of what Rostow calls "the national market" (one that moves beyond rural-urban linkages in general and beyond food in particular) has been fostered by Cyril Belshaw, an anthropologist. He urges that exchange is crucial to economic development because it is the basis of all society. Furthermore, he asserts that anthropological data indicate: (1) most societies are achievement oriented, (2) there is enterprise, (3) there is investment and (4) there is maximization. The task of modernization is to harness the above principles to new institutional complexes and to put them to work in an altered context.⁴² His basic position of economic development is that there must be alteration in the system of exchange. Relationships in exchange must expand and become more complex.

But alteration of institutions or of the persons who participate in those institutions is not simply a mechanical process. If relationships expand and become more complex, new ways must be introduced. Some people have called these new ways innovations. Thus, we find an anthropologist who has related the social scientists' interests in innovation to those of the economists in development. Belshaw gives the reader a first approximation of the importance of exchange in development.

⁴²Cyril S. Belshaw, Traditional Exchange and Modern Markets (New York: Prentice Hall, 1965), p. 110.

Review of Literature Summary

Classical and neo-classical economists appropriately have concerned themselves with the results of specialization as a necessary aspect of economic growth. Beginning with Schumpeter and Keynes, there appears to be a growing awareness of causes of economic development in terms of innovation in relation to technical change. In addition, Keynes considered the changes in effective demand. With the notable exception of Rostow, there seem to be few economists who are concerned with the institutions and instruments of exchange as causative factors in economic growth. Even among those who have studied marketing, there is a diversity of opinion as to the possibility of marketing institutions or the process of exchange playing a leading role in economic development.

On the other hand, the social process, within which the process of exchange is considered by various academicians, leads to the study of the role of innovation. Such investigations of innovation complement the economists' studies of institutions and specialization in terms of better understandings of development.

However, it is evident that not enough attention has been given to the process of exchange. There have been few empirical studies of either the institutions or the people in the exchange process. Furthermore, at a time when population growth is outstripping food supply, there

has been relatively little attention to that basic element in exchange: the distribution of food. It is the purpose of this thesis to look at food marketing in economic development in Puerto Rico, an area where rapid development has occurred.

Plan of the Thesis

The present chapter has reviewed the economic and social science literature relative to economic development and the role of marketing⁴³ in that development. It reveals that more research effort on the systems of exchange may be rewarded with better understanding of how to accelerate economic development.

Chapter II presents a description of the research methodology and describes where the research took place. Included in the chapter are the specific questions to which the thesis is addressed, as well as the specific hypotheses which will be tested.

Chapter III is an attempt to explicate a historical view of what happened in Puerto Rican food distribution from 1950-1965 in relation to the more general field of accelerated development. This chapter is a word picture of what happened and why.

⁴³Throughout this thesis the terms marketing, distribution, and exchange will be used interchangeably even though the author recognizes that some readers will suggest that marketing is a broader term. The term "marketing" is used sparingly because of the connotations of high-pressure salesmanship and "flim-flam" it carries for many.

Chapter IV deals with the economic variables of the changing food distribution picture in Puerto Rico. A considerable number of tables will be presented in that chapter, quantifying the process described in Chapter III.

Chapter V is concerned with the sociological variables of the changing food distribution system. In this chapter an attempt is made to determine the "type" of person who brought about change. Some ideal types of persons and institutions are described.

Chapter VI offers conclusions and recommendations, and attempts to integrate the review of the literature of Chapter I and the general questions posed in Chapter II with the empirical findings of Chapters III, IV, and V. In the appendices are detailed descriptions of the history of the project of which this thesis is a part, and of the sampling procedures, copies of the survey instruments for consumers and retailers, and a factor analytic matrix.

CHAPTER II

RESEARCH METHODOLOGY

Scope and Purpose of the Study

As noted in chapter I, in countries in the early stages of development marketing has received relatively little attention from economic planners and technical assistance experts. There is a wide range of opinion concerning the role, if any, of marketing in economic development.

To a great extent, the role of marketing is an empirical question that can be investigated. One specific area that lends itself to empirical research is the marketing of food products. This is a particularly appropriate area of research at this time because food supplies have not kept pace with population growth. Some data seem to indicate that producers increase production as they gain assurance about what quantity is needed and some assurance that prices will remain at acceptable levels.

The Setting

One of the first empirical studies of the role of distribution in economic development was published from

field work done in Puerto Rico from 1949 through 1952. This makes it a very desirable place to study the role of market institutions in economic development. The study, Marketing Efficiency in Puerto Rico, by John K. Galbraith and Richard Holton, provides an effective benchmark for a 1966 study of the same geographical area. In the 20 years between 1940 and 1960, real per capita income tripled, yet the 650 persons per square mile spread over this mountainous island in the Greater Antilles make it one of the more densely populated areas of the world.

Today there are those who would deny the applicability of Puerto Rican experience to other areas of the world, since Puerto Rico has had special considerations. But one can speak of special considerations only ex post; what counts ex ante is merely the subjective judgment of man. Unless man is viewed at least partially as the creator of his own environment, a theory of economic development is not possible.¹

Puerto Rico is one of the few communities in which there has been a strongly reform-minded government which has undertaken a planned action program as an outgrowth of formal studies of its distribution system. It is one of the few areas where rapid change in the distribution system has not resulted in intense political repercussions.

Thus, this thesis is a case history of an area

¹L. J. Zimmerman, Poor Lands, Rich Lands: The Widening Gap (New York: Random House, 1965), p. 108.

where much change has occurred, where benchmarks have been made by the studies of the early fifties, where documentation is relatively good.

Core Objectives

This thesis is concerned with the retail food distribution system in Puerto Rico for the years 1950 to 1965. As a building block in the total picture of the role of marketing in economic development, its goals are: (1) to describe accurately what happened in food retailing from 1950-1965; (2) to investigate and explain the process by which change occurred in the Puerto Rican food retailing sector during a period of directed and planned development; and (3) to understand better the variables correlated with innovativeness as well as multi-variate correlates of the innovative process.

These three broad objectives will be pursued in order to shed light on some critical questions of the role of marketing in development. Some of the questions which seem particularly critical at this time include:

1. How can W. W. Rostow's ideas of a "national market" be operationalized? That is, how does one measure the amount of a "national market" that exists in a given area? What type of recommendations are needed for making more of a national market in a given geographical area?

2. How can it be determined if improvements in exchange or changes in the distribution system accelerate development?

3. Can changes in the distribution of food accelerate development? If so, is the acceleration due to reduction of risk, is it brought about by countervailing power, or is it because more products are moving through the system?

4. Has the food distribution made a significant contribution to economic development in Puerto Rico?²

²All of these questions could imply a mechanistic view of the world. Such is not meant to be the case. The author believes that each of us imposes structure upon reality. That is, we each have our own perceptions of reality, which may or may not be a correct and proper way of viewing reality. Some psychologists have suggested that one's view of reality is always biased. Kenneth Boulding in The Image has implied that complete objectivity is never possible. The researcher's view of reality influences the planning by limiting, to some extent, the variables he chooses to look at. One's view of reality also influences the analysis and recommendations made on the basis of the facts given.

The author subscribes to the view of Joel Bain who, in his book Industrial Organization, states (p. 459) general goals of public economic policy:

Most citizens will probably agree that the primary general aim of government economic policy in the United States should be to promote a good overall performance by the economy as a whole, in the sense of fostering an optimal level of aggregate material welfare for the populace. The good overall performance to be sought will generally embody: (1) a high or "full" level of employment of productive resources, including labor; (2) an efficient use of employed resources in production, leading to a maximization of the value of aggregate output obtained from the employed resources; (3) reasonable stability of aggregate employment over time, or freedom from undue fluctuations in economic activity; and (4) a reasonably high rate of progressiveness, as reflected in the growth of the value of aggregate output per unit of resources employed.

Method of Analysis

This thesis explores the role of food marketing during a time of rapid economic development of Puerto Rico. The aggregate statistics published for the entire island are examined for the years 1950 to 1965. But, in particular, the study is focused upon the two cities of San Juan and Mayaguez for the following reasons. The cities have had vastly different rates of growth. Between 1950 and 1960 the San Juan standard metropolitan statistical area increased in population 26 per cent, while the Mayaguez standard metropolitan statistical area decreased 4 per cent. In addition, there is some indication that income changes in the two areas are considerably different. Thus, while little difference was shown between the median levels and the changes over this period, the distribution of income is more concentrated in San Juan.

Analysis

The analysis presented in the next three chapters employs three different but complementary approaches. In this way, it is hoped to understand better the numerous changes occurring in food distribution as they can be related to the problem in processes of economic development. First, a historical description of the change will be presented. Chapter III draws heavily upon secondary source of data from both official and non-official sources. At the end of the chapter certain observations are made.

Chapter IV, in the area of institutional economics, is devoted to an economic analysis of factors influencing and being influenced by the changes in retail food distribution. There are discussions concerning those variables that affected the behavior of consumers, the changes in prices and wages, and the changes in the retailing of food. This and the fifth chapter depend heavily upon special surveys which were conducted as part of this research program. In Chapter V, sociological research methodology is used to determine the explanations for criteria for retailing innovativeness. Depth interviews with the largest firms, coupled with the results of earlier sociological studies, were used to develop measures of those variables associated with growth and innovativeness. Surveys of medium- and small-size firms allow testing of certain key hypotheses. The statistical procedures are designed to seek the most economical explanations for change in marketing behavior. In Chapter V, successively more sophisticated statistical techniques are employed in order to explain behavior of market participants. These statistical techniques begin with zero order correlations, move to multiple correlations, and finally present a factor analysis of the behavior of market participants. The sixth chapter presents a summary of conclusions and recommendations.

The hypotheses to be tested by the survey data are given below.

Hypotheses to be Tested

The hypotheses to be tested are divided into two groups, the ones concerned with the economics of improved retailing, and the ones having to do with the sociology of improved retailing.

1. As an economy experiences increases in real income, an increased per cent of food consumed will move through commercial market channels.

2. Employment effects of food retailing changes are two-edged. There is more employment as a result of the greater percentage of food moving through the commercial market channels, but there is less employment as a result of efficiencies introduced.

3. Food retailers' gross margins will tend to rise as more functions are performed by these retailers. But food retailers' gross margins will tend to fall as innovations are adopted by the less traditional operators and as the size of stores increases.

4. Families with high incomes shop at the supermarket to a significantly greater extent than those with low incomes.

5. Food prices of basic commodities are lower in supermarkets at a given point in time than in the smaller stores.

6. Sales growth will be correlated with modern attitudes of managers.

7. Nationality will be correlated with innovativeness; Puerto Ricans will be negatively correlated with innovativeness in contrast with people not native to the island, who will have positive correlations.

8. Supermarkets in a developing economy are patronized by a significant percentage of poorer families.

9. The combination of economic, psychological, and demographic variables will explain more of the variance on innovation indexes than has been explained before.³

³Personal

Age
Education
Mobility
Educational achievement for child
Income
Nationality

Attitudes

Modernization
Market progressiveness
Trust
Risk orientation
Hoarding index
Supermarkets have all the business they will get
Government helps influentials
Competition rougher 5 years ago

Communication

Use of mass media
Use of mainland information
Knowledge and use of government service
Political knowledge

Why Others Left Business

Old age
Poor manager
Competition of supermarkets

Economic Behavior of Firm

Years in business
Size of business by license
Dollar sales, 1964
Per cent of sales on credit
City
Neighborhood income level near store
Sales growth
Dollars spent on advertising
Per cent purchases from U. S.
Number of suppliers
Perceived income of customers

The Surveys

Building upon the informal interviews, formal structured interviews were given to the owners or managers of a disproportionate stratified sample of food retailers in the two Puerto Rican communities. Also, there was a survey of consumers in the two communities.⁴

Six field surveys were conducted in Puerto Rico by the Latin American Food Marketing Study. These six surveys of participants in the food marketing system were fielded from December 1965 through March 1966. In each survey, similar questions were asked in each of the four different areas of communications, economic performance, value orientations, and personal demographic information. Specifically, the universes and their respective samples are given below:

<u>Name</u>	<u>Universe</u>	<u>Sample Type</u>	<u>No.</u>
Food retailers	San Juan and Mayaguez SMSA	Random--Disproportionate stratified	140
Food wholesalers	San Juan and Mayaguez SMSA	Random--Disproportionate stratified	64
Consumers	San Juan and Mayaguez SMSA	Random--used sampling frame of Dept. of Labor	387
Farmers	Western region, farms larger than 3 acres	Random--Disproportionate, used sampling frame of Dept. of Agriculture	172
Truckers	Santurce, Bayamon, Rio Piedras and Mayaguez Plazas	Purposive	65
Food Processors	Island-wide	Purposive	30

⁴See Appendix C for the formal questionnaires used with retailers and consumers.

Results of only the food retailer and consumer surveys are discussed in this thesis. Other theses, which were mentioned in the Foreword, as well as reports of the Latin American Food Marketing Study, will discuss the findings of other surveys.

Summary

The goals of this study are: (1) to describe accurately what happened in food retailing from 1950 to 1965; (2) to investigate and explain the process by which change occurred in the Puerto Rican food retail sector during the period of directed and planned development; and (3) to understand better the variables correlated with innovativeness as well as of the innovative processes among retailers of food in a developing economy.

These three objectives were pursued in order to shed light on some critical questions on the role of marketing development.

CHAPTER III

FOOD RETAILING, 1950-1965

Introduction

This chapter deals primarily with the first two of the three objectives mentioned in chapter II. Specifically, an attempt is made to describe accurately what changes occurred in food retailing between 1950 and 1965. Also in this chapter, as well as the next, an attempt is made to understand and explain the process by which these changes came into being, on the basis of the historical evidence.

The "poor house of the Caribbean" had a per capita growth of real income of more than 5 per cent per year between 1950 and 1961.¹ Between 1960 and 1965, that growth rate was even greater.² The food distribution system on

¹Junta de Planificacion de Puerto Rico, Ingreso y Producto Puerto Rico, 1940, 1947-1960 (Estado Libre de Puerto Rico, 1964), p. 7.

²Another measure of the rapid growth is the following statement from Status of Puerto Rico, Report of the United States-Puerto Rico Commission on the Status of Puerto Rico, August 1966. "During the period 1948-65 (there was) an increase in per capita personal income from \$376 to \$900 in 'constant 1965 dollars'." P. 54.

this smallest island of the Greater Antilles, which lies 1,600 miles southeast of New York City and 1,300 miles east southeast of Miami, has also changed greatly in the last 15 years. Some economists contend that perhaps food distribution changes helped bring about some of the change. Puerto Rico is one of the few political areas where the government sponsored studies of food distribution changes and then took action to implement suggested changes.

This thesis concentrates on the time period 1950-65, but the foundations were laid long before the actual changes were noticed. These foundations took the form of related, somewhat consecutive events that began in the political philosophy of the first-elected governor, Luis Muñoz-Marin. His leadership promoted the formation of a Planning Board in 1942 and led to a broad-gauged study by Dr. Harvey Perloff, which was published in 1950. The Perloff study, in turn, encouraged numerous and detailed studies, such as Robert Branson's thesis, "The Structure and Efficiency of Food Marketing in Puerto Rico,"³ and an Agricultural Information Bulletin⁴ on marketing facilities. These studies and field work by the Social Science Research Center of the University of Puerto Rico led to the Galbraith and Holton

³Robert E. Branson, "The Structure and Efficiency of Food Marketing in Puerto Rico" (unpublished Ph.D. dissertation, Harvard University, 1954).

⁴Referred to in footnote #27, p. 57.

report which resulted in the Food Commission hearings, which in turn led to action by Fomento⁵ beginning in 1954 and 1955. These foundations introduced such innovations as the Pueblo Supermarkets and the Central Market in the Puerto Nuevo area. In order to understand better the changes, it is necessary to examine these building blocks of the foundation.

Early Political Influences

As early as the late 1930's and 1940's, the Economics Section of the University of Puerto Rico Agriculture Experiment Station, under the leadership of Dr. Luis Sol Descartes,⁶ published a number of studies concerning food consumption and nutritional levels. The School of Tropical Medicine and the School of Home Economics also were studying the nutrition of the island's people. In late 1940, a study was commissioned by the University's Social Science Research Center. Dr. Harvey Perloff was asked for an objective analysis of the complex economic structure then developing on the island. Perloff's appraisal of the nature and economic possibilities of Puerto Rico was published

⁵Fomento is the Spanish name for the Economic Development Administration. The origins and the work of Fomento are covered in more detail later in this chapter.

⁶Dr. Luis Sol Descartes later became secretary of the treasury as well as noted advisor to high government officials of Puerto Rico.

in 1950 by the University of Chicago in a book entitled Puerto Rico's Economic Future.

Perloff noted in his wide-ranging discussion of Puerto Rico as it existed in 1950 and before, that the expenditures of most Puerto Rican families were limited to the basic necessities. In fiscal 1940, such expenditures equaled 45 per cent of total consumption and, in fiscal 1944, they were 51 per cent.⁷ Perloff also called attention to an earlier study of wage-earner families which showed that 60 per cent of income was being spent for food alone. Still, the diet of many Puerto Rican families was nutritionally inadequate.

Perloff found many problems in the economy, including overexpansion of the number of retail food stores which, instead of lowering prices, really added to the cost of distribution. In 1939, Puerto Rico had 20,000 retail establishments as against Hawaii's 4,000, but there were only 8,000 paid retail employees in Puerto Rico as against 13,000 paid employees in Hawaii.⁸ Another problem which faced the island was its inability to supply its own food needs, even though it was geared to agricultural production. Farm products, sugar, coffee, and tobacco contributed more than 80 per cent of Puerto Rico's total exports. In the 1940's,

⁷Harvey Perloff, Puerto Rico's Economic Future (University of Chicago, 1950), p. 170.

⁸Ibid., p. 180.

42 per cent of the volume and 54 per cent of the value of foodstuffs consumed on the island had to be imported.⁹ As a possible solution, Perloff recommended importing bulk grain and rice and processing them on the island so that end products could be obtained more cheaply. This method would also provide additional employment for local labor.¹⁰

Probably the greatest marketing problem uncovered by Dr. Perloff was the poorly organized agricultural marketing structure. His survey indicated that there was good land available for crops; there were many available workers; and there was a definite need for the crops produced, whether they were intended for export or local use. Food still had to be imported at a very high cost, so he reported the great need for a revamped food production and marketing system within the island. His suggestions included the expansion of public market facilities in urban areas and the establishment of cooperative-type fruit and produce centers in rural regions, which would also provide grading, packing, and storage facilities at strategic shipping and distribution points. He summarizes the situation succinctly:

The important point is that improvements in Puerto Rican agriculture are virtually dependent on the improvements in the agricultural distribution structure, which would narrow the gap between farm price

⁹Ibid., p. 80.

¹⁰Ibid., p. 323.

TABLE 3-1.--Recommended per capita food consumption in Puerto Rico as compared with actual per capita consumption, 1940-41

Food Group	Per Capita Requirements (Lbs. per Year)	Actual Consumption Shown by Wage Earner Study (lbs. per week x 52)
Milk and dairy products (except butter)	581	153
Potatoes, other starchy vegetables, fruits (except citrus)	338	418
Dried beans, peas, nuts	28	63
Citrus fruits, tomatoes	81	25
Leafy greens and yellow vegetables	102	6
Eggs	23	8
Lean meat, poultry, fish	73	41
Flour, cereals (including rice)	190	215
Fats and oils (including salt pork)	47	36
Sugar	47	60

Source: Perloff, Harvey (1950). Puerto Rico's Economic Future. (Chicago) Table 89, p. 172.

and consumer price, reduce waste and spoilage, and generally increase the amount of food reaching the consumer in good condition and at a reasonable price.¹¹

Perloff was, of course, only suggesting but his penetrating analysis, made with so little available data, served as a landmark study for those who followed. Throughout his book, Perloff made projections of the patterns that would need to be operating by 1960 if the people of the island were to achieve some economic advance. These patterns indicated a number of vital relationships which he felt were often overlooked. His description follows:

By following through the logic of the interrelationships it can be seen that the success of an industrial program which requires a solid base of consumer purchasing power, is dependent to a significant degree on the success achieved in raising farm yields, since that is the key to increased food production and real savings in food purchases for the consumers. By the same logic of interrelationships, improvements in the diet of the people are intimately tied to sound land use planning, while the total amounts of income and employment on the island are dependent in large measure upon the success of research, pilot plant and commercial experimentation in developing new crops.¹²

Thus he laid the cornerstone for the forward planning which resulted in many studies and much political action in Puerto Rico.

Political Background

The problems of inadequate diet, high food costs, and a low standard of living concerned not only economists

¹¹Ibid., p. 276.

¹²Ibid., p. 331.

such as Perloff but also the physicians at the Institute of Tropical Medicine. The politicians were also concerned. One politician in particular, Luis Muñoz-Marin, the first elected governor of Puerto Rico, saw the problems in terms of interrelationships, as did Perloff. His campaign slogan, "Pan-Tierra-Libertad" (Spanish for "bread, land, liberty"), indicated his involvement with, and understanding of, the economic situation.

In Poet in the Fortress, Thomas Aitken, Jr., describes Muñoz-Marin's early confrontations with the food problem. In 1932, Muñoz-Marin achieved his first elective post, senator-at-large for the Liberal Party. According to Aitken, in the early part of that year, Muñoz-Marin argued for independence because of the high prices of the foods Puerto Ricans had to import.¹³ Muñoz-Marin said "The North American tariff was set by the North American Congress to protect the interests of the American people. And it will annihilate Puerto Rico obliquely, in passing, almost without thinking, with the brutal innocence of an elephant walking on a colony of ants."¹⁴

Muñoz-Marin also expressed dissatisfaction with President Roosevelt's gubernatorial appointment in 1932:

¹³Thomas A. Aitken, Jr., Poet in the Fortress (New York: Signet Books, the New American Library, Inc., 1965), p. 9.

¹⁴Ibid., p. 97.

"Over and above all these things is the fact that our people are dying of hunger...And in the face of this reality, we are playing politics."¹⁵ The years 1934-1936 were years of frustration for Muñoz-Marin because he was out of office and politically powerless. But, on July 22, 1938, he announced the formation of the Popular Democratic Party, the party which in the future would challenge the power of the wealthy. At an early meeting of the Party, Muñoz-Marin explained the difference between freedom and independence;

Man could not find freedom in political independence alone. He must first be liberated from the binding grip of hunger. He must be relieved of the ubiquity of filth and escape from exposure of semi-nakedness. He must have a shelter safe from rain or the burning heat. His freedom requires a fair chance to live without sickness wringing his intestines, boiling his blood, or throbbing in his head. He needs an opportunity to earn a living and to work without the nagging fear that disease and malnutrition may be debilitating his children. Liberty, if a man is industrious enough, includes a parcel of land on which he may raise some food for his family and, luckily, a bit more to sell. Freedom is being a man, not a beast of burden. When this liberty is won, and only then, can political bonds be challenged as obstacles to liberty. Then independence might mean liberty, too.¹⁶

The Popular Party held its official constituting meeting on July 21, 1940. The party leadership presented a program for approval that evening. It included such things as support for the law limiting corporate land

¹⁵ Ibid., p. 102.

¹⁶ Ibid., p. 130.

owners to 500 acres, a law which had been part of a bill passed in 1900 by the U. S. Congress, but which had been ignored for the most part. It included protection of agriculture and farm rights, a market place for fruit and produce, agricultural cooperatives, and a food commission to reduce the cost of living.

It was believed that the jibaro might again sell his vote for a dollar or two with which he could feed his family for a few days, since empty political promises brought nothing. To combat this possibility, the Popular Party candidates publicly swore that, if elected, they would implement every plank in the Party platform. Their apparent honesty and good faith were rewarded. The elections of 1940, while not a landslide victory, gave the Popular Party 10 senators and 18 representatives, while an opposing party, the Coalition, had 9 senators and 18 representatives. In Ponce, the center of Spanish traditionalism, a well-known patriarch of a wealthy sugar family was defeated by a worker candidate of the Popular Party. For his own part, Muñoz-Marin received the largest vote of the candidates for senator-at-large, which assured his election as president of the senate.

As senate president in the Puerto Rican government, Muñoz-Marin was the third most powerful political leader in Puerto Rico. The most influential was the presidentially

appointed American governor, and the second most influential was the resident commissioner from Puerto Rico who served in Washington.

At the opening of the legislative session, February 10, 1941, Aitken quotes Muñoz-Marin as saying:

The land problem was specifically discussed before the people. The people were asked if they wanted the breaking up of concentrated land holdings... The people were clearly told that on their votes depended the decision as to whether this land policy be followed or not... The resolve to lower the price of staple foods and raw materials was explained to the people. The people by their votes directed that this policy be followed... There was expressed the intention to establish general minimum wage legislation... The people, by their votes, directed that this policy be carried out... For these purposes, and subject to these orders, the people have elected us. Here we are.¹⁷

Using his position to remind the senators to make good on their campaign promises, Muñoz-Marin made the years of 1941 and 1942 very productive ones for Puerto Rico's economic future. It was during this time that the Water Resources Authority, the Communications Authority, the Puerto Rico Industrial Development Company, the Government Development Bank, and the Land Authority were established. The Puerto Rican Planning Board was set up to coordinate these other agencies.

At this same time, World War II had a great effect on Puerto Rico's economy. Since grains for alcohol were finding war uses and imports of Scotch were cut off to the

¹⁷Ibid., p. 154.

United States mainland, Puerto Rican rum found wide, though grudging, acceptance. Prices rose for this product, as well as for two other products of the island, sugar and tobacco. The excise taxes collected by the federal government were turned back to the island treasury, giving the insular government \$160 million above its budget. Certainly the dollars spent by the armed forces on the island also added to the revenues of the island's citizens and government. This same prosperity reached into the other countries of Latin America:

Argentina's coffers were swollen from sales of wheat, other cereals, and meat. Brazilian millionaires became almost as numerous as her coffee beans. Venezuela fattened on oil exports. Colombia, Peru, Mexico, Cuba, Uruguay, every Latin American country, had food and raw materials to sell to a buyer who was almost unconcerned about the price. Many of those who have called the open American marketplace a special advantage for Puerto Rico have had short memories for the years when the Allies were insatiable buyers for nearly every product all Latin America could offer... Muñoz-Marín and his team insisted on reinvesting the government surplus in a program of social projects to build the spirit, the health, the education, and the working capacity of the Puerto Rican people. They also initiated a program of industrial development to provide postwar employment. Most Latin American nations concentrated the benefits of their gains within a limited sector of wealthy families who used the new wealth to buy land, political influence, and the protection of a series of praetorian guards for captive government.¹⁸

Aitken goes on to point out that in some of the other Latin American countries, "The man with the hoe was forgotten-- until the day he should exchange it for a gun."¹⁹

¹⁸Ibid., p. 161.

¹⁹Ibid., p. 162.

In 1944, prior to the Popular Party convention, Muñoz-Marin had a long talk with an American visitor, Ben Dorfman, a tariff expert who had worked on plans for the economic separation of the Philippines from the United States and who was engaged in a study of Puerto Rico's economy. Dorfman pointed out that Puerto Rico and the Philippines would produce similar products for sale on the American market. Since the Philippines had more natural resources, their products could be sold more cheaply. He explained to Muñoz-Marin that an independent Puerto Rico competing with the Philippines for the American market would starve. Dorfman met Muñoz-Marin's every remark by relentlessly "cutting back his arguments with the facts of American international obligation and Puerto Rico's limited resources."²⁰

In 1945, Muñoz-Marin spelled out in the San Juan newspaper, El Mundo, his philosophy and his thoughts about where Puerto Rico was going. There, for the first time, he talked of the Commonwealth in fairly clear terms. In June of the next year, he wrote two articles for El Mundo called "New Solutions for Old Problems."²¹ In these articles, he defined liberty and the contrasting forces pulling on it.

²⁰Ibid., p. 169.

²¹Excerpts of these two articles appear on page 178 of Aitken's book.

He wrote that man must first of all be free from the fear of hunger. Then he could have the liberty to govern himself. Thus, the motto of the Popular Democratic party became "Pan-Tierra-Libertad," which implied sufficient food at reasonable prices, land reform, and liberty for all. On July 25, 1946, the presidentially appointed Governor Tugwell, who had worked so closely behind the scenes with Muñoz-Marin, handed in his resignation. Then, in 1947, the United States Congress accorded Puerto Rico the right to elect its own governor beginning in 1948. The congressional resolution of approval of the Commonwealth of Puerto Rico²² in its associations with the United States was signed into law by President Truman on July 3, 1952. Finally, on July 25, thousands of Puerto Ricans watched Governor Muñoz-Marin raise the flag of Puerto Rico.

As mentioned previously, Muñoz-Marin was more than a politician. Before achieving the commonwealth status, it was Muñoz-Marin's leadership that resulted in the formation of the semi-independent agencies which so contributed to the development of Puerto Rico. All the agencies established in 1941-42 survived the tumultuous years of development. However, the Puerto Rico Industrial Development Company (PRIDCO), which was charged with setting up and oper-

²²Commonwealth with the United States is a unique relationship. Puerto Ricans are U. S. Citizens. Puerto Ricans pay taxes only to the Puerto Rican government. They do, however, have free access without threat of tariff, to the entire United States market. On the other hand, American ships are permitted to haul cargo to Puerto Rico.

ating a few government-owned industrial plants, did not satisfactorily meet the needs of the situation. As Theodore Moscoso, the first and up to that time only head of PRIDCO, said:

We soon became aware, however, that government had neither the financial nor human resources to establish and manage the thousands of factories which were required²³ to raise the standard of living of our people...

Thus, in the late forties, some new ideas were tried. There emerged a new semi-independent agency called, in English, the Economic Development Administration. In Spanish, it was referred to by the more popular, "Fomento." PRIDCO then became the financial arm of Fomento.

Moscoso's comments about the formation of the Fomento agency are also most enlightening:

When I began to experiment in development work in Puerto Rico, it was far from a recognized discipline. We called it Fomento, which is generally translated as development. But the two words do not mean the same thing, and the difference in connotations may hold some lessons for us today. Development is generally associated with a variety of social and economic objectives...Fomento has an earthier ring. Its origin was the political decision of Governor Luis Muñoz-Marín to make a massive attack on stagnation in Puerto Rico and to convert the island into a socially healthy and economically prosperous community. The work of Fomento... was made possible by the Governor's success in protecting us "fomentarians" with the shield of his political leadership.²⁴

²³Teodoro Moscoso, "Industrial Development in Puerto Rico," in Methods of Industrial Development, eds. Albert Winsemius and John A. Pincus (OECD, 1962), p. 101.

²⁴Gove Hambridge (ed.), Dynamics of Development (New York: Frederic A. Praeger, Inc., 1964), p. v.

Fomento had many tasks. In general, it was the primary agency for bringing about a rapid economic development of Puerto Rico.²⁵ It is best known today in the United States for its very successful industrial development program. A part of this program was the implementation of the Governor's Food Commission report. The philosophy underlying this implementation was to provide the island with a balanced competitive scene.

First Attempts to Change Food Retailing

A part of the Puerto Rican government's concern with development lay in improved food distribution. The island government had been searching for a cheaper and better method of food distribution. This search was one evidence of Muñoz-Marin's concern for pragmatic implementation of political promises dealing with real problems facing the people. One approach to "Pan-Tierra-Libertad" was the government-sponsored PRACO stores of the late 1940's. Though they were not successful, possibly because they were not knowledgeably managed and the people were not ready for self-service stores, the PRACO experiment gave the Puerto Ricans an introduction to the super-

²⁵ A more complete description of Fomento and its predecessor agency, PRIDCO, is contained in William H. Stead, "Fomento--The Economic Development of Puerto Rico," Planning Pamphlet 103, National Planning Association, Washington, D. C., March 1958.

market operations that followed in the fifties.²⁶ And the failure also paved the way for additional studies, which will be dealt with in the following section.

Recommended Marketing Reforms
in the Early Fifties

Early in 1949, Governor Luis Muñoz-Marin requested the assistance of the Marketing and Research Facilities Branch, Production and Marketing Administration, U. S. Department of Agriculture, in undertaking a study of the marketing facilities and distributive system of Puerto Rico, with special emphasis on the needs of metropolitan San Juan. The study began in the fall of 1949. A preliminary statement covering the major marketing facility problems of the San Juan area was presented to the government of Puerto Rico at an informal meeting during July 1950. In December 1950, a preliminary report was presented in a series of meetings to government agencies and private individuals and firms interested in the market. This report noted that:

The primary defects in the San Juan facilities for handling food and related products are: (1) the lack of sufficient warehouse facilities at ship-side; (2) the splitting of market operations among several market areas; (3) the excessive costs of cartage, deterioration and spoilage; (4) the absence of a suitable livestock market with the necessary slaughtering and processing facilities for

²⁶ An interesting and detailed story of the PRACO stores is included in Robert Branson's thesis, which was cited earlier.

the proper handling of animals, particularly of heavier weights; (5) the lack of grain storage, feed mixing, and milling facilities for the efficient handling of imported grains and the lack of utilization of the various commodities produced on the island that could be used in mixed feeds; and (6) the need for vegetable oil extracting facilities.²⁷

To correct these deficiencies, the report recommended that facilities be constructed for a wholesale produce market, that a slaughtering and meat processing plant be established, and finally that grain storage, feed mixing, and vegetable oil extracting facilities be established in the same area as the produce market and livestock slaughtering plant. The report recommended that each of these be built to a specific size and in the same general area. About 79 acres of land would be required, which should be located in a given area immediately southwest of the mouth of the Martin Peña Channel. It is interesting to note that today in Puerto Rico there are grain storage facilities and a new market area for wholesale operations located in that area. The bulk grain storage is owned by private owners, while the Puerto Nuevo Central Market is government-owned and rented to private businessmen.

Another aspect of the food problem, that of actual retailing, was the subject of a study done by Robert Branson.

²⁷U. S. Department of Agriculture, Marketing Facilities for Farm and Related Products at San Juan, Puerto Rico, Agriculture Bulletin No. 60 (Washington, D. C., June 1951), p. 1.

A group of professors from Harvard University had been invited by the Social Science Research Center of the University of Puerto Rico to do a study of food retailing and wholesaling on the island. Branson, a doctoral candidate from Harvard, was hired by the group to do some of the necessary research. At the same time, Caleb Otten, of the U. S. Department of Agriculture, was studying food warehousing and distribution, and so the two men were able to use some of the same survey work and integrated their research to some extent.

Branson undertook detailed study of the economics of Puerto Rico's food distribution in 1949 and 1950. One of his conclusions was that there were too many retail and wholesale firms for proper return and efficiency. A second conclusion was that credit as it existed in the food distribution business was doing a terrible disservice to the island:

At present, rightly or wrongly, a considerable part of the burden of feeding the economically destitute in Puerto Rico is being born by the food marketing structure, in the form of overextension of credit to these groups. This larger aspect of retail store credit will eventually have to be faced in terms of policy issues which extend beyond the confines of the food marketing structure itself. It is sufficient to mention the inherent ramifications; some consideration will have to be given to this problem later.²⁸

²⁸Branson, op. cit., p. 182.

Branson found that retailers needing capital acquired it by using their credit with wholesalers, rather than by borrowing from a bank. Consequently, their ability to participate in competitive purchasing was severely restricted, and partly due to this, food prices to the consumer remained high. One of the reasons for this was the high bank interest rates resulting from a lack of venture capital in Puerto Rico. Those who owned capital on the island avoided risky investments.

Branson, through a description of the economic conditions prevailing in food retailing and wholesaling, laid the foundation for the Galbraith and Holton study with its detailed recommendations for change in the food distribution system.

The Galbraith and Holton Report

Branson's analysis provided much of the necessary data. What was needed now was a theory based on this data that could be put to work. Richard Holton and John Galbraith were called upon to do the analysis and make policy recommendations. One of Holton's major concerns in the report involved a model food system, comprised of the optimal retail unit, the optimal wholesale unit, and an estimation of the saving that could result if the food system were rationalized. Among Galbraith's contributions was the suggestion that specific policy measures be developed for improving

the efficiency of the marketing system through consumer and retailer education as well as by direct steps, such as supermarkets in urban areas, and cooperatives in rural areas. The report served as a basis for the Food Commission report to Governor Muñoz-Marin. All of the suggestions made by Galbraith in 1954 in chapter 15 have been implemented.²⁹

According to the 1950 census, there were 2,210,703 persons in Puerto Rico served by 16,747 retail food stores. The Census of Business reports that these people bought \$109,112,100 worth of food at retail stores. There was one grocery store for every 156 inhabitants. This compares to one grocery store for every 396 inhabitants in the United States as long ago as 1929, and one store for every 581 persons by 1954.³⁰

In 1948, in the United States as a whole, food stores averaged sales of \$62,062.³¹ The Puerto Rican census reports that only 6,569 of the 16,747 establishments recorded more than \$3,000 gross sales for the year 1949. However, those 6,569 stores sold \$97,922,900 of

²⁹Galbraith and Holton, op. cit., pp. 185-198.

³⁰Earl H. Brown, "An Economic Analysis of Bantams and Conventional Convenience Food Stores" (unpublished Ph.D. thesis, Michigan State University, 1961), p. 14.

³¹U. S. Census of Business, Vol. 2, 1948, pp. 10 and 11.

the total \$109,102,100 retail food sales. Thus, even the larger stores averaged only \$14,907 in sales annually, far less than the U. S. average.

The independent Galbraith and Holton study of food retailing, made in 1950 before the census results were available, was based upon an island-wide sample of 425 food stores and 52 fruit and vegetable stores. This study excluded the street vendors and other specialized businesses that were covered in the census. In addition, they omitted stores that had less than \$1,000 annual sales. Still, the average sales per store was only \$24,000 a year.³² Even in this study which looked at the larger food stores, one can estimate that more than 50 per cent of those stores had less than \$600 per month gross profit³³ out of which all expenses including wages were to be paid. There were few, if any, retailers getting rich on profits from their small stores.

Purchasing food on credit was almost universal in Puerto Rico in 1950. Between 40 and 80 per cent of the total sales were on credit.³⁴ Credit was even more pronounced among stores who catered to high-income families.

³²Galbraith and Holton, op. cit., Table 5, p. 17.

³³Calculated on the basis of 30 per cent of \$2,000. Table 3-2 shows that actual margins were lower than this.

³⁴Galbraith and Holton, op. cit., p. 20.

There 75 to 100 per cent of the sales were on credit. With these high-income families, telephone ordering was frequently done.

On the other hand, delivery service was less common. None of the stores in the rural areas reported offering delivery service. This, too, was a service for high-income families.

There was a large concentration of total retail store sales in canned goods and staples, and purchases at food stores were supplemented by consumers shopping at the plazas mercado (old Spanish-style central market places) and buying from street vendors. Sales per employee, as well as per customer, were low for most food stores. Finally, the great number of stores contributed to the slow turnover of goods for the individual store. Entry into the food business was relatively easy because wholesalers provided credit.

In 1950, a retailer who purchased a given line of commodities from three or less suppliers was considered by Galbraith and Holton to have "few suppliers." A store with a complete line (staples, canned goods, fruits and vegetables, and meats) could have as many as 12 suppliers and still be considered to have "few" suppliers according to the classification of the 1950 study. Most retailers purchased from more than 12 wholesalers. In fact, the Branson survey, which was reported in the Galbraith and

Holton book, indicated that 195 out of 422 firms had more than a dozen suppliers. In addition, more than 50 per cent of the group of stores that had less than a dozen suppliers were stores of less than \$1,000 a month in sales.

Food retailers in 1950 had very much of a "live and let live" philosophy. There was no advertising. There were no special price sales. Food store operators believed that the market was of fixed size and that advertising or cutting price would only hurt themselves and/or their friends who operated other food stores.

Detailed estimates of expenses were obtained in 1950 by Branson from 229 retail stores. A summary of those studies is shown in Table 3-2. Because of the lack of accounting information among small stores, the sub-sample of 229 was biased toward the larger stores. More specifically, the average annual sales reported in the special survey were \$32,376. The distribution was highly skewed, and 95 per cent of the firms sold less than \$24,000 annually. Table 3-2 shows little difference in gross margins among stores of differing sizes, but net profit for the larger stores was double that of the smaller. Selling costs and rent were lower for the larger stores.

Other Reports

In 1950, virtually all the fruits and vegetables moving to urban centers in Puerto Rico were purchased by

TABLE 3-2.---Gross and net margins and operating expense ratios for retail food stores, by sales class, 1949, Puerto Rico

	Annual sales (dollars)								Average
	From to	0	6,000	12,000	24,000	48,000	120,000	240,000	
Less than	6,000	12,000	24,000	48,000	120,000	240,000	480,000	960,000	
Number of Stores	35	44	68	39	33	10			
Gross margin	21.25	25.63	25.00	21.59	22.71	23.35	23.11		
Net margin	7.54	12.31	12.32	11.10	14.31	15.26	14.6		
Total expenses	13.71	13.32	11.69	10.49	8.4	8.09	9.51		
Rent & utilities	5.55	3.89	2.61	1.91	1.45	1.57	1.78		
Taxes	0.50	0.65	0.33	0.21	0.17	0.30	0.27		
Equipment expense	.90	1.04	.95	.76	.55	.50	.66		
Supplies	.10	1.39	1.22	.71	.50	.45	.68		
Insurance		0.02	0.08	.05	.09	.08	.07		
Stock loss	0.90	.88	.63	.51	.42	.20	.43		
Selling costs	4.30	3.30	2.46	2.09	1.43	1.24	1.79		
Buying cost	0.44	0.92	0.66	0.65	0.65	0.34	0.56		
Labor	.43	1.50	2.78	3.58	3.14	3.40	3.12		

Source: Galbraith, John K., and Richard H. Holton. (1954) Marketing Efficiency in Puerto Rico. Harvard University Press, p. 31.

itinerant truckers on the farm or at concentration points along the highway. Nathan Koenig observed that:

The movement of products from the farms to the marketing centers of Puerto Rico is a costly process... All the fruits and many other products that move in the market are sold by count. Although some of the products are placed in sacks, their handling is as costly as handling bulk shipments. Since there is no grading to promote buyer confidence, the practice of the trade is to inspect each item that is received.³⁵

According to Koenig, the most prevalent source of market price and supply information was market observation or word-of-mouth reporting. The merchant truckers obtained price information by direct observation in the various market plazas they visited.³⁶

³⁵Nathan Koenig, A Comprehensive Agricultural Program for Puerto Rico, U. S. Department of Agriculture (Washington, D. C., 1953), p. 221.

³⁶As Kelly M. Harrison reports in his 1967 thesis, "Agricultural Marketing Coordination and Its Role in Agricultural Development in Puerto Rico":

The inefficient marketing system for fresh fruits and vegetables in 1950 was harmful to the Puerto Rican economy in several respects; producers were encouraged by the structure of the marketing system to remain small and to avoid diversification in production methods. The risks associated with the fluctuating price and supply situation discouraged producers from allocating resources in a more efficient manner. Margins of middlemen were kept high and the resulting profits were low for the inefficient marketers. Finally, consumers were deprived of the opportunity to purchase food supplies at the lowest possible price and were unable to satisfy their need for specific types and qualities of product. The overall effect of the inefficient marketing system was to retard Puerto Rican economic development.

Marketing of meat, like the marketing of fruit and vegetables, was similarly primitive. Low volume by a large number of operators, operating under poor conditions, resulted in high costs. In addition, sanitary precautions were practically non-existent.

Harrison also tells about 1950 egg production and marketing. Production was widely scattered among a large number of subsistence farms. There were no grading or handling regulations. The result was an uncoordinated and apparently inefficient marketing system, which involved a high degree of risk for all concerned. Due to the lack of large-scale commercial egg producers, there were large numbers of egg dealers who collected eggs and either retailed them directly or sold them to other retailers for sale to consumers. Then, too, consumers were confronted with fluctuating egg prices. As a result of the risk and inefficiencies mentioned above, Puerto Rican consumers continued to purchase large quantities of imported eggs which were also of low quality due to the lengthy transport time and handling conditions typical in the shipment of perishable goods.

Dairying had developed as second to sugar in dollar volume by 1950. In the forties, strides had been made in increasing production and eliminating diseases of cattle, but processing and distribution hampered the improvements in milk production. Of the 159 million quarts

produced, only about 56.5 million quarts entered commercial sales channels. There were no regulations on milk prices; producers and their buyers were completely free to bargain and establish milk prices throughout the year. As a result of inefficiencies in marketing, Puerto Ricans imported and consumed almost as much milk in the form of evaporated and dry milk as was produced and processed for local consumption.

Summary of Early Studies

Food distribution in 1950 was a conglomeration of many problems. There were small farmers at the mercy of fluctuating prices. There were many small retailers, few of whom were operating at efficient levels. And there were great quantities of food imported from the mainland. Basically, the situation was characterized by great uncertainty, resulting from a lack of quality grading practices and/or government regulations. A few attempts had been made to improve the distribution system, but they had not been effective overall. Real changes were needed, and the commonwealth government, under Muñoz-Marin's leadership, set to work to bring about those changes.

Government Organization for Change

The food distribution system was not working effectively in 1950. Having previously made promises to do something about high food prices, Governor Muñoz-Marin was faced with the necessity of bringing about changes in food distribution. It is a tribute both to the comprehensiveness of the studies and to the governor and his officials that they were willing to step forward and take the risks inherent in change.

The Food Commission

Following the publication of the above-mentioned studies, Governor Muñoz-Marin appointed the Food Commission which he had first promised in 1940.³⁷ This was a shrewd political step on the governor's part, because it brought into the decision process people who could have effectively stopped the changes. At about the time the Food Commission was appointed, the governor announced that present food prices were too high, just as he had done in 1940.

³⁷The Commission was composed of respected persons from the University, the government, and both the United States and Puerto Rican business communities. Lansing Shields the president of Grand Union Supermarkets, was chairman of the Commission. Other members included: Frank Ballester, Frank Besosa, Maurice C. Bond, Ramon Colon-Torres, William Crow, Hugh J. Davern, Francisco Frieria, J. K. Galbraith, Millard Hansen, Bretton Harris, Austin Iglehart, William G. Karnes, James McGowan, Jr., Candido Oliveras, John Paton, Beardsley Ruml, Charles F. Seabrook, Ramon Señeriz, and Francis Whitmarsh.

The stated purpose of the commission was to evaluate the findings of the economic studies and make recommendations for implementing the proposals. Galbraith and Holton's was one of the key economic studies evaluated. Muñoz-Marín's unstated purpose was to bring the affected parties together. Those who might have objected to reform and who might have sabotaged the efforts to bring about change found themselves serving as members of the commission. Thus, the governor was assured that all commission members were publicly committed to support any government-sponsored reform program, since any reform would be based on their recommendations...unless dissident members broke from the majority and offered minority recommendations. The groundwork had been carefully laid to prevent that.

In April of 1954, the governor's Food Commission made its report. In it the members unanimously agreed with most of the suggestions made by the various studies. The committee suggested the following changes:

1. The establishment of supermarkets in urban areas. This recommendation was particularly questioned by those who maintained: people bought food on credit; most consumers did not have cars; most people did not like to shop in large stores; and maids did most of the shopping and were unfamiliar with supermarket shopping methods.

2. Consumer cooperative retail units for rural areas. A federation of these retailers' co-operatives was recommended to form a wholesale warehouse in the San Juan metropolitan area.
3. Government assistance in building and site selection to help local businessmen who wanted to establish new stores. (The emphasis throughout the commission's report was on aid to local Puerto Rican businessmen.)
4. A tax incentive for food processors.
5. The expansion of agricultural production with stress on import substitution.
6. An intensive training program for food store employees and consumers.

Fomento

After the governor's Food Commission report was made public, some concern arose over which agency would take over the responsibility for implementing the recommendations. The appropriate department, Agriculture and Commerce, was at that time much more concerned with social programs and with trying to improve rural living conditions. Fomento resolved the problem by creating a specific group to administer a food distribution program within the government's industrial development branch. Fomento took the responsibility initially to help industrial development and it was discovered that indigenous management for the

industrial development program was in short supply. As a result, management was being hired from the United States mainland, and some of the mainland wives were not happy with shopping facilities in Puerto Rico. In an interview, Teodoro Moscoso stated that the initial purpose of Fomento getting into food distribution was to provide "continentals" with supermarkets so that they would find working in Puerto Rico more pleasant.

E. Lee Feller was the first director of the food distribution program. The primary work of the department was to teach owners and operators how to modernize and convert to self-service operations, and also to instruct and train employees in handling of perishables and meat. In July 1956, a formal food distribution program was set up. In 1957, the Office of Food Distribution was replaced by the Commercial Development Department and the area of involvement was expanded.³⁸

Department of Agriculture and Commerce

Even though there was a single Department of Agriculture and Commerce, its work was primarily agricultural in focus. The department was pushing for better commodity grading, standards, and market information. Commercial

³⁸See H. C. Barton, Jr., "Puerto Rico's Industrial Development Program, 1942-1960," prepublication copy of a paper presented at a seminar of the Center for International Affairs, Harvard University, Cambridge, Mass., October 29, 1959.

ventures were handled mostly by Fomento. However, in 1958, the Agricultural Services Office of Fomento was moved to the Department of Agriculture in response to pressure for increasing agricultural production. The Department of Agriculture then took the responsibility for the development of the Central Market, the food wholesaling complex which had been first recommended by Branson and Otten in 1951. The department made additional studies but no firm steps to establish a central market for more efficient handling of food were taken until the Department of Commerce was established in 1961. Then, the secretary, Dr. Carlos Lastra, formed the Commercial Development Company, which in turn forged ahead with the new wholesaling complex, where now are located the "Sea-Land"³⁹ docks and some of the major food importers and wholesalers.

Department of Commerce

As mentioned previously, the programs of Fomento's Office of Commercial Development involved the establishment of supermarkets and shopping centers. As a result of these actions on the part of Fomento, some Puerto Rican businessmen felt new and intense competition. Some businessmen felt it would be impossible to stay in business without the help of some government agency. In response to requests by

³⁹"Sea-Land" is the major container ship company serving Puerto Rico. As of 1966, almost all imported foods were coming into Puerto Rico in container ships. Each container was actually a semi-trailer without wheels. Such containers speed loading and unloading as well as cut shipping losses.

individual businessmen and their associations, the Department of Commerce was created by a law passed in July 1960 from elements in Fomento and in the Department of Agriculture and Commerce. It began giving service in August 1961. The newly formed department was not to serve only businesses to the exclusion of others. The law specifically provided that the department favor effective competition so that the distribution system was favorable for the consumer as well as the retailer or wholesaler. One of the programs in the department was provided by the Division of Financial Services. This division helps businessmen secure loans. The Division of Technical and Commercial Development helped more than 5,000 businessmen modernize their businesses in the first 4 years of operation. In addition, training programs and seminars have been continued in the tradition that Fomento had established during the mid-fifties with its numerous training programs.

The Commercial Development Company

At the urging of the then Secretary of Commerce, Dr. Carlos Lastra, the above company was created by the Commonwealth Legislature in June 1962. The Commercial Development Company's first task was the construction of a building for the establishment of a United States based chain retail discount store in Santurce. A total of

\$1,120,000 was invested in this 90,000 square-foot unit. Another major project of CDC was the construction of the Central Market for food wholesalers at a cost of \$1,872,360. Presently, there are two warehouses providing 358,000 square feet. Recently, CDC allowed contracts for the construction of an additional 350,000 square feet of warehouse space. Also, CDC is involved with the Department of Agriculture and the various municipal governments in the construction of a modern plaza de mercados and commercial centers. The Commercial Development Company also is authorized to make loans to private businessmen for bettering commercial facilities in Puerto Rico. Finally, CDC has recently started a program for guaranteeing rents of small- and medium-size businesses in shopping centers.⁴⁰

Changes That Occurred in Food Retailing

In the preceding section, government reforms and the institutional organization to change food distribution was discussed. To explore the effects of these efforts, it is useful to discuss some of the highlights of changes in food retailing beginning about the time of the creation of the governor's Food Commission in 1954.

⁴⁰ This description of the Department of Commerce and the CDC depends heavily upon the mimeographed paper, "La Funcion del Departamento de Comercio in el Desarrollo Comercial de Puerto Rico," Departamento de Comercio, Oficina de Economica y Planificacion, 9 de Junio de 1966.

Significant Changes

In order to implement the findings of the Food Commission, Fomento bore the brunt of government efforts to bring about change. Fomento had funds for helping establish supermarkets; it helped the cooperative stores form a large centralized wholesaling operation through both financial and technical assistance; it encouraged the establishment of a voluntary group of independently owned food stores; it provided training for employees and technical assistance for those retailers who wanted to modernize their stores and/or management. The Agricultural Extension Service worked with the cooperatives to get better management. These several avenues of change were tried in the hope of fostering a balanced competitive scene and in the hope that some would succeed even if others failed.

Fomento also took the responsibility of encouraging supermarket development and approached certain San Juan food wholesalers about the possibility of establishing such stores. The government was willing to match private businessmen dollar for dollar in their establishment. Certain wholesalers in Ponce, the second largest city of Puerto Rico, as well as in San Juan, were asked to participate. In addition, certain San Juan retailers were offered Fomento cooperation, but though one retailer agreed to cooperate, it was not in the way the government wanted. Representatives of all segments of the food distribution system

community were offered assistance in the creation of supermarkets. However, none of the businessmen in food retailing or wholesaling accepted help at that time on the terms offered. There are those who today ruefully admit that perhaps they should have accepted Fomento's offers of help. There are also government officials who wish that somehow more effort could have been put into encouraging local retailers to change their ways of doing business. It was the outsiders who were among the first to accept the risks of establishing supermarkets, first in San Juan and later in the other urban areas of Puerto Rico. Admittedly, there were in 1954 some locally operated supermarkets, but they were not doing well. A chain of four stores with the latest equipment failed in the mid-fifties. One of the more successful local operators refused Fomento's help in expanding his operations.⁴¹ A stateside firm, Todos, a division of the Rockefeller-sponsored IBEC (International Basic Economy Corporation), agreed to a government request to start supermarket operations in Puerto Rico. By 1958, Todos was having financial difficulties, allegedly due to inexperienced management. Grand Union, whose president, Lansing Shields, had been president of the Food Commission in 1954, purchased the Todos Supermarkets. It is said that Grand Union's entry was requested by government officials to insure meaningful competition for other private opera-

...⁴¹ This man today still operates one large supermarket.

tors. Nevertheless, it was Grand Union that received the bad publicity when intense opposition developed to supermarkets extending their operations outside of San Juan in 1961. Grand Union was forced to forego investments in Fajardo and Arecibo, two cities about 45 minutes drive from San Juan. Both of these cities were forecast to enjoy rapid growth. The "invasion of foreign corporations" was heatedly discussed in 1961 on the floor of the legislature. The speaker of the house, Ernesto Ramos Antonini, led a heated fight against the establishment of supermarkets outside of San Juan, and Grand Union consequently suffered a delay in growth. In contrast to the problems of Grand Union, "Puerto Rico and Pueblo are growing together," just as currently advertised. Pueblo did not have the political problems of Grand Union. Perhaps part of the reason was due to the company being viewed as a Puerto Rican operation from its inception.

Pueblo supermarkets got their start from an extranjero, Harold Toppel, who opened his first store in the spring of 1954 without any help from Fomento. He did not receive Fomento help because he was not a local businessman for whom these funds had been set up. Moreover, many of the wholesalers refused to work with him because he was not Puerto Rican. But Fomento encouraged him, particularly

after his second store was established.⁴² Toppel was a hard-driving, result-oriented executive with sound business sense. He believed the Puerto Rican government was and is "clean and honest" and the political climate the kind needed for business growth. He now considers himself Puerto Rican, and the evidence of that belief is in the name Pueblo, its slogan "Puerto Rico y Pueblo Progresan Juntos," and its employees who are nearly all Puerto Ricans rather than mainland imports. When necessary, he has hired and trained local people, and in many cases promoted them to executive posts. His trust in Puerto Rico has been returned; Pueblo in 1965 sold more food than its next two closest competitors combined. Pueblo Supermarket Corporation made a net profit of \$1,829,544 from its founding in 1956 through January 31, 1960. All that profit was retained in Puerto Rico and reinvested in the food retailing business. Since 1960, dividends to common stockholders have

⁴²That an outsider was the one to establish what became the most successful food retailing chain is an indication of the openness of Puerto Rico's political climate. The extranjero, the foreigner, made truly significant contributions to changes in food retailing in Puerto Rico. But these contributions would not have been possible had the pragmatic and result-oriented Puerto Rican leaders not set up an atmosphere of permissiveness and encouragement. This atmosphere was one of encouragement for anything that looked as if it might work. Fomento's help perhaps was a necessary, but certainly not a sufficient, condition for growth. The primary reason for Pueblo's success is due to its founder, Mr. Harold Toppel, an outstanding example of the successful extranjero. Aspects of extranjeros are dealt with in detail in later chapters.

approximated 30 per cent of annual earnings. The remainder has been reinvested, mostly in Puerto Rico. The 1961 drive to keep "foreign dominated" firms out of the smaller cities of the island, and probably also to slow their rapid growth in San Juan, did not visibly affect Pueblo, which concentrated most of its efforts in San Juan until 1964.⁴³ Outside of the legislature, the executive arm of the government was still convinced of the need for larger retail establishments. Fast on the heels of the legislative hearings on the detrimental effects of supermarkets, one of the first tasks of the Commercial Development Company was the construction of a building for a United States-based chain retail discount store in 1962.

Cooperative Stores

Fomento made a loan in order to help the food retail cooperatives get a food wholesale warehouse. The new food wholesale firm, the Federation of Consumer Cooperatives, was supposed to provide lower cost products to both member stores and other food retailers who were too small to have their own warehouses. While sales of cooperative food stores increased over the years, the performance was spotty. The cooperative food wholesaling operation has not proved to be the effective countervailing power that

⁴³ There was one store in Ponce in 1959, but it was April 1965 before Pueblo opened another Puerto Rican store outside of San Juan. In 1964, a store was opened on a nearby island.

it was hoped to be. Perhaps change at the wholesale level has been less successful because it was a potential threat to the existing and profitable food wholesaler-importers. Some of the wealthiest and most influential families in Puerto Rico were owners of the food wholesaling-importing firms. These food brokers-importers-wholesalers were extending credit, dealing in commodity speculation, and permitting retailers to perform the warehousing function on credit. The cooperative wholesale operation found it difficult to buy the products it needed at what it considered proper prices.⁴⁴ Then, too, the cooperative warehouse found the traditional suppliers of the stores making special deals in order to hold their customers.

One of the most successful cooperative stores was in the western city of Mayaguez, where university faculty members made significant contributions to the guidance of that store and its growth. Until late 1965, it was the only supermarket in Mayaguez.

Independent Stores, Incorporated.

From the beginning of its food distribution program, Fomento supported the creation of a buying group of small retailers called the Independent Stores, Inc., (ISI). The group began with 15 merchants located in various parts

⁴⁴This problem of difficulty in buying will be dealt with more extensively later.

of the San Juan metropolitan area; each member contributed \$1,500 to the organization and officers were elected. Some members were sent to observe operations in the United States. Tentative financing arrangements were made with local banks and also with the Government Development Bank.

Financing for expansion proved a real problem because the operators did not have such things as operating statements for a two- or three-year period. They had no such comprehensive records. Even the Government Development Bank would not accept loan applications without adequate financial records,⁴⁵ so there were few funds for expansion available to these retailers. The bankers had many alternative outlets for profitable loans in the booming Puerto Rican economy. They did not feel it necessary or desirable to loan money to "high risk clients." Through programs such as ISI, Fomento tried to "get the retailers out of hock to their suppliers, get them out of credit sales, and then upgrade the stores to self-service."⁴⁶ In the late fifties, ISI failed because of the lack of aggressive group spirit. However, the technical advice and management training programs continued for individuals.

⁴⁵See Chapter VI for discussion of alternatives to such financial requirements.

⁴⁶Explanation to the author by Don Lemons, long-term consultant to the Puerto Rican government and former Fomento employee.

Interaction Between Changes in Food Retailing and the Government

The government interest in distribution, while intense and in many ways helpful, was not an unmitigated blessing to the local businessmen. While Fomento, the Department of Commerce, and the Department of Agriculture did much to encourage larger and more efficient retail establishments, the Planning Board, the Department of Agriculture, and the Department of Justice were involved in other decisions regarding food retailing. Retail establishments, like other institutions, operate within a specific society which has certain rules and sanctions.

Planning Board Regulations

As mentioned earlier, there has been a Government Planning Board since 1942. The Planning Board has been intimately concerned with all major economic events in Puerto Rico. The 1962 edition of the Planning Board regulations, governing the development of new suburban shopping centers, specifically decrees what stores, including food stores, will be in various neighborhood shopping centers. Further, the Planning Board specifies the minimum sizes of these stores under the title "Construction of Commercial Facilities." The quote below is a translation of part of their regulations:

Commercial facilities will be constructed on the basis of roughly a minimum area of 15 sq. feet per dwelling or lot. These buildings can have roughly a maximum area of 25 square feet per dwelling or lot. The developer will justify the size. As a part of the minimum commercial facilities required, space shall be provided for grocery stores, pharmacies, doctors' offices, cafeterias, hardware store, laundromats, bakeries, according to the minimum size that is established in the Appendix of this regulation. The other uses pointed out in the Appendix are optional. But this statement does not relieve the developer from providing the minimum rough area of floor for the stores specifically required. The contractor or developer shall prepare the floor plans with the distribution and use of all space for all the buildings that are projected to be utilized for commercial means. In the development of subdivisions, the board shall submit to the consideration of the Department of Commerce for its endorsement.⁴⁷

Since the construction company must build and pay for the neighborhood shopping center, this specific requirement for stores within each development has been met usually with the minimum-size stores specified. Many of the resulting food stores are too large to be run by one employee, but too small to compete adequately with the large supermarkets in terms of lines of merchandise carried.

Then, too, in the more settled neighborhoods, private entrepreneurs disregarded the dictates of government regulatory agencies by constructing small food stores within houses. There are a great number of these so-called "clandestine stores" in the suburbs around San Juan. In many cases, without Planning Board approval and in compe-

⁴⁷ Reglamento Sobre Facilidades Vecinales, Junta de Planificacion, Gobierno de Puerto Rico, 1962, p. 13.

tition with the shopping center stores, garages are being remodeled to form small stores. Competing with these stores and frequently located in the open areas between suburbs, large supermarkets of 15,000 or more square feet have been constructed. The food store operators in the authorized Planning Board stores of the suburbs are forced to compete with the "mom and pop" stores in the homes and with the larger supermarkets outside the suburbs. They are poorly equipped to do either job very well.

Many of these Planning Board-sponsored stores seem today to be of the wrong size. The larger stores have greater assortment and, therefore, can change their "mix" of products in such a way as to charge lower prices for necessities. On the other hand, the clandestine stores, since they are owned and operated by the same person, are permitted to set their own hours and days of operation. All retail establishments that employ workers must close at 6 p.m. every night except Friday, when they may remain open until 9 p.m. In addition, any retail store that employs workers is not permitted to be open on Sundays.

The Department of Agriculture

The Department of Agriculture tried to help Puerto Rican farmers and consumers by establishing grading requirements for incoming produce. The requirements, some of which were established back in 1957, effectively cut off imports

of tropical starchy vegetables such as plantains, bananas, and root crops. Retailers must also note the origins of eggs, chickens, and other forms of meat. Thus, these products also are more difficult to bring from other areas. Such restrictions have probably resulted in higher prices of certain commodities.

Anti-Trust Laws

As early as 1954, Galbraith and Holton mentioned that the exclusive agency arrangement, which many mainland food processors had with importers in Puerto Rico, might be illegal in terms of the United States Robinson-Pattman Act.

Certain practices of the exclusive agents and their principals are conceivably, though not certainly, illegal under the Robinson-Pattman amendment to the Clayton Act.⁴⁸

They went on to suggest that legal changes to the exclusive agent arrangement either by the Commonwealth Government or the Federal Government might not be the answer. They specified the question, "What will be the effect? Will the resulting changes in distribution methods really effect a reduction in costs or will the income now enjoyed by the agents simply be shunted into other hands?"⁴⁹

⁴⁸Galbraith and Holton, op. cit., p. 194.

⁴⁹Ibid., p. 196.

Apparently, the answer was that there would be no noticeable effect because, until recently, no official action was taken. But within the past two years two new laws have been enacted. The new Puerto Rican anti-trust laws are starting to be applied, but as yet are not much of a force in the market place. The two laws seem to be at cross purposes with each other. Puerto Rico's unique broker law⁵⁰ is a law which seems to protect vested interests. The main provisions are that a principal (processor or manufacturer) may not change his agent without giving the agent rewards for the future stream of revenue under the presumption that these revenues are a result of prior effort of the agent on behalf of the principal. Perhaps because it has not really been tested yet, it stands now as a structural constraint which perhaps prevents certain individually small reforms in marketing which might otherwise take place.

Another unusual legal situation is that the United States anti-trust laws are seemingly held in abeyance, especially with respect to the wholesale sector. At present the larger retailers have the opportunity of buying either from the local wholesaler-distributor located on the island or to buy from the mainland, which sometimes means differences in prices because some processors sell as if

⁵⁰Law #75, approved on June 24, 1964, as amended on June 28, 1965, is entitled "Dealer's Contract - Renewal; Just Cause."

Puerto Rico is an export market. If the processor or manufacturer wants to change his arrangements, he faces a dilemma. If he accepts the fact that Puerto Rico is part of the United States territory and sells directly to a retailer and bypasses his agent, his prior relationship with the agent who represented him is threatened by the local brokerage law. On the other hand, if the local wholesaler-importer acts as a broker, then the United States processor is subject to some question either under federal or local law, if there are differences in price or if the differences in price do not fully allow for quantity and services and differences in order size.

The other Puerto Rican anti-trust law is patterned after the Robinson-Pattman Amendment and Clayton Act. It prohibits price discrimination.⁵¹ It also provides for the establishment of an Office of Monopolistic Affairs. This office can conduct Federal Trade Commission type hearings. As of May 1966, the office was operating with a limited staff and taking action only as complaints came in.

Co-op Laws

Law #291, entitled "General Law of Cooperative Societies of Puerto Rico," was approved by the Puerto

⁵¹Law #77, approved on June 25, 1959, is entitled "Commerce Prohibition of Monopolistic Practices and Protection to Fair and Free Competition."

Rican Legislature on April 9, 1946, and has been the basis on which all cooperatives operate. The law specifically spells out who can form cooperatives and the tax benefits provided. Article 5 says that a cooperative can be formed by a group of 11 or more "consumers" or "producers." Thus, retailers are not permitted to form a cooperative buying group such as Associated Grocers in the United States. This puts medium-size, progressive, independent businessmen at a possible disadvantage, since they cannot form a buying group.

The law does, however, permit a cooperative to make up to 49 per cent of its sales to non-members. In fact, the Cooperative Federation, the wholesale warehouse arm of the cooperative food stores, does supply independent retail operators.

The federation got its start when the consumer co-operatives were reorganized in 1956 with the help of Fomento and the Agricultural Extension Service. A federation of these cooperatives was established for serving as wholesaler to the retail cooperative stores. Fomento loaned the federation a substantial amount to help it get started. Among probable reasons for Fomento's encouragement of the co-ops were: (1) to implement Food Commission recommendations that food cooperatives should be given a hand; (2) to encourage some countervailing force for such private supermarkets that were being established; and (3) to act

as a political device to prove to critics that the government had not sold out to private industry.

Resulting Additional Investment
in Food Retailing

Investment in Puerto Rico looked much more promising in the early sixties than it did in the mid-fifties. Some new firms had been attracted into food retailing by the high profits of the more efficient operators.⁵² A new discount house with a large supermarket was established in San Juan in late 1964. While the supermarket operation was mainly owned by Continentals, the day-to-day operations of "Supermercados de Discuentos de Puerto Rico" were managed by Puerto Ricans. A local image was created, and a stateside buying office provided purchasing assistance. By mid-1966, this company had three stores in operation and plans for more. Their initial entry had been very successful. Essentially, they borrowed part of their success formula from Harold Toppel, the founder of Pueblo-- "Be concerned about results, have faith in the local people, buy wherever it is cheapest, and do better than your competitors."

⁵²Pueblo Stores was publicly held, and certain brokers and investors' advisory services were recommending the purchase of Pueblo stock in 1962 due to its very high profits.

Summary

In Puerto Rico, there are several threads which could be considered basic to the changes that occurred in food retailing between 1950-1965, but the interest and attention of one man, Luis Muñoz-Marin, stand out. Privately and publicly, he strongly supported food distribution reforms. He had the political shrewdness and courage to move forward with potentially dangerous reforms, reforms which would hurt some businessmen. He had the willingness to trust and wait for intellectuals and technicians who showed him how to accomplish reform.

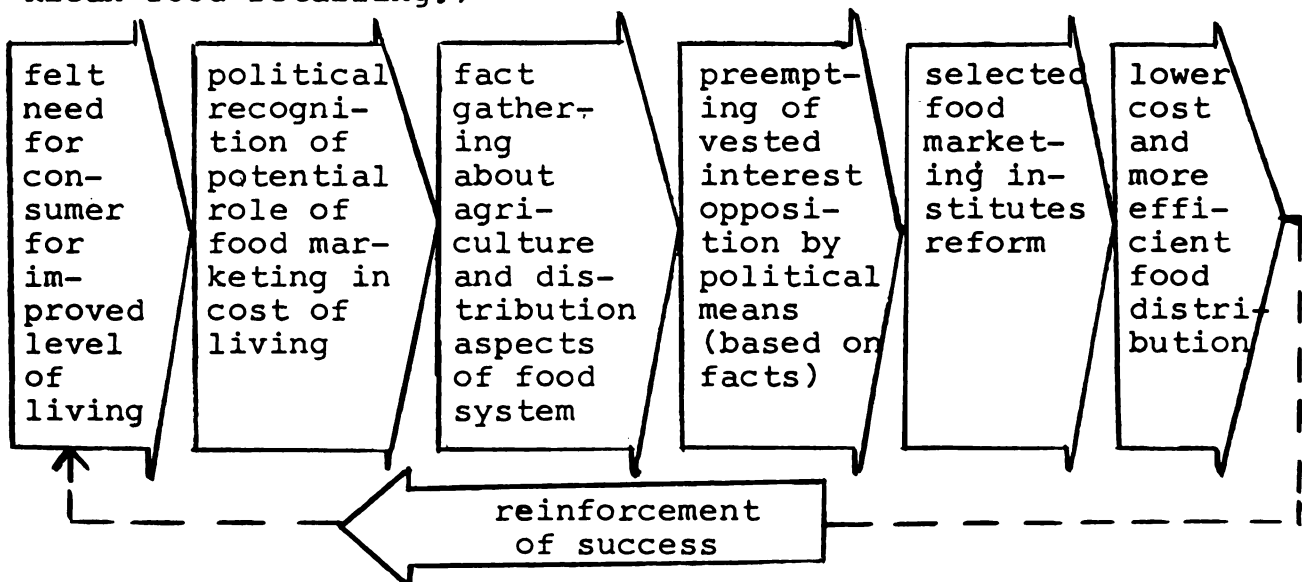
During 1949 and 1950, intensive studies were made of the state of food production and distribution throughout the island of Puerto Rico. These studies resulted in the governor appointing a Food Commission. The commission, which had been a political promise from as far back as 1940, recommended the implementation of a number of reforms that had been suggested by the earlier economic studies.

The Economic Development Administration, better known as Fomento in Puerto Rico, took the responsibility for putting to work the Food Commission's recommendations. Fomento's primary efforts were directed toward encouraging local businessmen in new methods and types of stores. Primarily, though, the more successful change agents were newcomers to food distribution in Puerto Rico. There was too much risk in these new ideas for most of the existing

operations. The most successful programs of change were with the large supermarkets. The interest of other government departments was fairly extensive, but not an unmitigated blessing.

Another contributing factor to the ease with which change was introduced was the rapid growth in the total economy and in family incomes. There was, during these years, a 5 per cent-plus growth rate, which meant there was more for almost everyone. The higher incomes meant that consumers were ready to buy new products which the retailer could introduce most quickly. Thus the retailer gained dominance over the distribution channel.

Below is a paradigm of accelerated change in food distribution which can result in increased development. (It is believed that this paradigm, while it is one way of understanding what happened, is not unique to Puerto Rican food retailing.)



An explanation of the paradigm.--The diagram above is a concentrated way of laying out the manner it was perceived that food distribution could change and, as a part of its change, contribute to economic development. It should be kept in mind that even though neither the time period nor the feedback loops are specified in the paradigm, in the view of the author, they do exist and influence the results.

CHAPTER IV

THE ECONOMICS OF IMPROVED FOOD DISTRIBUTION

Introduction

This chapter deals in more detail with the specifics of change in food retailing, 1950-1965, and continues an analysis of the process of change. Economic variables are dealt with, while in the subsequent chapter sociological variables are considered. Thus, Chapters III and IV both deal with the first two objectives of the thesis, i.e., to describe accurately what happened in food retailing from 1950 to 1965 and to investigate and explain the process of change during a period of planned development.

This chapter is divided into four main sections. The first is concerned with factors accounting for demand changes in terms of those economic and demographic variables important in changing demand. The second section is devoted to changes in price, price levels, and price differences. The third section deals with the changing retailer. It includes such variables as employment, store size, and costs of operation. The last section is concerned

with the effects of changes in food retailing upon economic development. Some of the earlier-mentioned hypotheses are discussed.

The Changing Consumer

Income Change

One major change was the increase in family income. Money coming into the Puerto Rican family increased 145 per cent, compared to the United States average of 63 per cent. And yet many Puerto Ricans were still poor. The 1959 median family income was less than one-half the median income of the poorest state in the United States, Mississippi (\$2,844). It can be noticed in Table 4-1, that the United States as a whole as well as Mississippi and Puerto Rico have shown increases in income. However, it is evident that Puerto Rican families in 1959 were just about where Mississippi families were 10 years before. As late as 1959, 44 per cent of the families had incomes of less than \$1,000.

Table 4-2 shows the changes for the United States as a whole, Mississippi and Puerto Rico over the 10-year period indicated. It can be seen that family incomes in both Mississippi and Puerto Rico increased faster than the rest of the United States. It can also be seen in Table 4-2 that while Puerto Rico has made great strides in the fifties, its percentage change in median family incomes was not greatly different from the rate of changes in the median income of Mississippi families.

TABLE 4-1.--Income distribution of spending units, Puerto Rico (1949 and 1959)

Income, dollars (current prices)	Percentage of spending units, 1949	Percentage of families, 1959
Under 1,000	74	42.4
1,000-1,999	16	23.5
2,000-2,999	5	12.9
3,000-3,999	2	7.0
4,000-4,999	1	4.4
5,000-7,499	. .	7.2
7,500-9,999	2	. .
10,000, or over	. .	2.1
Not reported	. .	0.6

Sources: G&H Marketing Efficiency in Puerto Rico, p. 6, Table 1.
Statistical Abstract of the United States, p. 341, Table 46.
U. S., Census of Population, 1960, Mississippi, pp. 26-134, Table 66.
Family Income, p. 390, Table 119.
U. S., Census of Population, 1960, PC(1)-53C, Table 57, p. 129.

TABLE 4-2.--Comparisons of current \$ incomes, median family incomes, United States, Mississippi, and Puerto Rico, 1949 and 1959

	United States		Mississippi		Puerto Rico	
Median income	1949	1959	1949	1959	1949	1959
	\$3319	\$5417	\$1228	\$2844	\$534	\$1268
As % of U. S.	100%		37%	52%	16%	23%
% change, based on 1949	63%		. .	132%	. .	145%
% change, based on 1959	39%		. .	57%	. .	59%

Source: Calculations from Table 5-1.

There are, however, indications that the rate of change of Puerto Rican family incomes has accelerated since 1959. By 1963, Puerto Rican median family income was estimated to be \$1,856.¹ Another indication of the rapidly increasing income is the results found in a survey of families in San Juan and Mayaguez. While the distribution in the two cities are different, it is obvious that this is a considerable improvement over that reported in the 1959 census, as indicated in Table 4-1 earlier.

TABLE 4-3.--Family income before taxes, 1964, by income classes, San Juan and Mayaguez

Income	Percentage of families	
	San Juan	Mayaguez
Less than \$1,000	27.4	21.6
\$1,000-1,999	17.41	20.9
\$2,000-3,499	20.00	29.8
\$3,500-4,999	13.0	14.9
\$5,000-9,999	13.9	11.2
\$10,000 or more	8.71	1.4
	N = 230	134

Source: Latin American Food Marketing Study, 1965-66

According to this survey, less than 30 per cent of the families were in the lowest income bracket, as opposed

¹This was derived from Planning Board estimate of 1964 mean family income of \$4,244, and by using the same percentage relationship as existed between 1959 median and 1960 mean incomes. At that time, median income was 44 per cent of mean income.

to 44 per cent in 1959. Although median income cannot be determined precisely, it is in the \$2,000-\$3,499 category in both San Juan and Mayaguez.

One must admit that the minimum income necessary for survival is undoubtedly less in Puerto Rico, where there is a year-round temperature above 70° F. and heavy clothing is unnecessary. Not even Mississippians can claim a climate like that. Still it may be that it costs more to maintain any given standard of living in Puerto Rico because of higher prices. (That issue will be dealt with in a later section.)

Population Change

For a variety of reasons, including a common citizenship, there is fast and economical movement between the United States and Puerto Rico. This movement has been especially pronounced between New York City and Puerto Rico. The air fare of \$45 one way for the 1,603 miles between New York and San Juan is among the lowest in the world. One is told stories, apocraphyl perhaps, of hard selling travel agents who worked the rural areas (where unemployment was especially high during the fifties) selling one-way air tickets on the installment plan to New York. The Puerto Rican-born population of New York City tripled between 1940 and 1950 and increased from 187,420 to 429,710 between 1950 and 1960. By 1960, there

were 615,384 Puerto Rican-born persons living in the continental United States.²

Because of the heavy migration, the total population of Puerto Rico increased less than 12 per cent, yet the crude birth rate of Puerto Rico was considerably higher than the United States. Table 4-4 shows the different rates of population change and crude birth rate. Were it not for out-migration, Puerto Rico could have had a most serious population problem which would have complicated the development problems of the resource-poor and heavily populated island.³

TABLE 4-4.--Crude birth rate and population growth, 1940, 1950 and 1960

Item	Crude birth rate (per 1,000)			Population (in thousands)		
	1940	1950	1960	1940	1950	1960
Puerto Rico	38.5	38.7	31.1	1,869	2,210	2,513
% change, 1950-60					11%	7%
United States	19.4	24.1	23.7		152,271	189,417
% change, 1950-60					19%	

Source: Puerto Rico Statistical Yearbook, 1964, p. 5, table 2.
Statistical Abstract of U. S., 1965, p. 48, table 48.

²U. S., Bureau of Census, Puerto Ricans in the United States. 1960. Table A, p. 7.

³One of the better reports is the book by Reuben Hill, J. Nayone Stycos, and Kurt W. Back, The Family and Population Control. (Chapel Hill: University of North Carolina Press, 1959.)

More recently, Puerto Ricans have been moving both ways. This movement of Puerto Ricans and Continentals in and out of Puerto Rico has probably been a contributing factor to the relative ease with which the many changes in food products and distribution have been accepted.

Table 4-5 indicates that Puerto Rico has had and maintains a considerably younger population than the United States. Note especially the median age in Puerto Rico, which indicates that 50 per cent of the population is under 19. In this respect, the age of Puerto Ricans is more like a number of Latin American countries rather than the United States. Yet, in spite of the high birth rate, the great numbers of youth, and the increasing longevity of Puerto Ricans, the per capita net product of Puerto Rico has grown greatly. Certainly, out-migration has made a contribution.

Consumption Change

For a number of years, including 1963, total consumption exceeded disposable personal income. According to the Statistical Yearbook of Puerto Rico, total expenditures in 1963 were \$2,053,000,000, or 101.3 per cent of disposable personal income of \$2,026,000,000. On the United States mainland, consumption is usually between 90 and 95 per cent of disposable personal income. Table 4-6 compares personal expenditures in the United States and Puerto Rico. Two of the most obvious shifts in Puerto Rico have been

TABLE 4-5.--Selected age distribution of Puerto Rican and United States populations in 1940, 1950, and 1960

		Per cent 14 & under	Per cent 65 & over	Median Age
1940	Puerto Rico	40.5	3.4	19.2
	United States	25.1	6.9	29.0
1950	Puerto Rico	43.2	3.9	18.4
	United States	26.2	9.3	30.2
1960	Puerto Rico	42.7	5.1	18.5
	United States	31.0	9.2	29.5

Sources: 1964 Statistical Yearbook, Puerto Rico, table 2, p. 2.
1955 Statistical Yearbook, Puerto Rico, table 5, p. 8.
1965 Statistical Abstract of the United States, table 48, p. 48.

(1) the decrease in percentage spent on food, while diets were being up-graded, and (2) the increase in spending upon recreation and transportation out of incomes considerably smaller than U. S. Mainland incomes. Puerto Ricans still spent a larger share of income on food than their mainland counterparts. By 1963, Puerto Ricans were also spending greater percentages on transportation and recreation.

Another indication of changing per capita consumption of various foods is the index of per capita consumption indicated in Table 4-5. Overall the suggestion is

TABLE 4-6.--Consumption patterns, United States and Puerto Rico, 1950 and 1963-64

Item	United States		Puerto Rico	
	1950	1963	1950	1964
Food, tobacco, alcohol	33.8%	25.4%	43.9%	32.6%
Clothing, accessories	11.9	9.9	10.1	10.6
Personal care	1.2	1.7	1.0	2.2
Housing & household operations	10.2	13.0	21.4	21.3
Medical care and death	4.9	6.8	3.1	4.5
Personal business services	4.5	6.6	1.1	1.4
Transportation	11.6	12.6	7.9	11.8
Recreation	5.8	6.1	6.1	9.0
Miscellaneous expenditures	2.5	3.8	5.3	6.5
Total personal income expenditures	\$194,277,000	\$375,000,000	\$670.6 ^a	\$2,173.3 ^b
Disposable personal income in millions	\$207,700,000	\$402,500,000	\$637.8	\$2,056.8

^a1950 Puerto Rican figures include \$8.1 million of expenditures by non-residents, which amounted to 1.2% of total expenditures.

^b1963 Puerto Rican figures include 101.5 million dollars of expenditures by non-resident Puerto Ricans, which amounted to 4.7% of total expenditures.

Source: United States Statistical Abstract. 1965.
Ingreso y Producto, Puerto Rico, 1965, Junta de Planificacion, Table 1, p. 8 grd., table 13, p. 32.

that Puerto Ricans are eating higher-quality foods. Possibly part of this is due to free food, part to higher incomes, and part to better food distribution.

TABLE 4-7.--Index of per capita consumption of selected foods, 1940-1960

Product	1939 - 40		1953 - 54		1959 - 60	
	Lbs.		Lbs.	Index based on 1939-40	Lbs.	Index based on 1939-40
Total animal protein products	206		346	167	521	253
Meat products	40		51	128	72	180
Fish products	19		20	105	15	93
Dairy products	143		267	182	420	296
Eggs	4		8	200	14	350
Total other food products	894		949	106	981	109
Vegetables: starchy	392		322	82	255	65
other	84		94	112	123	170
Fruits	102		83	82	147	146
Grains	187		224	119	211	113
Fats and oils	31		37	119	39	125
Nuts	••		••	••	4	••
Coffee, cocoa, tea	111		12	109	12	109
Sugar products	76		97	127	97	130
Spices	••		••	••	••	••
Beverages	11		80	727	93	845
Total per capita food consumption	1,100		1,295	118	1,502	137

Source: "Food Consumption in Puerto Rico for the Fiscal Year 1959-60," mimeograph put out by the Economic Development Administration, Summary I, p. 4.

Free Food Program

The free food program has been another of the contributory factors to the lowering of the per cent of consumption expenditures spent on food. It is sponsored by the U. S. Department of Agriculture and the Commonwealth Department of Health. In 1956, as a result of a hurricane, a free food program was established. Needy families were able to obtain U. S. Department of Agriculture surplus foods through the Puerto Rican Department of Health. In 1957-58, over 8 million dollars worth of food (valued at its cost to the government) was distributed. The program was expanded by bits and pieces. A major addition was a school lunch program. Later, high protein foods were made available to pregnant women. The eligibility requirements have been loosened so that today no Puerto Rican needs go hungry. In 1965, rice, flour, butter, powdered milk, dried eggs, and lard were given to needy families. The federal government bore the cost of the original food, as it does for every other U. S. state. In fiscal 1965, the cost to the government of food given to needy Puerto Ricans was nearly 25 million dollars. The development and growth of this free food program has been a boon to the development of the retail food distribution system. No longer is the commercial sector forced to make ethical judgments regarding food for the indigent. The poorest families now receive their needs through government channels. Retailers

and wholesalers are not forced to give credit to those very poor families who may never pay anyway, so the retailer has not the burden of unpaid bills as he had in 1950 when Branson made his study. Neither is the retailer forced to suffer the consequences of pilferage and robbery from those who have insufficient money to buy food. Thus, the Puerto Rican government has removed a burden from the commercial food distribution sector.

The retail value of this food give-away program is considerably above the government cost. Assuming that the government cost is 50 per cent of retail price, then in 1965 the retail value of the free food program was nearly 50 million dollars, 9 per cent of total food consumption of \$567 million. The public records indicate that some member of 20 per cent of Puerto Rican families received free food. Yet, only 5 per cent of the families admitted receiving that assistance in the consumer food marketing study survey, one portion of the Latin American Food Marketing project.

Some possible explanations include (1) bias to admitting receiving free food, or (2) a bias in income because the survey was conducted in only two urban areas, San Juan and Mayaguez.

Diet Changes

This diet change is readily indicated by the changing make up of imported dollar value. The basic commodities

(rice, dried beans, tomato sauce, lard, cod, and salt pork) accounted for 38 per cent of total food imports in 1950; but, by 1963, these same commodities accounted for only 23 per cent of total food imports.

One possibility is that price decreases in these basic commodities accounted for all or part of the relative decline in importance. Calculation of cost per unit for each commodity indicated that none of the prices decreased. In fact, all of them increased since 1950.

Shopping Habits

There is only a limited amount of direct factual evidence of consumer behavior in Puerto Rico during and since the early fifties. Yet, there have been studies of various aspects of family life, such as mental illness and birth control. The Department of Labor conducted decennial surveys of consumer expenditure in 1943, 1953, and 1963. One can infer from the studies of Galbraith and Holton, census data, and the Labor Department's survey, that in the early fifties Puerto Rican families were poor. Few people had any durable goods, such as refrigerators or automobiles. Predominantly, families bought food on credit. They bought fresh fruits and vegetables in the plaza. The great changes in wages, the even greater changes in total output, accompanied by migration to and from the United States mainland, contributed to the changes in the Puerto Rican's buying habits.

A part of the Puerto Rican phase of the Latin American Food Marketing Study in 1965-66 consisted of a survey of families in San Juan and Mayaguez. The survey consisted of 246 households in standard metropolitan statistical areas of San Juan and 141 households in Mayaguez.⁴

Increase in Ownership of Consumer Durables

Although there was only one car for every 75 persons in Puerto Rico in 1946, the survey indicated that half of the families in San Juan and Mayaguez owned cars in 1965. The ownership of refrigerators is almost universal, which can be seen in the table below.

TABLE 4-8.--Percent of families owning cars, refrigerators, and freezers, San Juan and Mayaguez standard metropolitan statistical areas, 1965-66

Item	San Juan	Mayaguez
	%	%
Car	48	50
Refrigerator	96	92
Freezer capacity of 8 lbs. or more in refrigerator	87	78

Source: Consumer Survey, Latin American Food Marketing Study, 1965-66.

⁴It is discussed in more detail in the Foreword. Most of the findings are presented in other reports which can be obtained from: Latin American Food Marketing Study, Michigan State University, East Lansing, Michigan. A few of the findings that bear directly upon food retailing are discussed below.

The Relative Importance of Three
Types of Retail Stores

For years, the plaza del mercado was the place to shop for fresh food. Even in 1966, there was a major Puerto Rican government program that helped municipalities rebuild their existing operations. In the opinion of several local people, the plazas still sold a significant portion of the local produce, yet only 44 per cent of the families admitted buying any food at the plaza within the 2 weeks preceding the interview. The money spent at the plaza was significantly less than other types of stores. Table 4-9 gives the per cent of families spending various amounts at the three main types of retail food outlets. It is obvious from these tables that food stores and supermarkets are much more important than the plaza. The majority of families shop at both colmados and the supermarket.

Table 4-10 is another indication of the importance of the supermarket in 1966. The tables indicate the place of shopping on the basis of income. While the analysis indicated that a statistically significant proportion of higher income families shop at supermarkets than lower income families, a considerable percentage of the poorest families do the majority of their shopping at supermarkets. Thus, there is some truth in the statement that supermarkets are for the rich; but, like so many popular expressions, there is also an element of falsehood for in San Juan 38

TABLE 4-9.--Per cent of families buying & average amounts spent at the plaza, colmado and supermarket, 1965

Item	Plaza	Colmado (small food store)	Supermarket
Percent buying	44	72	58
Most frequent means of transport by those families buying (walking)	66%	83%	69%
Modal distance	Over 1 km.	Same block	Less than 1 km.
Use credit	N/A	57%	9%
Use delivery service	N/A	32%	22%
Modal # times shopped in 2 weeks	2	Bimodal 2 + 8	2 San Juan 1 Mayaguez
Average \$ spent in previous 2 weeks:			
San Juan	\$3	\$22	\$28
Mayaguez	\$6	\$24	\$15

Source: Latin American Food Marketing Study survey, 1965-66.

per cent of the poorest families had purchased most of their food at supermarkets in the past 2 weeks.

Overall, there was a significantly greater percentage of families buying at the supermarket in San Juan. One of the reasons for a higher percentage of supermarket purchases in the San Juan area is the greater number of supermarkets there. There is one supermarket for every 2,000 persons in San Juan, but only one for every 10,000 persons in Mayaguez.

TABLE 4-10.--Per cent of families in four income groups buying their food at supermarkets in San Juan and Mayaguez SMSA, 1965-66

Shopping level	Per cent overall	Family income level ^a			Total N
		Low	Medium	High	
San Juan:					
Supermarket	64.5	38.1%	65.5%	94.2%	149
Other	35.5	61.9%	34.5%	5.8%	82
Total N =		63	116	52	231
Mayaguez:					
Supermarket	38.8	13.8%	43.2%	58.8%	52
Other	61.2	86.2%	56.8%	41.2%	82
Total N =		29	88	17	134

^aLow = less than \$999
Medium = \$1,000-4,999
High = \$5,000 or more

Source: Latin American Food Marketing Study survey, 1965-66.

Lack of Importance of Maids

Before conducting the survey, many persons in depth interviews revealed they thought the maid was a most important person in the shopping for food. The consumer survey indicated this not to be true. Table 4-11 indicates the important persons in the purchase of foods for the family. Even though a maid was not found to actually purchase the food, two per cent of the families did have a maid who prepared the meals.

TABLE 4-11.--Significant persons in the purchase and preparation of food in San Juan and Mayaguez, SMSA, 1965-66

Question	City	Housewife	Man	Husband & wife	Maid
"Who decides what food to buy?"	San Juan 246	83%	7%	10%	0
	Mayaguez 141	75%	12%	11%	0
"Who purchases the food?"	San Juan 246	77%	14%	8%	0
	Mayaguez 141	54%	27%	14%	0

Source: Latin American Food Marketing Study survey, 1965-66.

Co-op Membership

Cooperatives of various forms have been vigorously promoted by the government of Puerto Rico since 1945. One of the results of the Food Commission work in 1954 was a revitalized program of strengthening food cooperatives. Yet, by 1965, in San Juan and Mayaguez, food cooperatives were not as important as one might have expected. Only 4 per cent of San Juan consumers belonged to a co-op, as compared to 13 per cent of Mayaguez consumers. Mayaguez co-op members were more loyal to the co-op, as indicated by their answer that 59 per cent of the co-op members would continue buying at the co-op even if other supermarkets had lower prices. This may be because the co-op in Mayaguez was the only supermarket-type store prior to this. The co-op in the small community of Mayaguez did provide a valuable service in terms of a wide range of goods and the low prices

it fostered. On the other hand, only 33 per cent of San Juan co-op members would continue buying at the co-op if prices were lower elsewhere. This difference may be due to alternatives available to consumers.

Sense of Community

The small per cent of membership in food cooperatives should not be taken to indicate a lack of sense of community. Puerto Rico is not like the backward society that Banfield⁵ studied in which every person was out for himself and did not see how any good could come from helping others. In Puerto Rico, one senses a faith that things can be made better by hard work. First, there is a trust in the government, based on 25 years of experience of the government fulfilling its promises. Second, although there are complaints about long lines and minor inefficiencies of government offices, the people seem to share a common belief that the government is honest and truly reform-minded. The consumer survey confirmed this sense of community. Sixty-seven per cent of the respondents who thought improvements could be made in their own community said they would be willing to devote 50 hours of free time annually to work on community improvement projects.

Use of Information about Food

For a number of years, Mrs. Judith Frias de Ramirez of the Agricultural Extension Service has been preparing a

⁵Edward C. Banfield, The Moral Basis of a Backward Society. (Glencoe, Illinois: The Free Press, 1958.)

newspaper column for the most widely read Spanish language daily newspaper, El Mundo.

In addition, since the mid-fifties there has been an increasing use of newspaper advertisements by food retailing firms. The table below notes the consumer response patterns.

TABLE 4-12.--Positive reaction to newspaper information about food, 1965-66

Question	San Juan	Mayaguez
"Do you read Mrs. Frias de Ramirez's food information column?"	22%	21%
"Do you read newspaper food advertisements?"	32%	45%
"Do the advertisements influence your purchasing patterns?"	38%	35%

Source: Latin American Food Marketing Study survey, 1965-66.

The table indicates that more families read and claim to be influenced by commercial advertisements for food than by the extension service columns. Although over 20 per cent of the families claim to read the extension services column, a greater percentage claim to read food-store advertisements.

Measurement and Evaluation of Changes in Food Retailing

Introduction

The goal of this section is a more complete description of: (1) the costs of food retailing and how those costs

have changed over the years; (2) differences in retail prices in very large and very small stores; and (3) some measures of efficiency in 1965 with comparisons to earlier times and other areas. In addition, it had been planned to relate a number of variables to sales growth. The measurement of this variable was operationalized as the difference between 1959 and 1964 annual sales.

Changing Costs of Operation

An average gross margin of 23 per cent was reported for Puerto Rican food retailers in 1950.⁶ This figure is compared with gross margins calculated by the Minimum Wage Division of the Commonwealth Department of Labor.

The Department of Labor is required by law to make a detailed study of both revenues and expenses of each industry biennially. The results are tabulated by sub-type within industries as well as by geographical areas. One of the industries is retailing. Two sub-classifications within retailing are supermarkets⁷ and retail food stores (i.e., stores which sell food to take home). The data are presented for the entire island and then by three zones. This chapter deals with the data for the entire island and Zone 1, which is almost equivalent to the San Juan

⁶Galbraith and Holton, op. cit., p. 29.

⁷Defined as 3,000 square feet or more with self-service.

TABLE 4-13.--Dollar sales^a of establishments in the sample of Labor Department survey of food retailers, Puerto Rico and Zone 1

Year	Puerto Rico		Zone 1 - San Juan SMSA	
	Supermarkets (census)	Food stores	Supermarkets (census)	Food stores
(thousands of dollars)				
1955	7,314	NS ^b	6,048	NS ^b
1956	14,010	97,357	12,411	31,345
1959	38,260	87,272	34,945	19,075
1960	49,835	NS ^b	40,920	NS ^b
1961	56,042	137,434	45,237	32,337
1963	77,005	122,202	60,363	44,941
1964	85,398	132,680	65,198	42,987

^aThe figures in Table 4-13 for any given year will be less than the Census of Business because they do not include: (1) those firms without employees which amounted to over 18,000 establishments selling \$37,000,000 of food and drink in 1963; (2) restaurants or restaurants within hotels which had sales of \$55,000,000 in 1963; (3) some small firms which are sampled instead of censused. If the figures above are added to the given sales figures and an estimate is made for the sampling ratios involved, they are indeed comparable to the Census of Business. By these standards, between 12 and 20 per cent of sales of S.I.C. 54X and 581 are restaurant and bar sales.

^bNot Sampled

Source: "La Industria de Comercio al por Menor," Estado Libre Asociado de Puerto Rico, Departamento del Trabajo, mimeographed, various years.

Standard Metropolitan Statistical Area. It is necessary to look at both of these areas because many of the most meaningful changes in food retailing have been concentrated in San Juan. The data was collected from a disproportionate stratified sample with a census of the largest stores. Stores without employees are not sampled at all, and the fewer the employees the less the sampling percentage. The accountants who prepare these reports have access to records of the various licensing authorities, the income tax returns at the Department of the Treasury, as well as the company's own records. The ground rules under which the data has been collected have remained relatively constant since the first survey was run in 1955. Table 4-13 presents total sales figures for the stores included in the various surveys. It is obvious that sales of supermarkets have grown more than sales of other food stores with employees.

According to Table 4-14, the gross margins for supermarkets have increased from an average of 12.2 per cent in 1955 to 17.8 per cent in 1964. The National Commission on Food Marketing reported a similar trend in the United States.⁸ However, even as late as 1964, gross margins for both types of food retailers were considerably

⁸National Commission on Food Marketing, Organization and Competition in Food Retailing. Technical Study No. 7, U. S. Govt. Printing Office, 1966, p. 216.

TABLE 4-14.--Average profit as a per cent of sales, of supermarkets and food stores in Puerto Rico, various years

Item	1956		1959		1960		1963		1964	
	S.M. ^a	F.S. ^b	S.M.	F.S.	S.M.	F.S.	S.M.	F.S.	S.M.	F.S.
(Per cent)										
Gross profit	12.2	14.2	15.0	11.9	17.1	.	17.4	12.2	17.8	12.0
Net profit	4.1	3.0	2.8	3.1	3.7	.	4.2	2.6	4.0	2.1

^aSupermarkets^bFood Stores

Source: "La Industria de Comercio al por Menor," Estado Libre Asociado de Puerto Rico, Department del Trabajo, mimeographed.

less than they were reported in 1950. The larger gross margin of supermarkets since 1959 might imply higher prices. But, as will be discussed more thoroughly in a later section, the implications are that supermarkets in reality have lower retail prices. Lower retail prices with a larger gross margin imply better buying practices.

However, while the gross margins of supermarkets were increasing, the gross margins of other food stores have been falling. Gross margins of other food stores in San Juan have dropped from 20.1 per cent in 1956 to 15.5 per cent in 1964, where the supermarket growth has been the greatest.

The trend of net profits has been similar to the trend of gross profits. Increased wages have absorbed much

of the increase in gross profit. Still, average net profit in 1964 of 4 per cent was considerably better than 2.1 per cent average for all Supermarket Institute members.⁹

The number one success story.--Pueblo Supermarkets, the company that most every knowledgeable person admits has brought about much of the change in Puerto Rican food distribution, has been even more profitable than the average. As shown in Table 4-15, Pueblo's gross profits have increased most rapidly since 1960 when a wholly owned subsidiary, Pueblo Wholesale Company, was formed. In fact, it can be seen by comparing Tables 4-14 and 4-15 that Pueblo profits have pulled ahead of the average since 1960. Since that time, the management of Pueblo has concentrated on integration and coordination of marketing activities. It has purchased food processing plants, helped an egg "corporative"¹⁰ get started, and encouraged local meat production.¹¹ (In late 1966, the partially owned cattle fattening operation was closed down due to financial and cattle supply problems.)

⁹ National Commission on Food Marketing, Excerpts from Supermarket Institute Figure Exchange Reports, 1954-1964, Technical Report #7, Supplement #1, U. S. Govt. Printing Office, 1966.

¹⁰ "Corporative" is a term coined by Dr. Charles Slater which denotes a local solution to some local problems. Corporatives are run like corporations, but are organized and have the benefits of cooperatives.

¹¹ Market coordination activities of the last 15 years is the main thrust of a thesis by Kelly Max Harrison of Michigan State University, 1967.

TABLE 4-15. Sales and cost of goods sold by Pueblo Supermarkets, fiscal year ending January 31, various years

Fiscal year	Gross sales (in thousands)	Cost of goods sold (in thousands)	Gross profit	Net profit after tax
	\$	\$	%	%
1959	13,830.9	11,472.4	17	3.3
1960	17,663.8	14,549.9	17	3.9
1961	21,867.8	17,793.0	18	4.1
1963	31,370.7	25,335.4	19	4.4
1964	38,413.5	30,975.6	19	4.2
1965	47,659.7	37,206.0	21	3.9
1966	55,787.8	43,189.9	22	4.2

Source: Annual reports.

The success of Pueblo has attracted the attention of competitors who have become established in Puerto Rico within the past 2 years. The arrival of aggressive competition is probably a healthy omen, since Pueblo was faced with the "General Motors" dilemma.

Pueblo, with nearly 20 per cent of total Puerto Rican grocery store sales and perhaps 30 to 40 per cent of San Juan grocery sales, is so large that its actions are quite visible. Its high profits are a matter of public record. If profits and growth were to continue unabated, its operations might face possible monopoly problems. On the other hand, Pueblo has the capability of reducing its

retail prices in order to lower profits. A 2 per cent cut in prices would bring Pueblo's net profits down to the most profitable of United States supermarket firms. But then, on the basis of Table 4-14, half the regular food stores would be losing money if they met those prices.

Selected efficiency comparisons.--In 1950, Galbraith and Holton calculated sales per store, per employee, per customer transaction, inventory turnover, and the number of suppliers for various size retail stores. Sales per employee are compared for selected years of the Census of Business in Table 4-16. Various measures are compared to the 1965 survey data in Tables 4-17 and 4-18.

TABLE 4-16.--Annual sales per employee in grocery stores, 1948-49 and 1963, as indicated by the U. S. Census of Business

Sales Size	Dollar Sales per Worker			
	1948-49		1963	
	U.S.	P.R.	U.S.	P.R.
All stores	24,216	970	48,631	8,990
Under \$50,000	12,581	577	N/A	5,403
\$50,000-299,999	25,875	1,524	N/A	16,097
\$300,000-999,999	39,372	N/A	N/A	27,653
Over \$1,000,000	37,214	N/A	N/A	36,743

Sources: Galbraith and Holton, Marketing Efficiency in Puerto Rico, Harvard University Press, 1954, p. 17.
National Commission on Food Marketing, 1966, p. 15.
1963 Census of Business, p. 45, Table C-3.

It is obvious that the scale of retailing has increased considerably. However, there are still many more food stores per inhabitant in Puerto Rico than in the United States. Yet, the total number of stores has remained constant in spite of the increased economies of scale. These economies of scale are best illustrated by sales per employee and weekly sales per square foot of the largest stores. The size of customer transactions shows a considerable difference as size increases. Also, it appears that the largest store sizes in both San Juan and Mayaguez compare favorably with U. S. productivity levels in terms of an inventory turn. Fifty per cent of Supermarket Institute members in the United States had inventory turnovers between 14 and 23 times annually. It can be seen that the larger Puerto Rican stores approach the average U. S. supermarket efficiency level. In Tables 4-16, 4-17, and 4-18 it is evident that the largest store category in each city was by far the most efficient.

The data presented in this section seem to indicate that the larger stores, i.e., supermarkets, are more efficient. The larger stores have the same or lower prices, the highest sales per employee, and the highest sales per customer transaction. The largest stores have the fastest inventory turnover and the most sales per man hour. They also have the highest average net profits.

TABLE 4-17.--Average sales (dollars) per store, per employee, and per customer, Puerto Rico, 1950 and 1965 - 66

Category as determined by municipal license	Per store per year		Annual sales per empl.		Per customer transaction	
	1950	1964	1950	1964	1950	1965
	P.R.	San Juan	P.R.	San Juan	P.R.	San Juan
		(mean)				(median)
Annual sales less than \$12,000	5,892	15,953	4,319	3,500	5,475	.48 .44
\$12,000-47,999	24,156	37,338	10,707	13,550	20,825	1.27 1.55 3.33
48,000-119,999	69,036	127,167	17,815	11,825	29,975	1.77 1.39 10.67
120,000-479,999	210,996	337,650	22,810	22,550	N/A	4.00 4.33 N/A
480,000 or more	.	2,035,927	.	48,764	N/A	. . 7.24 N/A

¹In this and other tables using survey data, it will be noted that Mayaguez retailers have only 3 classes while San Juan classes compare to the 1950 data. The size assessment was made on the basis of municipal licenses. Each community decides its own method of assessing. It seemed that Mayaguez authorities taxed the larger establishments at a lower rate by placing them in a smaller category than they belonged in.

Source: 1950 data, interpolated from Galbraith and Holton, Table 5, p. 17
1965-66 data, Retailer Survey.

TABLE 4-18.--Average annual inventory turnover and average sales per man hour, Puerto Rico, 1950 and 1965-66

Category as determined by municipal license	Annual inventory turn		Weekly sales per sq. ft. selling space		Sales per man hour	
	1950	1964	1964	1964	1964	1964
	P.R.	San Juan	Mayaguez (mean)	San Juan (median)	San Juan	Mayaguez (median)
Less than \$12,000	12.8	10.5	8.3	1.09	1.40	2.19
\$12,000-47,999	12.9	4.7	6.8	1.05	5.42	8.33
\$48,000-119,999	12.7	6.4	17.2 ^a	1.21	4.73	10.79
\$120,000-479,999	12.7	8.3	N/A	2.88	9.02	N/A
\$480,000 or more	.	14.6	N/A	8.68	31.78	N/A

^aThe difference is probably due to the different standard for licensing by size in the two cities. This category contains the supermarkets in Mayaguez, all of which appear to be grossing well over \$2,000,000 annually.

All these advantages seem reasonable, but they contradict the findings of the National Commission on Food Marketing. In the United States, utilizing confidential data from the 9 largest food chains and holding store size constant at various levels of 4,000 through 16,000 square feet, there was found to be no statistical significant correlation between store expense and store size.¹²

The analysis by the National Food Commission seems to be remiss on at least two counts: (1) it seems not to have analyzed a large enough range of store sizes, and (2) the data was analyzed by company. Perhaps an analysis by metropolitan area would have led to considerably different conclusions.

Procurement Problems

The one area of food retailing that has not met or contributed to the changing conditions in Puerto Rico is food wholesaling. However, that is beyond the scope of this thesis. It is enough to note that the mean number of suppliers serving the largest stores in San Juan is 73. Even the smallest stores (i.e., those retailers whose sales are \$12,000 annually or less) average 6 wholesalers. Since the Department of Labor reported 1964 average gross profits of 11.2 per cent in food wholesaling and since some large

¹²National Committee on Food Marketing, op. cit., p. 140.

retailers were their own wholesalers,¹³ most local retailers were at a distinct disadvantage in terms of cost. Those operators who were large enough to operate their own wholesaling were saving at least part of that 11.2 per cent gross profit of the wholesaler.¹⁴

Size of Stores

The average size of food stores, eating and drinking places, in terms of sales, is increasing in Puerto Rico but not as fast on the average as in the United States. While Tables 4-17 and 4-18 referred to this, Table 4-19 gives further indications of this growth. The sales of stores selling less than \$5,000 annually have remained constant at about 5 per cent of total food sales from 1954 to 1963 for all of Puerto Rico. On the other hand, in San Juan, where supermarket growth has been concentrated, the sales of these smallest stores have slightly decreased from 2.1 per cent of total food sales to 1.9 per cent. During these same 9 years, those stores selling more than \$1,000,000 annually have grown from 1 per cent of sales to 17 per cent for the whole island and, according

¹³Of the two largest operators in the San Juan area, Pueblo averaged 50 per cent storage space, and the other averaged 45 per cent storage space in addition to the small warehouse they had.

¹⁴Supermarket Institute figure exchange gives warehouse and delivery costs for supermarkets at less than 2 per cent in the United States, 1964.

TABLE 4-19.--Average annual dollar sales of food stores and eating and drinking places, Puerto Rico, San Juan SMSA, and Mayaguez SMSA

Year	Total island	San Juan	Mayaguez
1949	\$ 6,514.72	\$ 13,545.88	\$ 8,434.46
1954	15,754.06	27,888.15	10,939.01
1958	13,472.78	25,668.09	13,186.44
1963	18,252.93	34,060.91	18,762.24

Sources: 1949 Table I, page 3; San Juan Table 63; and Mayaguez Table 50; 1954 Table I-1, p. 3, San Juan Table II-1, p. 48; and Mayaguez III-2A, p. 144; 1958 Table A-1, p. 12; San Juan Table II-1, p. 47; Mayaguez Table III-2A, p. 149; 1963 Table A-1, p. 12; San Juan Table Cl, p. 34; Mayaguez Table Al, p. 14.

to the same Census of Business, in the San Juan area, these large stores account for 31 per cent of total sales.

There has also been a change in number and dollar sales of corporation grocery stores. In 1949, corporation sales of groceries, almost all of which can be assumed to be large supermarkets, amounted to \$3,439,000, but by 1963 this figure had jumped to \$86,089,000 with over half of the growth coming in the latter 5 years of this time period. The growth of corporation sales was even more rapid in the San Juan area over the same time period. The Census of Business reports San Juan metropolitan area corporation grocery sales at \$30,181,000 in 1958. By 1963, corporation grocery store sales had increased to \$71,036,000.

Thus, while total sales from food stores and eating and drinking places increased from \$290,028,000 in 1958 to \$411,164,000 in 1963, or 42 per cent, the dollar sales of supermarkets increased 48 per cent between 1959 and 1963. And, in those same 4 years, Pueblo's sales increased 127 per cent. Thus, supermarkets in total have had a disproportionate increase over that time period, and Pueblo sales increased even more.

Trend Toward Cash

In 1949, Galbraith and Holton reported that 94 per cent of the retail food stores made some credit sales, while more than half of the stores did 60 per cent of their total volume of business on credit.¹⁵ The succeeding Censuses of Business indicate a growing trend toward cash sales, especially in the San Juan area. Table 4-20 indicates this trend more explicitly. It was the smaller stores that were the heavy sellers on credit, as shown in Table 4-20. It is also clear that credit sales have decreased more rapidly in San Juan than in Puerto Rico as a whole.

Differences in Retail Prices

While price level information and computed price indices are helpful in determining changes over time, they

¹⁵Galbraith and Holton, op. cit., p. 178.

TABLE 4-20.--Trend toward cash sales in food stores, eating, and drinking places, 1954, 1958, 1963.

Item	Establishments Reporting Some Credit Sales ^a		Establishments Reporting Credit 61-90% of Total Sales	
	Estab-lishment	Total Sales ^a	Estab-lishment	Total Sales ^a
<u>Puerto Rico</u>				
1954	16,299	162,204.9	4,021	48,352.7
% of total ^b	93.3%	78.2%	23.3%	23%
1958	17,204	178,472.5	4,952	58,336.9
% of total	80.3%	62%	23%	20%
1963	17,862	248,062.3	4,651	63,399.2
% of total	80%	60%	20.7%	15.4%
<u>San Juan Standard Metropolitan</u>				
1954	3,093	49,476.3	795	13,947.3
% of total	74%	66%	19%	19%
1958	3,031	48,908.6	734	12,565.4
% of total	70%	47%	17%	12%
1963	3,558	74,023.0	524	11,543.0
% of total	66%	42%	10%	6%

^aAll sales figures in \$1,000.

^bAll percentages refer to total food stores or food store sales.

Source: 1954 Census Table I-6 and Table II-6;
1958 Census Table I-6 and Table II-6;
1963 Census C-5.

tell nothing about prices in different kinds of stores at a point in time. Neither do gross profit comparisons tell anything about comparative retail prices. A higher gross profit might reflect higher retail prices, lower purchase prices, or both. In this section, prices of specific items are compared. As a part of an extra study of small retailers in mid-May 1966, it was decided to collect prices from nearby supermarkets. Prices were collected on 9 food items which are used by even the poorest Puerto Rican family. In addition, a comparison was made on the prices of the popular Puerto Rican beverage, rum. Table 4-21 indicates that the average supermarket price was less than the average small store price in 5 of the 9 food items, as well as all brands of rum. The greatest absolute price difference was on the dried cod fish ("bacalao") which, according to the interviewers, was even more pronounced because the quality of the product was higher in the supermarkets where the price was lowest. The highest percentage differences were on flour and lard.

Where supermarkets had higher prices, there was an average of 9 per cent difference. Most of this difference, though, was due to the 30 per cent price difference on plantains.¹⁶

¹⁶There is a master's thesis being written on the price spreads in crops like plantains. Mr. Luis Davis Flores will write his thesis in economics at the University of Puerto Rico as part of the LAFS project. See the Foreword for a better description.

TABLE 4-21.--Price comparisons on basic foods, supermarkets and small stores, San Juan, Puerto Rico, May 1966

Item	Pueblo 3 Stores	Lucky Seven 3 Stores	Grand Union 3 Stores	Total Mean Price for Su- permarkets N=11	Mean Price for Small Re- tailer N=40	Difference - = S.M. Lower
Rice (packaged)	13.0¢	13.0¢	13.0¢	13.0¢	13.0¢	. .
Dried cod fish	27.0	33.0	32.0	30.6	35.1	-4.5¢
Flour	12.3	11.3	8.0	10.9	14.1	-3.2
Lard	20.0	16.3	20.0	18.5	22.9	-4.4
Evaporated milk (Carnation)	17.0	17.3	18.0	17.2	18.3	-1.1
Plantains	7.3	8.0 (2 stores)	8.0	7.1	5.5	1.6
Dried beans (packaged)	21.0	19.6	20.5	20.5	19.3	0.9
Tomato sauce (8 oz.)	8.7	10.0	10.0	9.2	10.0	-0.8
Corn meal (packaged)	10.3	10.3	10.0	10.2	10.1	0.1
Rum (Don Q Llave)	\$2.057	\$2.09 (1 store)		\$2.01	\$2.36	-35
Others		\$1.545 (2 stores)		\$1.41	\$1.94	3.0
All rums				\$1.86	\$2.12	6.0

In addition to this factual evidence of prices, which indicates the supermarket prices are similar and in general lower than small store prices, the owners of the small stores were asked why their sales had decreased. All respondents who reported a sales change reported a sales decrease. Of the 75 per cent who reported a sales decrease, half blamed it in one way or another on the fact that supermarkets sell for lower prices.

In the larger store, there is more freedom of action in setting prices in order to achieve a profitable mix. Basic commodities, which all families buy, have a relatively inelastic demand curve from an industry viewpoint. That is to say, the consumption of rice, beans, or dried cod fish, which are very important in the average Puerto Rican diet, will not vary much regardless of the average price. On the other hand, certain convenience foods, such as T.V. dinners, probably have a highly elastic demand from an industry view. However, the sale of many food products with a highly elastic demand, and greater profit potential, depend to some extent on impulse sales to the consumer. And the way impulse sales are made is to get the consumer into the store. Convenience foods and/or new products are bought mainly by higher income people. These convenience foods may have inelastic demand at the firm level. That is, the customer may buy a convenience food without much regard to the price once he sees it in the store.

If these situations are perceived to be true, the retailer might well cut prices on the basic commodities, knowing that they are purchased by great numbers, and hope that the lower price on these commodities will act as a drawing card to bring people into the store. In addition, he might reason that with increased traffic he can make a greater dollar profit by selling more of the relatively higher profit foods to the high-income families. If, in fact, this happens, as it appears to in Puerto Rico, it can have the same effect as a progressive income tax. In this case, as with a progressive income tax, the rich families who are most able to afford it are paying more. Because of competition, the basic commodities are priced near to or perhaps even below cost.¹⁷ So the poor family gets food at a lower price than it could in the smaller store where only the basic commodities are sold.

The other side of this situation of basic commodities being priced at or near cost in the larger stores is that the small retailer is then faced with a dilemma. He must:

1. Let the price spread widen between his small store and the supermarket and thereby lose customers, or
2. Meet the lower price in his own store and thereby lose profit, or

¹⁷ There was some limited indication, on the basis of personal attendance at a merchandising meeting, that the prices of basic commodities will be driven even lower in the near future.

3. Expand his store to sell a wider line at a time when his profits are decreasing.

Supplemental Survey

As previously cited, an additional survey was made in May 1966. The sample was purposive and the number was small (N = 40). But it was felt necessary to have a better indication of what had happened to the small retailers and why there had not been greater opposition to the rapid growth of supermarkets in the San Juan area.

Three reasons seemed to predominate:

1. Supermarkets had taken business from the small stores, and, as they had done this, the husband had lost his usefulness as a shopper for groceries. He would still stop at the colmado, but instead of buying food, he bought a beer or two. In this way, the small stores became similar to neighborhood taverns.

2. The beer and rum companies, with funds available for merchandising and advertising, made it easy for the small food stores to sell beer and rum.

3. The operators knew that the government supported the large store operations.

The majority of the 75 per cent of respondents who claim that their sales had gone down blame it on the lower prices that consumers find in supermarkets. According to the respondent's recall, there has been very little, if any,

increase in sales of any type of item. The only claims of increase have been on sales of "liquor for on-premise consumption" (7 per cent), and sales of "liquor to take out" (4 per cent). Most of the decrease has been in food. In fact, 86 per cent of respondents answered that their food sales had either "decreased a little" or "decreased a lot." Alcoholic beverage sales decreased less: about 72 per cent of respondents claim decrease in "liquor sales to take out," and -- the lowest rate of decrease -- about 50 per cent of respondents said that their "liquor sales for on-premise consumption" decreased either a "little" or "a lot."

Beer and rum sales seem to have been of some importance to small retailers, especially sales of these alcoholic beverages for on-premise consumption. Although there is insufficient evidence to say with assurance that the increased consumption of beer and rum contributed to the ease with which supermarkets have become dominant, it can be inferred that liquor sales have definitely helped the small retailer to subsist after the supermarket invasion.

Although a small retailer often has to pay supermarket retail price for the bottle of rum, he profits on it by selling it by the drink -- something that the supermarkets cannot do. Nevertheless, when asking the small retailer, "What have you done to defend yourself from

supermarkets?" only one respondent answered that he had "devoted more to liquor." Nevertheless, about 80 per cent of respondents who sell liquor claim that they would not obtain enough profits to stay in business if they were to stop selling liquor.

Thus, it does seem that beer and rum sales have become more important in the operations of the smaller store.

Employment Effects

Though the changes were not for-ordained, the previous sections discussed how the largest stores have been the most successful. Still, the aggregative employment statistics suggest a double-edged employment effect from changes in food retailing.

At the present time in many of the Latin American countries, there is a great percentage of consumption that does not enter into the market economy at all. It is consumed where it is grown. Thus, there are fewer jobs than there would otherwise be if more food moved through the retailing sector. An increasing percentage of food moving through the marketing system at any given point in time will mean an increasing number of jobs. This phenomenon has frequently been overlooked by theoreticians as well as political decision makers who have recognized the possibility of changing the food distribution system. These people have been concerned about the elimination of disguised unemployment in food retailing. Galbraith and Holton in their 1954 report

were concerned with the unemployment that would become obvious if food retailing were rationalized.

Since the days of Adam Smith, most persons have accepted the view of specialization that he articulated: with specialization one's standard of living can be higher. Therefore, from a theoretical standpoint, it would seem likely that many families would prefer to specialize and buy their food, if the food they need is priced lower and/or they have increases in real income and/or the food becomes more available in the food stores. In Puerto Rico, a greater percentage of total food consumption is moving through the commercial sector. Table 4-22 indicates how the percentage has increased since 1949.

In Puerto Rico, only 44 per cent of the total food consumption was passing through the retail food stores in 1949. As a result of private and intensive government effort to bring about both industrialization and marketing changes, over the years an increasing percentage of the food has been passing through the marketing sector. By 1958, 63 per cent of the food consumed was passing through the retail food stores. This additional percentage passing through the retail sector created over 12,000 new jobs at 1958 average productivity levels.¹⁸ Food retailing changes did mean increased employment in this particular case. One could say

¹⁸There were a total of 41,535 people working in retail food stores in 1958.

TABLE 4-22.--Per cent of food consumed that is purchased in the retail system food stores and eating and drinking places, various years, 1949-1963, Puerto Rico

Year	Number Food Stores, ^a Eating and Drinking Places	Sales Value of Food Purchases (Millions)	Total Value Food, Liquor and Tobacco Consumption (Millions)	Per Cent of Food Moving Through Retail Store
1949	19,811	130.1	294.4	44
1954	17,558	208.9	390.7	53
1958	31,327	290.0	459.9	63
1963	22,526	411.7	656.6	63

^aGrocery stores not separated from eating and drinking places.

Sources: 1949 Census of Business, Puerto Rico, Table 1, p. 12.
1954 Census of Business, Puerto Rico, Table I-1, p. 3.
1958 Census of Business, Puerto Rico, Table I-1, p. 3.
1963 Census of Business, Puerto Rico, Table A-1, p. 12.
Ingreso y Producto, Puerto Rico, 1965, Junta de Planificacion, Febrere 1966, Table 13, pp. 32-33.

that in regard to food distribution, more of a "national market" was and is being created.

There have been increasing efficiencies in food retailing. Since 1950, average sales per employee have increased considerably. Still, there is a wide range of productivity among retailers. For example, in 1963, the dollar sales per employee for supermarkets was \$40,000, while the average dollar sales for smaller stores was only \$5,000 per

employee. Suppose that Puerto Rico had had only supermarkets with the average productivity of \$40,000 per employee. Then employment could have been as low as 10,000 people working in food distribution, instead of over 47,000 people. On the other hand, the opposite would be that without any supermarkets, and if all stores had productivity of \$5,000 per employee, employment would be over 80,000 in food distribution.

Thus, it can be seen that the employment effects of changes in food retailing are two-sided in nature: increased employment, as a result of more food passing through the marketing system, and unemployment created through increasing productivity of each worker. In the time period under consideration, paid employees working in food stores, eating and drinking places has increased from 2,906 to 25,032.¹⁹ However, total employment has not changed that drastically, because each establishment must have a proprietor and many small stores have family help. The result was that over 23,000 persons were working in food retailing in 1949, as compared to over 47,000 in 1963.

Conclusion

Let us consider the impact of food marketing changes at this industry level of aggregation. Recall that 63 per

¹⁹ 1949 Census of Business, Puerto Rico. Table 9, p. 114.

cent of the food in 1963 passed through commercial channels versus 44 per cent in 1949. \$287,000,000 would have passed through commercial channels in 1963 had only 44 per cent of food been commercially sold. The average productivity in 1949 meant \$5,000 per employee when the food price index was at 91.2; in 1963, the food price index was 144. The per-employee sales in 1963 would have been \$7,900 in current dollars, assuming no change in productivity. Thus, by dividing per capita sales in current dollars into the sale figure as if 44 per cent went through commercial channels, we can estimate the number of employees the food retailing industry would have had if no increase in commercial channels had developed, i.e., $\$287,000,000 - \$7,900/\text{employee}$ equals 36,200 employees. In contrast, the 1963 food retailing employment was 47,000. Such comparisons are specious because other factors changed, such as income and the mix of food products eaten. However, such analysis does suggest that instead of always being a labor releasing industry when developed, food retailing can absorb labor. This is especially true when the productivity increases are accompanied by gains in real income, a relative reduction in retail price, and upgraded quality.

Politicians and technicians have been reluctant to recommend changing the food distribution sector because of the potential political problems resulting from retiring present employees. And, most plans for reform do recommend

increasing possible output per employee. Thus, regardless of possible potential benefits to the consumer, the spectre of immediate and increasing unemployment far outweighs those potential consumer benefits in the mind of the political decision-maker. Puerto Rican politicians thought differently and were willing to risk unemployment.

The above analysis also suggests that in a dynamic economy the consumer benefits can mean increasing employment in food distribution. In Puerto Rico, the aggregate result has been increased employment. At least some of those employment increases have come about because of increasing labor efficiencies and prices lower than they would otherwise have been. Total employment has increased in food distribution and thus new entrants have come in.

Some Methodological Considerations

As mentioned earlier, sales growth was a dependent variable for several hypotheses. It was not possible to utilize it as an operational variable because many respondents did not have written records and could not remember. In addition, over 50 per cent of those 91 respondents with sales over \$12,000 annually have entered the business since 1959, which was the base year for measuring sales growth. Thus, food retailing seems a much more dynamic sector in terms of entry than had been supposed.

Survey

The depth interviews took added importance in this study because of the limited time and money available to devote to any one form, and the differing willingness to respond to the formal questionnaires. (The appendix dealing with the sampling procedure notes how all sizes of food retailing firms were sampled.) As the field work proceeded in Puerto Rico, it was discovered that important but different problems were associated with the smallest and the largest retailers. Nevertheless, the interviewing of the middle range of firms was going as expected.

It was found that among the "subsistence retailers" (e.g., those with a municipal license that listed annual sales of \$12,000 or less), few had any written records of their operations. In addition, many of these small operators found it difficult to understand the questions and/or verbalize answers to some of the questions. As noted in Appendix B, there was a lower interview completion rate as well as a lower rate of adoption of innovations among the smallest firms. Thus, the 49 "subsistence retailers" were eliminated from all the statistical manipulations discussed in Chapter V. They were, however, included in the analysis of Chapters III and IV.

On the other hand, the two largest retail firms in Puerto Rico were not pressed to share certain confidential information with the author. To have reported information

from them would have been to divulge confidences of their operations. Yet, these two firms accounted for between 10 and 20 per cent of total Puerto Rican retail food sales in 1965. In addition, the methodology, as set up, called for one interview in each firm. The assumption was that the firm was best represented by the values, attitudes, and beliefs of its owner or manager. However, in the multi-store retail firm selling over \$10,000,000 annually, it was difficult to determine with whom and how many structured interviews should be made.

In the largest firms then, the decision was made to depend more heavily upon the informal, unstructured discussions. Notes were taken during the discussions and a written memorandum was made immediately after each interview. The facts of each interview were checked with knowledgeable persons in government or private industry. Much insight into the operations was gleaned, but the two largest firms were not included in the survey analyzed in Chapter V.

Summary

Family income has changed more rapidly in Puerto Rico in the last 15 years than in the United States. According to the 1960 census, family income in Puerto Rico was about half that of family income in the poorest U. S. state, Mississippi. As late as 1965 in San Juan, the largest city on the island, over 20 per cent of the families had gross incomes of less than \$1,000 annually.

In spite of an extremely high birth rate, Puerto Rico experienced a lesser population increase between 1950 and 1960 than the United States as a whole. However, in the late fifties, some Puerto Ricans began returning from the mainland and a greater number of mainland-born American citizens were taking up residence in Puerto Rico. This immigration to the island, together with a youthful population, rising wages, and greater variety in the Fomento-encouraged supermarkets have resulted in higher quality diets.

Shopping habits have changed drastically. Contrary to popular myth, maids do not do the grocery shopping. In spite of intensive government efforts to foster cooperative food store development, few consumers indicate any preference for the "co-ops." The same survey showed that consumers pay more attention to food store advertisements than to newspaper extension service recommendations.

The Department of Labor biennial surveys of the cost of operations of retailers indicate different trends for supermarket gross profit and food store gross profits. Supermarket profits are increasing, as are their sales. Food store gross profits are decreasing, yet prices in the supermarkets seem to be lower for basic commodities except locally grown starchy vegetables.

There has been a high turnover of food retailers. The median year of establishment of the business for those retailers selling less than \$12,000 per year was 1954, while the median year for larger stores was 1960. Small retailers have apparently turned increasingly to becoming beer parlors as means of survival. The economics of scale in food retailing are pronounced.

Conclusions

1. Cooperatives have not provided a viable counter force in San Juan, but in Mayaguez they led the way with new multi-line supermarkets. In the rural areas, they provided new variety and services.

2. Economics of scale and the ability to buy directly from the United States mainland provide large-scale retailers with distinct advantages over small retailers tied to the traditional importers.

3. Food distribution, instead of being a process that always turns laborers out onto the market as development occurs, can, in fact, increase employment because of the expanded proportion of food moving through the commercial sector.

CHAPTER V

INNOVATIVE BEHAVIOR AMONG FOOD RETAILERS IN PUERTO RICO

Introduction

This chapter presents some further insights into the development process of food marketing in the economic development of Puerto Rico through the special lens of social research. The measurement and analysis of innovative behavior are considered in detail. This research effort has been an interdisciplinary approach from its formulation. The writer has been guided in his efforts by economists, agricultural economists, and social scientists concerned with the communications and innovations processes. The previous two chapters have generated some insights into the role of food retailing in the economic development of Puerto Rico. Also, there have been some insights into the role of food retailing in development of other nations. Chapter III presented some insights that grow from the political and economic history of this sector of the Puerto Rican economy. Chapter IV provided insights into the economic process and utilized rather extensively the more traditional economic measures.

The reader will recall that in Chapters I and II a fairly careful appraisal was made of the political, economic, and social factors in the process of economic development. It was noted that many economics writers became sensitive to the inadequacies of their own discipline and have moved beyond the neo-classicists in looking at the problem of development in toto.

Those economics writers became convinced of the limitations of economics per se and realized the necessity of discussing the role of the innovator or entrepreneur. Schumpeter¹ in particular dealt with this problem, as well as others. Keynes alluded to it in his discussions. Solow and others have concentrated on the role of technical change. L. J. Zimmerman² has suggested that the concerns of the neo-classicists are not enough.

A more recent example of an economist who feels uncomfortable working within the limits laid out by the neo-classicists is in an article that appeared in the June 1966

¹Schumpeter, op. cit., p. 61, states:

"Traditional economic theory describes events from a standpoint of circular flow with no changes, or ones that are introduced are continued. This is analogous to blood flowing inside an organism. However, economic life experiences changes, some of which do not appear continuously, and which change the framework, the traditional course itself. They cannot be understood by means of any analysis of circular flow. We seek to learn how do such changes take place, and to what economic phenomena do they give rise?"

²Zimmerman, op. cit.

edition of the American Economic Review. Harvey Leibenstein reviews 7 studies in 6 different nations that have been concerned with misallocation of resources on a macro level as well as 27 studies of labor productivity in certain industries in 7 different countries. He notes that the welfare effects of macro-misallocation of resources are small, apparently less than 2 per cent. However:

There is one important type of distortion that cannot easily be handled by existing microeconomic theory. This has to do with the allocation of managers But the (economic) theory does not allow us to examine this matter because firms are presumed to exist as entities that make optimal input decisions, apart from the decisions of its (sic) managers. This is obviously a contradiction and therefore cannot be handled.³

On the other hand, 27 studies concerned with labor efficiency, which include such things as attitudes, suggest productivity increases from 5 to 71 per cent with little, if any, added investment. Leibenstein admits that a large part of these productivity increases would come from motivation which is not a normal economic variable. One of the purposes of this chapter is to try to explicate some of the variables in what Leibenstein calls "x-efficiency."

Medium-size retailers were selected because they were large enough to enter the race for modern retailing operations. Yet the two largest organizations have been exempted primarily because they were used to provide the

³Harvey Leibenstein, "Allocative Efficiency Vs. X-efficiency," American Economic Review, LVL (June 1966), 397.

criteria for the attributes of innovation. It would have been inappropriate to select innovations from retail outlets on the mainland or Europe. The special conditions of Puerto Rico may make some of the desirable innovations of Europe or the United States inappropriate. On the other hand, the very small retail outlets were exempted from this analysis because there is a special kind of retail business much more in the tradition of the street merchant or tiny tienda that is accounting for a smaller and smaller share of the Puerto Rican food business.

Innovations in Marketing

Although there have been numerous studies of innovation, few have been made in the field of marketing. The Michigan State University Diffusion Documents Center, under the leadership of Everett Rogers, had available as of July 1966, 708 empirical studies on the spread of new ideas, but only 15 of these studies had been conducted in marketing.⁴ Thus, empirical studies are lacking in diffusion of innovations in marketing just as there are few empirical studies concerned with the related area of marketing's role in economic development. Yet without innovation in marketing, it is doubtful that marketing can make a contribution to economic development.

⁴E. M. Rogers, Bibliography on the Diffusion of Innovations, Diffusion of Innovations Research Report #4, Department of Communication, Michigan State University (July 1966), p. 6.

Innovation as a Condition for Growth

Although innovation has been found to be a necessary condition for economic growth (see citation of Leibenstein earlier), and it has been noted as a necessary condition for increasing agricultural production, few would suggest that it is a sufficient condition. In fact, there are examples of great innovators (e.g., the Tucker of auto fame) who were forced out of business.⁵ Thus, innovation is a necessary but not a sufficient condition for growth. It is possible to overadopt new innovations, but frequently it is impossible to know when overadoption has occurred until a later time period.

A case example of innovation as a necessary but not sufficient condition is cited below:

In the mid-fifties in San Juan, Puerto Rico, there was a chain of 4 supermarkets which were among the few in existence in Puerto Rico at that time. These 4 supermarkets were, by the standard presented later in this chapter, among the first innovators, but they were closed by bankruptcy within a short time. However, another man started a supermarket chain in 1956 and adopted many of the same practices used by the bankrupt firm. As of 1966, his is the most financially successful and perceived to be the most progressive supermarket chain in Puerto Rico. Many attribute his

⁵When one looks at matters after the fact, he can smugly assign the hundred dollar word "overadoption" to such failures. But the state of the arts in measuring innovations is such that "overadoption" is only an after-the-fact consideration.

success to managerial skill, which is measured only with difficulty, if at all.

Methodology

It seems evident that there are a great number of items that fit into the universe of innovations over a period of time within a particular part of the economic system. It is just as apparent that a selection of a sample of innovations from out of that universe must be made. Furthermore, the ideal way to study the adoption of innovations would be through field experiments, which is what various consumer product firms do with test marketing of their new products.

In this particular study of food retailing, the investigation of innovations is by recall of 9 specific items. These 9 ideas are so common in mainland United States retail grocery stores that they are accepted as the natural way of doing business. They were selected after depth interviews with the two largest food retailers in Puerto Rico indicated their applicability there.⁶

⁶It should be noted again, as it was in Chapter II, that the analysis in this chapter does not utilize all 140 retailer interviews, nor does it include the establishments of Puerto Rico's two largest food retailing firms. The result of the former exclusion is that the statistical analysis is based upon 91 respondents and ignores the 49 "subsistence retailers," who seem to be quite different from the larger ones. Since the two largest retail firms were used to establish a valid list of innovations, they were not a part of the analysis presented in this chapter.

Some research efforts in the spread of new ideas have been deeply concerned with the pattern of innovation. Sociologists have given intriguing names to the types of people who try out a new idea at different times in its life cycle.⁷ While these names and other tools of the trade, such as the adoption curve, are interesting, they are not of central interest here and will not be discussed further. The purpose of this chapter is to understand better the correlates of "innovativeness."

Limitations of Diffusion Research

Research in the diffusion of innovations on the basis of recall data has its limitations, just as every research technique does. One is usually, as in this study, looking at a small, select number of innovations introduced to a given economic group over a specific time period. The selected innovations are a non-random sample of all possible innovations. Since it is recall data, one can question only those respondents who have remained in business throughout the years.

Such a technique creates two possible biases in a dynamic situation. Some entities could have adopted or did adopt in actuality, and have gone out of business in the intervening time. To the extent that they differ from those

⁷ Some of the more popular names have been: innovator-experimentor, carrier-early adopter, developer-follower, exploiter-laggard.

remaining in business, bias is introduced. On the other hand, in a dynamic situation, new firms are always entering. If innovativeness is measured on a basis of time of adoption, the new firm may be categorized as a late adopter when, in fact, it is one that adopted the practices as soon as it could.

When the subjects of the research are business establishments, there is the problem of correspondence between the firm and decision-makers within the firm. In the rural sociology tradition, the individual farmer has been assumed to be a permanent fixture of his farm. To the extent that such assumptions do not hold or are not statistically controlled, unexplained variance may be higher and a bias may be introduced.

Another problem with this type of research is the recall of earlier behavior. It has been indicated by Katona, of the University of Michigan Survey Research Center, that recall for any behavior over a time span more than a few months is subject to gross errors. Still a cross-sectional diffusion study requires recall information. In addition, Rogers and Rogers have noted that recall of several items provides more accurate information than recall of a single item.⁸

⁸Everett M. Rogers and L. Edna Rogers, "A Methodological Analysis of Adoption Scales," Rural Sociology 26:4. (December 1961.)

Scales

Innovativeness is a construct. It is made up of phenomena that exist in the real world. Innovativeness is either measured as the time of adoption of a single new idea or as some mathematical combination of the adoption of a finite number of innovations.

The Innovativeness Scale

In this study there are 9 items making up the various innovativeness indices.⁹ These 9 innovations are practices that are used by most United States mainland food retailers, and are typical of practices used by the more efficient retailers in advanced areas. Retailers were asked about the applicability and use of the following 9 items: (1) self-service groceries, (2) self-service meats, (3) pre-packaged produce, (4) cash register, (5) off-street parking, (6) sales on cash only, (7) paid advertisement, (8) participation in training, and (9) group purchasing.

Each respondent was asked about the applicability of each of the 9 innovations for his operation. If he felt it applicable, he was asked if he ever used it. If he had ever used it, he was asked the year he adopted it and if the innovation was in use at the time of the interview. Up to this point, the methodology was very similar to other studies of diffusion of innovation.

⁹See Appendix C for this particular part of the questionnaire.

One of the main differences between this study and previous ones was that the applicability of each of the 9 innovations was also judged by the author. The applicability for each innovation was the author's opinion based upon his practical experience in food distribution and also upon other sections of the questionnaire. The author assumed that all of the stores interviewed could use a cash register, parking space, sell on a cash basis only, and could purchase through a group. The applicability of the other 5 innovations depended upon what the store sold, the size of the store and other economic variables. Thus, the author's view of applicability was that of an outside judge or expert. Methodologically, it could be checked by other judges, but was not.

The two questions concerning the applicability of the various innovations was felt to be a necessary step because of the wide diversity of food retailers. In addition, it was thought that there would be a significant positive correlation between an "objective measure" of an outsider and the owner-manager's perception of the applicability of given innovations. It was hypothesized that there would be a significant positive correlation between the index of agreement on perceptions between the objective source and the owner-manager and the other innovation indices.

Throughout the short history of diffusion of innovation studies, there have been a number of ways suggested

for measuring innovations. As mentioned earlier, Rogers suggested that more than one innovation should be used to make up a scale:

The evidence to date suggests that recall dates of a single innovation may be considerably invalid, but that adoption scales composed of a number of innovations may help to balance out part of this invalidity.¹⁰

In this study, five different indices were constructed from the survey information. The indices were constructed as follows:

Innovation Index #1

This index notes only the gross number of applicable innovations adopted. The expert's opinion of applicability for adoptions was summed for each respondent and divided into the sum of the number of innovations that had been adopted. This result was multiplied by 100. The highest possible score would be 100 per cent and the lowest would be zero.

Innovation Index #2

This measures the earliness of adoption. The year of adoption column was converted to a percentile for each innovation. The percentiles were summed and divided by the number of applicable innovations in order to arrive at an average.

¹⁰Rogers and Rogers, op. cit., p. 330.

Innovation Index #3

This index measures innovativeness in comparison to the age of the firm. The hypothesis underlying this rather different index was that firms innovate when they are new. After being in business a while, they stop innovating. The index was constructed by subtracting the year of establishment of the firm (minus a constant 1 in order always to work with positive numbers) from the year of innovation. The differences are summed and then divided by the number of subtractions performed in order to have an average which can be compared to different numbers of innovations.

Innovation Index #4

This is an index of perceptual agreement. Here the expert's opinion of the applicability of the 9 innovations was summed and divided by the sum of the owner's opinion of the applicability.

Innovation Index #5

This is the summed relationship between the owner's perception of the applicability of the 9 innovations and the use of those innovations. It is the extent to which perceptions of possible use and actual use of the innovations can be correlated.

Results of Hypothesis Testing

It was hypothesized that there would be significant correlations between each of the five innovation indices. Table 5-1 below indicated the zero order correlations.

TABLE 5-1.--Zero order correlations between the various innovation indices (N = 91)

Innovation Index	Innovation Index				
	1	2	3	4	5
1. (PIA) per cent of innovations adopted	1.				
2. (AYA) average year of adoption	.767 ^a	1.			
3. Self renewal	.121	.042	1.		
4. Perceptual agreement	.948 ^a	.585 ^a	.129	1.	
5. Do use/could use	.311 ^a	.061	.169	.354 ^a	1.

^aStatistically significant .01.

Source: Survey data.

It is seen that the hypothesis did not hold up in certain indices. It is obvious that Index #3 was measuring something different from the other indices. Factor analysis techniques should indicate how it is that Index #3 is different from the others.

The Expert Versus the Owner

Table 5-2 denotes: (1) the lack of agreement between the expert view of applicability and the owner's view

TABLE 5-2.--Perceived applicability and use of each of the nine innovations

Innovation	Owner Perception Versus Expert Perception	Owner Perception of Applicability Versus Firm Use	Expert Perception Vs. Use of the Innovation
	r	r	r
1. Dry grocery self-service	.191	.899 ^a	.173
2. Meat self-service	.280 ^a	.951 ^a	.266
3. Pre-packaged fruit and vegetable	.303 ^a	.985 ^a	.298
4. Cash register	.177	.902 ^a	.160
5. Parking for cars	.041	.999 ^a	.041
6. Cash sales only	.060	.946 ^a	.057
7. Paid advertising	.039	.998 ^a	.039
8. Training programs	.056	.889 ^a	.050
9. Group purchasing	.028	.998 ^a	.028

^aSignificant at/or beyond the 99% confidence level.

of applicability for each innovation; (2) the high degree of correlation between what the owner believes applicable and his use of that innovation; and (3) the correlation between the expert opinion as to applicability and the use of the innovation.

Columns 1 and 3 show the low degree of correlation between the expert opinion and the use of the innovation by the firm. Basically, column 2 reveals that firms are using

those innovations the manager believes applicable. The high correlation between Innovation Index #4 and Innovation Index #1 in Table 5-1 indicates that the agreement is greater in those firms with high adoption rates. Among those firms with higher percentage adoption, there is a higher agreement in perception of innovations. (The correlation coefficient is $r = .948$.) Thus, one could conclude that innovative firms perceive possibilities to a greater degree than non-innovative firms.

Conclusion

This low correlation coefficient between the perception of the outside expert and the perception of the owner-manager could lead to two or three different conclusions. The first possibility is that the United States "expert's" views of what innovations are good, proper, and necessary for a food retailing establishment are invalid for food retailers in San Juan and Mayaguez, and the owner-managers know this. However, the significant correlation between perception of individual innovations and the percentage of innovations adopted (PIA-Index 1), as well as the significant correlation between perception and average year of adoption (AYA-Index 2) would tend to discredit this line of argument. This would be even more meaningful if the retailers with greater sales growth have a significant correlation with the perception index, but that correlation is not significant. Thus, the results are somewhat inconclusive.

Another possible interpretation is that the United States expert's perception is in actuality valid, but the operator will not see using the innovation as being to his advantage. The experience of 20 years of failure of traveling experts in having their recommendations implemented might be accepted as tentative proof that the outside advisory expert is unlikely to accomplish change in the system.

If change comes about when a man with the power to do something risks what he had because he believes in it, then extra capital will not necessarily bring about the change. In food retailing, in Puerto Rico at least, the owner-managers who are not now using the innovations see little need for them. Thus, either the attitudes change, or new people come into the business who see additional opportunities. The main change agents in Puerto Rican food retailing have been new entrants. (See Table B-3.)

Rogers noted that if one expects high adoption, "it is the characteristic . . . not as seen by experts but as perceived by the potential adopters that really matters."¹¹

Prediction of Innovativeness

Much of the work of Everett Rogers has been concerned with obtaining sufficient information for predicting innovativeness. Social scientists have completed studies and now have tests which purport to predict the probabilities of success in specific occupations, academic pursuits, and even

¹¹Rogers, Diffusion of Innovations, p. 123.

marriage. However, those who loan money for investment, as well as those government officials who are concerned with bringing about social change, have little to go on . . . except faith in their own expertise.

Consider the case of Puerto Rico in the mid-1950's. The governor had requested studies of food distribution. A commission analyzed the studies and recommended that the food distribution system needed change. The Economic Development Administration made available technical assistance and capital for changing the system. As with most projects of this type, funds and administrative time were not unlimited. Thus, one of the questions was selecting which businessman should be helped by major efforts of the government. The banker's standards of loans is one of past performance for which wealth is a fairly good indicator. Thus, an upstanding, respectable, second or third generation businessman would have more possibility of obtaining a loan than would others. It was noted in Chapter I that the theories of E. E. Hagen¹² and Eric Hoffer¹³ suggest that the outsider would be more likely to try something new and unproven. As mentioned in Chapters III and IV, the administrators of the Economic Development Administration found that to be the case in Puerto Rico. Successful local businessmen were

¹²Hagen, op. cit.

¹³Eric Hoffer, The Ordeal of Change (New York: Harper and Row, 1963).

unwilling to shoulder the risk of new ideas. They were unwilling to risk what they had for the uncertain future of something that might fail. Thus the EDA was forced to turn to outsiders as well as those Puerto Ricans who had not yet been eminently successful. It was a matter of intuition to identify those who would be more likely to succeed.

It would be helpful to know the characteristics which explain some, if not all, of the variance in innovativeness of food retailers. Since a program of directed change has taken place in Puerto Rico since 1955, a study of the factors associated with innovativeness in food retailing would be worthwhile as a preliminary effort to devise a predictive tool for use of change agents in food retailing in other areas.

Three such methods of analysis will be used in this study. First, the zero-order correlation of a number of independent variables with the two highest inter-correlations of the measures of innovativeness (the dependent variables). (These two are Innovation Index #1--percentage of innovations adopted [PIA], and Innovation Index #2--average year of adoption [AYA]). Second, the multiple correlation of series of "independent" or predictor variables with the dependent variables in terms of innovation. And, third, factor analysis as a search method to see which

variables are most related to the various measures of innovativeness.¹⁴

Zero order correlation, the relation of one independent variable to one dependent variable, is subject to the same limitations as the Chi-square or t-test, except that it provides an indicator of the strength of the relationship. It indicates how much prediction of the independent variable can be improved by knowing the value of the dependent variable. Still, zero order correlation has the weakness of abstracting one variable from the interrelationships of the world of reality.

The purpose of utilizing such an approach for understanding who are the firms and the individuals is one of economy or, in other words, a task of successive approximation. Certainly, the most economical in time and money is zero order correlations. If the zero order correlations do not give satisfactory results, then multiple correlation will be utilized. In order to see what variables go together, to better understand certain ideal types and thereby better understand who are the innovators, factor analysis will be used.

¹⁴Many of the diffusion studies have used Chi-square or the t-test to check for significant differences in two-way relationships. While such studies are useful, they provide less useable information for the decision-maker or change agent because the variables are isolated from the system within which they operate.

Some Zero-Order Correlations

Hypotheses to be Tested

In Chapter II, a number of bi-variate hypotheses were proposed concerning the importance of certain variables in relation to innovativeness. They are listed in shortened form in Table 5-3. Some of these hypotheses and the background for them was discussed in greater detail in Chapter II. It can be determined from the table that the majority of these hypotheses are statistically significant. The name of the variable is noted in Table 5-3. The hypotheses that were not accepted will be discussed first, followed by the discussion of those hypotheses that were accepted.

Bi-Variate Hypotheses Not Showing Significant Differences

New firms are more innovative than established firms.

The evidence does not support the hypothesis. Another confirmation that this contention was not accepted was the discovery that Innovation Index #3--Self renewal¹⁵ is not significantly correlated with the other innovation indices nor with many other variables. Basically, the evidence is that while the age of the owner or manager is inversely correlated to PIA, the age of the firm has no relationship to innovativeness. Another reason might be that the firms are all relatively young. The median age of the 91 store operations

¹⁵See the section on index construction earlier in this chapter.

TABLE 5-3.--Zero order correlation relationships with two measures of innovativeness

Independent Variable Name	Dependent Variable	
	Per Cent	Year of
	Adopted Correlation -(PIA) r	Adoption Coefficient (AYA) r
Innovative firm managers are younger	.351 ^a	.165 ^b
Innovative firm managers have more education, years school completed	.317 ^a	.246 ^a
Innovative firm managers differ significantly in natural origin:		
Puerto Rico	-.317 ^{ac}	-.286 ^{ac}
Cuban	.350	.181
United States	.084	.131
Innovative firms utilize more government help	.359 ^a	.295 ^a
New firms more innovative than old established firms	.139	.028
Size of sales	.342	.895
Innovative firms, more sales growth	.000	.097
Innovative firms have fewer suppliers	.495 ^a	.300 ^a
Innovative firms have greater United States purchases	.122	.153
Innovative firms have greater knowledge of, and use of, U.S. prices	.379 ^a	.347 ^a
Innovative firm managers have more political knowledge	.278 ^a	.225 ^a
Innovative firm managers have more military experience	.235 ^b	.215 ^b
Innovative firm managers have higher use of mass media	.127	.134
Innovative firm managers have higher government index scores	.410 ^a	.351 ^a
Innovative firm managers have more mobility	.086	.054
VALUE		
Innovative firm managers have more modern attitudes	-.291 ^{ac}	-.267 ^{ac}
Innovative firms have more educational achievements (son)	.011	-.034 ^c
Opinion why people go out of business--old age	-.335 ^{ac}	-.284 ^{ac}
Innovative firms have more market progressivism	-.193 ^c	-.180 ^c

^aSignificant at 99% level.^bSignificant at 95% level.^cMinus (-) indicates more modern.

Source: Latin American Food Study, 1965-66.

was 5 years,¹⁶ or, to put it another way, 50 per cent of the stores in our sample were started after 1960.

Innovative firms have more sales growth. Perhaps this hypothesis was not confirmed because of the inadequacies in the written records. (Only 11 per cent of the respondents referred to written records for data.) Thus, there were a great number of cases where the respondents did not remember what sales had been made in an earlier time period. The arbitrarily chosen time period over which sales growth was to be measured was 5 years, an intermediate time period in U.S. accounting terms. It was obvious, after the field results came in, that in the dynamic Puerto Rican situation, 5 years was a "long time," since 50 per cent of the stores had been founded within that period. Thus, the rejection of this hypothesis is felt to be due to a measure of sales growth that did not fit the situation in which it was used. The author's "expert" belief is that the innovative firms had a much greater degree of sales growth. And, one evidence of this is the rapid growth of the percentage of food sold by corporate stores which are significantly greater adopters of innovation. However, statistically the hypothesis was not supported.

Innovative firms will have fewer suppliers. The hypothesis could not be accepted, even though the correlation coefficient was statistically significant. Correlation is .495 with PIA and .300 with AYA, respectively, which

¹⁶See Appendix B for a more detailed discussion.

is just opposite from the predicted direction. In other words, the more innovative firms, which will be noted later and are also the larger firms, had more instead of fewer suppliers. The direction and statistical significance of this correlation between number of suppliers and innovative firms is another designation of the lack of vitality of full-line food wholesaling in Puerto Rico.¹⁷

Innovative firms buy a greater percentage of their merchandise directly from the United States. This hypothesis could not be accepted due to the lack of a statistically significant correlation coefficient. Early evidence from the three largest food retailing firms showed they were dealing directly with U.S. suppliers. This fact led the writer to believe that buying directly must be more profitable and therefore the more innovative firms would buy directly from the United States also. Such was not the case.

Innovative firm managers will have greater use of the mass media. Many previous studies¹⁸ had indicated that mass media usage was correlated with innovativeness, yet there was not a statistically significant correlation. Although there is no reasonable explanation, the variable

¹⁷ Another aspect of the belated lack of change in food wholesaling is discussed in the preceding chapter.

¹⁸ A good bibliography in this area is Delbert T. Myren, Communications in Agricultural Development, Londres 40, Mexico 6 D.F., Mexico, November 1965.

"index of mass media exposure" does make a significant contribution to the multiple correlation against these same independent variables.

Innovative firm managers have greater mobility. One of the more complicated variables, mobility, was measured by summing the scores of four questions. Perhaps it was not significant because all Puerto Ricans travel a lot. In our survey, 72 per cent of the respondents had been outside Puerto Rico.

Innovative firm managers will want their sons to have more education. This hypothesis is similar to the one previously presented. There is little variation in education aspirations for sons; fathers want their children to have at least a college education and they believe it possible.

Innovative firm managers will have more progressive market attitudes. The market progressiveness index was the summation of nine Likert-type questions asked of all retailers. The questions, which were new as a set of questions, subsequently proved not to be unidimensional, and did not make up a scale. Thus, one of the reasons for this index failing was its methodological inadequacy. A later analysis will correlate the nine individual items in this index to the indices.

Bi-Variate Hypotheses that Were Accepted

Although the above-listed eight hypotheses could not be accepted, 13 of the hypothesized relationships presented in Table 5-3 were statistically significant. The profile that one draws of the innovative person is that he is younger, had more education, is likely to be an extran-jero, has utilized more government help, has more suppliers, and has a greater knowledge of United States prices.

The variable with the highest r is one that was correlated in the opposite direction. The second-ranking variable, knowledge and assistance of government help, explained only 17 per cent of the variance in innovativeness. Thus, not one of the statistically significant zero-order correlations was high enough that a decision-maker would want to take action utilizing these findings as a basis for any major program.

Still, it is notable that the significant correlations are in both economic and social variables. Eight out of the 21 independent variables mentioned in the simple correlations are economic in nature and are concerned with the performance of the firm. While only 3 of the 8 are statistically significant, they have higher correlation coefficients than the 6 of the 7 sociological variables. In short, while both economic and social variables are significant, zero-order correlation leaves something to be desired.

Multiple Correlation

Multiple correlation is a statistical method whereby a series of independent variables is related to one dependent variable. Some diffusion of innovation studies have utilized multiple correlation to predict innovativeness in the past. Rogers summarizes a number of the studies through 1962 in his Table 10-1. From 17 to 64 per cent of the variation was predicted in those analyses.¹⁹ Since Rogers' book was published, a Diffusion Documents Center has been established at Michigan State University. Annually, the center publishes a bibliography of the empirical studies concerning innovation. Of the one thousand studies listed in the 1966 bibliography, only 80 have utilized multi-variate statistics including multiple correlation. The explained variance in innovation studies using multiple correlation extends from a low of 17 per cent to a high of 69 per cent. A summary of those studies using multiple correlation is presented in Appendix E.

It is interesting to note that in all of those cases where 30 per cent or more of the variance in innovativeness has been explained, there is a combination of economic and sociological variables.

Hypothesized Relationships

As a result of perusals of earlier studies, reviews of various theories of social change, and personal depth

¹⁹ Rogers, Diffusion of Innovations, p. 288.

interviews with participants in Puerto Rico, it became obvious that any set of independent variables from a single discipline would have limited predictability. It was therefore decided to utilize the power of a large-scale computer and draw upon a great number of variables in order to raise the explained variance.²⁰ Since the unit that could adopt was the retail food establishment (in most cases a firm) but information was obtained from the owner, manager, or primary decision-maker, we collected both personal and institutional information. The 35 independent variables used to predict innovativeness were broken into the following groupings: demographic, performance, and value orientations and opinions. They are presented in Table 5-4.

Two different measures of the dependent variable were used just as they had been in the zero-order correlations. Innovativeness Index #1 (PIA) was the measure of the percentage of innovations adopted. Innovativeness

²⁰Two objections to the practice of using a large number of variables in the past have been: (a) the horrendous calculation job (but computers have removed that problem), and (b) the problem of spurious correlations resulting from the great number of variables. However, the statistic R^2 which takes account of the extra variables, is useful here. R^2 is the multiple coefficient of determination adjusted by degrees of freedom. The value of R^2 lies in the fact that adding an additional independent variable to the least squares equation will never decrease R^2 and may increase R^2 slightly due to spurious correlation. On the other hand, R^2 may decrease since the additional variable and its degrees of freedom are accounted for.

TABLE 5-4.--Statistically important variables

<u>Demographic</u>	<u>Values orientation and opinion</u>
City	
Sales by license	Personal
Neighborhood income level	
Age of owner	Modernization
Education of owner	Trust
Income of owner	Trust
Nationality	Risk orientation
Puerto Rican	Trust
Cuban	Hoarding index
United States	Mobility
	Educational achieve- ment, son
<u>Performance</u>	Supers have all Government programs help only
Actual sales	Competition larger
Sales Growth	6 years ago
Per cent sales on credit	Index of market attitudes
Perceived family income	
Number of suppliers	
Per cent purchases in U.S.	Why left:
Mass media usage	Old age
Political knowledge	Poor market
U. S. prices	Super compt.
Government help, use and know	
Mobility	

Index #2 (AYA) was a measure of the average time of adoption of the innovations in comparison to a ranking of other firms that had adopted each of the nine innovations. It is interesting to note that R^2 and R^{-2} for the percentage of innovations adopted (PIA) is .875 and .833, respectively. The two measures of explained variance are lower when year of adoption (AYA) is considered. In this case, $R^2 = .722$ and $R^{-2} = .629$. Still, the explained variance is among the highest yet reported in studies of innovation.

Only 11 of the 35 hypothesized variables were significant at 95 per cent confidence or more in helping explain the R^2 of .833. Those 11 variables which are presented below are the ones contributing the majority of the explanation for innovation: size of sales by municipal license; education of owner; actual dollar sales in 1965; per cent of sales on credit (negative); index of trust; index of hoarding propensities; "supermarkets have all the business they are going to get" (negative); "others left retailing because they were poor managers" and "others left retailing because of competition from supermarkets." It is evident that there are "economic," "sociological," and "psychological" variables in the above list. Thus, one could conclude that it is necessary to draw upon a number of disciplines in order to increase explained variance in innovativeness. The hypothesis that predicted the above 35 variables would be statistically correlated is thus accepted on the basis of the high R^2 of .722 and .875. The correlations are significantly different from zero.

Using Zero Order Correlations as Indicators for Multiple Correlations

Some researchers²¹ have used the zero order correlation coefficients to search out the best predictor for a

²¹See Rex R. Campbell, "Prestige of Farm Operators in Two Rural Mississippi Communities," unpublished Ph.D. thesis, University of Missouri, 1965, for an example.

multiple correlation prediction of a dependent variable. The author went through the various zero order correlations between 183 independent variables and the previously mentioned innovation indices. The 17 independent variables with the highest correlation coefficient that made intuitive sense were chosen for a multiple correlation run with the same two innovation indices used before. Those variables are noted in Table 5-5. The explained variance with these 17 variables is $R^2 = .809$ for PIA and $.674$ for AYA. While still high, it is lower than the explained variance based on hypothesized relationships. So, at least in this case, the raw empiricism was not as useful as multiple correlation based upon theoretical relationships. It is interesting how economic, sociological and psychological variables all aid the prediction.

TABLE 5-5.--Multiple correlations with independent variables with high zero order coefficients with innovativeness

<u>Demographic</u>	<u>Values</u>
Age of business	Luck
Age of owner	Risk orientation
	Supermarkets have all
	the business
<u>Performance</u>	Government programs, use
Actual sales	
Credit, per cent of sales	
Number of suppliers	
Number of employees	
Telephone orders	
Monthly rent	
Persons coming by car	
U. S. price knowledge	
Yesterday media reading	
Discounts taken	
Purpose of training program	

Factor Analysis

Introduction

The evidence of the correlations as well as that of the preceding chapters seems to indicate that variables associated with any one academic discipline are not sufficient for explaining changes in a complex interacting system like food retailing. There is evidence that some better applications of a wholistic approach would help.

Since the availability of the computer, the statistical technique of factor analysis makes the above conjecture an operational and empirical question. It can be determined how important is a multi-disciplinary approach. Eighty-seven of the variables in the retailer survey were assigned to a factor analysis. Another hypothesis which emerges from the earlier chapters is that the environment and the economics of the situation do not fully define the set of available opportunities and limitations. Many of the opportunities and limitations exist within the mind, as was discussed in the earlier section on differences in perception between an owner-manager and an expert. Partially because of these perceptual differences, it was noted that occasionally extranjeros had to be depended upon to bring about the major changes in food retailing. The difference in views concerns both values and opinions,²² and is indicated by agreement or

²²Values and opinions are closely related and are frequently difficult to distinguish. Some techniques of measurement are the same for both. However, we differentiate between them on the following basis: value is something for which there exists accepted evidential proof, while opinion has no accepted evidential proof. In this thesis, no attempt is made to distinguish between them.

disagreement with the various statements made by individuals associated with food retailing. These agreements and disagreements are noted in terms of Likert scaling. Thus, it seems that factor analysis could be of use in distinguishing between types of people and firms and in determining the make-up of some ideal types.

Technique of Factor Analysis

Factor analysis is a mathematical statistical technique devised some 30 years ago.²³ Because of the laborious calculations required, factor analysis was never very popular. The cost in time and labor did not usually justify the possible results. Computers have changed that; today a very complicated multifactor solution can be calculated in a matter of minutes. In the analysis of this data, the computer took 29 minutes and 45 seconds to solve 14 separate 87-variable factor analyses.

In factor analysis, one is searching for the kinds of things that cluster on a given mathematically constructed vector. The technique provides the researcher with:

- (1) The amount of total variance in the variables under consideration which is explained by each factor;
- (2) The amount a given variable contributes to a specific factor;

(This corresponds to a correlation coefficient.)

²³One of the better books explaining factor analysis is by Harry H. Harman, Modern Factor Analysis, University of Chicago Press, Chicago, 1960.

- (3) The "communality" or amount of the variance in each variable accounted for by the particular factor solution.

The researcher uses the computer print-out and looks specifically for the particular combination of the highest explained variance combined with the fewest number of factors which makes the most "intuitive sense" and on which the pertinent variables show high loading. Factor analysis is, therefore, useful when one is trying to make certain an index measures one thing and/or when it is desirable to reduce a great number of variables for purposes of explanation. In this study, the factor analysis was conducted with the same retailers used in the correlation runs discussed earlier in this chapter.²⁴

An Example

Earlier in this chapter there was the discussion of whether or not the innovation indices measured the same underlying construct. One way of determining whether or not indices measure the same construct is through factor analysis.

²⁴It will be remembered (and is discussed in Appendix B in more detail) that the total sample of 140 retailers was made of food retailers of various sizes. There were 49 who had sales of less than \$12,000 annually. They were found to have few accounting records. They were older. Because they were socially and statistically different, they are not included in the factor analysis. In the appendix, the name "subsistence" retailers is given these operators because, even with the outrageously high 30 per cent gross profit and 10 per cent net profit, the profit for the largest operator would only be done for \$1,200.

Basically, Table 5-6 shows that Innovation Indices 1, 2, and 4 measure the same thing. This can be seen because the three indices are loaded most heavily on the same factor and the communality is higher. Another aspect Table 5-6 shows is the amount of variance in each index that is explained by the factor analysis.

TABLE 5-6.--Factor loadings for the five Innovation Indices

Innovation Indices		Factor						Communities
Name	No.	I	II	III	IV	V	VI	
% adopted	1	.79	.18	.09	.05	.24	.09	.73
Year of adoption	2	.65	.18	.13	.03	.16	.08	.51
Renewal	3	.01	.13	.14	.11	.08	.02	.20
Perceptual agreement	4	.75	.14	.13	.06	.21	.05	.65
Action vs. perception	5	.12	.10	.14	.10	.35	.04	.18

Appendix E reproduces the six-factor matrix solution together with the name and associated variable numbers. Listed below are the six tables which correspond to the individual factors. Only those variables are listed which have a loading of .30 or greater. Those variables with the highest loading and that contribute most to a given factor have the highest numbers. Also, it should be noted that, contrary to typical experience with factor analysis, no one factor explains more than 10.5 per cent of the variance

here, yet all six factors explain 42 per cent of the variance in these 87 variables in the questionnaire.

By looking over the variables in each factor, names have been assigned which seem indicative of the variables grouped in that factor. Factor 1 and 3 describe certain types of firms, factors 2, 4, and 5 describe types of owner-managers, and factor 6 is a combination owner-firm index. The names that have been given each of the factors follows:

Factor 1 - "Large modern firm"

Factor 2 - "Modern businessman"

Factor 3 - "Older non-growth oriented firm"

Factor 4 - "Traditional person" who is hoping for
better days ahead

Factor 5 - "Small traditional retailer"

Factor 6 - Modern independent owner-business

Each will be described in some detail below.

Large modern firm - Factor 1. Table 5-7 on the next page lists the 21 significant variables which contribute to this factor and explain 10.5 per cent of the total variance in the 87 selected variables. Because three innovation indices are loaded on this factor, obviously this is the large innovative corporation. It does a considerable business in United States merchandise, and uses a great amount of advertising. It is more likely to have an extranjero as manager rather than a native Puerto Rican. In one sense it was surprising that the "merchandise inventory" loading was

TABLE 5-7.--Large modern firm, factor 1

Variable # ^a		Variance Explained=10.5%
FA #	Item	Primary ^b
11	Type of legal org. this establishment has (corporation)	-.49
14	Square feet of sales are	.61
15	Merchandise inventory at end of 1964	.30
17	Total number of people working	.69
18	Total number of hours worked	.54
19	Use of posters in showcase	.49
20	Use of handout sheets	.74
21	Use of ads in newspapers	.46
22	Use of ads on T.V.	.37
23	Use of loudspeakers for advertising	.64
24	\$ spent on ads and promotion last year	.63
25	Number of weekly sales transactions	.60
26	Number of suppliers	.54
27	Per cent of purchases direct from U.S.	.35
59	Personal family income of manager in 1964	.40
64	Size as determined from municipal license	.81
74	Index of knowledge of U. S. prices	.64
79	Innovation Index No. 1--per cent adopted	.78
80	Innovation Index No. 2--year of adoption	.65
82	Innovation Index No. 4--perception agreement	.74
85	Puerto Rican nationality	-.50
86	Cuban nationality	.45

^aVariable numbers are for the computer identification. The first number corresponds to the number on the left side of the matrix in Appendix E.

^bOnly those variables with a loading of .30 or more were listed as having a primary loading.

not higher than it is (.30). But in another sense, it is understandable because of the instabilities of supply due to hurricanes and shipping strikes.

The Young Modern Entrepreneur - Factor 2. This factor is heavily weighted by value orientations and communications behavior. Table 5-8 indicates that this factor

explains 7 per cent of the variance, yet it does not have one variable from the discipline of economics. There are only three of the eight items of the index of modernization included in this factor. Here, then, is an indication that the modernization index was not single-valued; it appears

TABLE 5-8.--Modern businessman, factor 2

Variable # ^a		Variance Explained=7%
FA#	Item	Primary Loading
4	Read newspaper yesterday	.46
5	Newspapers read regularly	.53
6	Read a magazine yesterday	.50
7	What magazines read regularly	.55
10	Knowledge of political leaders	.52
28	"Children should be instructed to follow ways of past"	-.65
30	"When a problem arises, one should depend on leaders"	-.67
36	"I prefer to work alone rather than be tied to family"	.57
38	"Consumers spend more for platanos when scarce"	-.68
39	"Egg classification and refrigeration law is wise"	-.40
43	"Increase in income means smaller proportion for food"	-.50
47	"Milk regulations have benefited business and consumer"	-.61
49	"Supermarkets have all the business"	-.49
51	"If friend asked you to co-sign a loan, what would you do?"	.45
57	Age	-.42
58	Highest grade passed in school	.45
66	T.V. main source for local news	-.32
75	Index of government help	.43
78	Loans most important source of funds for expanding	.35

^aVariable numbers are for computer identification. The first number corresponds to the # on the left side of matrix in Appendix E.

to have measured more than one concept. (See factor 5 for a better indication of the modernization index.) It appears from factor 5 that the modernization index identified the traditional person better than the modern person. There are six variables which are attitudes toward events and parameters of the market place. It is rather obvious that this individual would prefer not to have the government regulating his business. He is highly educated, reads a lot, and knows of government assistance, but he does not use it quite as much as Type 3. He is oriented to the future and is willing to borrow money to expand his business. He is optimistic in that he would willingly co-sign a note for a friend.

The Older Firm with the Older Manager - Factor 3.

Here is a company in trouble. As indicated in Table 5-9, the owner has faith that the government will help him. His sales have not grown, but he had adopted some innovations as indicated by the index of renewal. He knows about, and has used, the government help to a greater extent than anyone else. Five per cent of variance is explained by this factor grouping.

As a matter of conjecture, one wonders if this man isn't too old to carry the burden of competition in today's world of business. Perhaps at one time he was progressive. Perhaps he is just about to turn things around, but he is feeling the pressures of competition. He does not believe

TABLE 5-9.--Variables associated with the older firm that is not growing, factor 3

Variable # ^a		Variance Explained=5%
FA#	Item	Primary Loading
12	Years business established	.63
16	Index of sales growth	-.68
29	"Happy with changes, new better than old"	.32
34	"Confide only in relatives"	-.42
36	When dealer reduces prices, less earnings for him	-.45
39	Egg classification and refrigeration law is wise	.41
40	When dealer reduces prices, less earning for everyone	-.39
42	"Group organizations such as buying associations can be beneficial"	-.60
47	"Government programs benefit select groups of dealers	-.43
49	"Five years ago competition was stronger	-.38
54	Put a windfall in local bank	-.44
57	Age ^b	.32
65	Newspapers main source	.36
75	Index of government help	.48
81	Innovation Index No. 3	.40

^aVariable numbers are for computer identification. The first number corresponds to the # on the left side of the matrix in Appendix E.

^bThe primary loading of the variable age was on factor 2, since it is loaded in the opposite direction. Here it is used to better explain this factor.

in the benefits of group action, but does believe in price reductions for certain merchandise.

The Transitional Manager - Factor 4. Table 5-10 shows that here is a manager who has not yet made up his mind as to his true views. These 12 variables describe the value orientations of a manager who is not consistent in

his values, but they do explain 5 per cent of total variance. On the one hand, he believes the problems of selling fruits and vegetables are more risky today, but at the same time he claims that general competition was stronger 5 years ago. He does not want his son to have much education and would not spend any windfall money for additional education, but he would buy durables. The man has traveled a lot, but apparently it is travel without specific business

TABLE 5-10.--Transitional manager, factor 4

Variable # ^a		Variance Explained=5%
FA#	Item	Loading
46	"Risk and insecurity in selling fruits less today"	-.51
48	"Figures of Department of Agriculture are reasonable and unbiased"	-.33
49	"Five years ago, competition and pressure were stronger"	.33
55	Use of windfall income, buy or pay debt on durables	.65
56	Use of windfall income, education for the family	-.71
60	Year schooling desired for oldest son	-.37
65	Newspapers main source for local news	.37
67	Radio main source for local news	-.69
70	Radio main source on prices for fruits and vegetables	-.48
73	Index of agriculture radio effect	-.50
84	Index of mobility	.54

^aVariable numbers are for computer identification. The first number corresponds to the # on the left side of the matrix in Appendix E.

purpose. He claims to get his local news from the newspaper and does not listen to the radio.

The Traditional Manager - Factor 5. In Table 5-11, we see the portrait of the poorer and less successful businessman. He has his store in a poor section of town. His world view is more traditional. He does not consider himself a continental, i.e., a U.S. citizen. The "expert" and the traditional owner-manager disagreed most as to the innovations applicable to his business. He doesn't trust others, believes the market is of fixed size, and that government actions benefit a select group. He believes in luck, an attitude generally associated with traditionalism.

Basically, it is doubtful that anyone can help this fatalistic and poorly educated man.

The Modern Independent Businessman - Factor 6. This man, as indicated in Table 5-12, is similar to the modern businessman of factor 2, in that he uses the mass media extensively. However, he does not use interpersonal communication. He has not been quite as successful. His business has been profitable and he has used the profits for reinvestment in his company. He uses advertisements and he operates in a "better" residential area. He either is a member of a group or believes in group buying. He would be the most likely to continue buying from a group instead of from a one-shot wholesaler who offers a better price. He believes he can influence his environment. There is a sharp contrast between this type and the traditional manager. Four per cent of the variance is explained by the "modern independent businessman" factor.

TABLE 5-11.--The traditional manager, factor 5

Variable # ^a		Variance Explained=5%
FA#	Item	Loading
1	Level of income in residential area	-.44
31 _b	"Better if scientists left things alone	.41
32 _b	"Most important thing in life to succeed is luck"	.59
33	"Things of past are better, changes bring problems"	.34
35	"Eat, drink and be merry, for tomorrow we may die"	.56
36	"Prefer to work alone rather than be tied to family"	-.45
41	"Consumers only spend a fixed amount on food"	.61
47	"Government programs benefit select group of dealers"	.40
50	"If relatives asked to co-sign loans, would you?"	-.57
51	"If friend asked you to co-sign, would you?"	-.34
52	"How would you invest \$10,000 saved from income;"don't understand or savings account	-.48
58	Education	-.43
83	Innovation Index No. 5	-.35
85	Puerto Rican nationality	.37
87	U. S. Continental	-.34

^aVariable numbers are for computer identification. The first number corresponds to the # on the left side of the matrix in Appendix E.

^bBecause it helps explain the variance, this variable is left here although it is loaded higher elsewhere.

Conclusion

If one were going to arrange the six factors from that representing the most modern to that representing the most traditional, the listing might be as follows: large modern firm, together with modern businessman; modern independent; older non-growth firm; transitional manager;

TABLE 5-12.--Modern independent businessman, factor 6

Variable # ^a		Variance Explained=4%
FA#	Item	Loading
1	Level of income in residential area	.31
2	Listened to radio yesterday	.63
3	Hours listened to radio in a week	.59
4	Read newspaper yesterday	.46
5	Number newspapers read regularly	.53
8	Watch television yesterday	.64
9	Hours per week watch television	.56
11	Type of legal organization this establishment has	-.36
21	Ads in newspapers ^b	.35
31	"Better if scientists left things alone" ^b	-.38
53	Different wholesaler offered \$.25 a box less, would you continue buying from regular store?	.33
68	Interpersonal channels are main source of local news	-.52
76	Personal savings of inheritances most important source of funds	-.46
77	Profits from same business most important source of funds	.51

^aVariable numbers are for computer identification. The first number corresponds to the # on the left side of the matrix in Appendix E.

^bThis variable loaded more heavily on other variables, but it helps explain the variance and was included.

traditional manager. Factor analysis has helped the understanding of the firms and persons associated with food retailing in Puerto Rico in that it gives us profiles of ideal types. For instance, a development banker would do well to concentrate his efforts on a person or firm with the characteristics of the "modern firm" or the "modern businessman."

Summary

Innovation has been a byword in Puerto Rican food retailing, but there are differing perceptions of applicability of specific innovations. The statistical analysis, which concentrated upon those stores with more than \$12,000 sales and had the added limitation of not including the establishments of the two largest retailers, was a methodological success. The explained variance of innovativeness was the highest that has yet been reported. Other studies are presented elsewhere. The independent variables were multidisciplinary and represented variables of both the firm and the individual responsible for major decisions in that firm.

An attempt to develop new innovation scales was a limited success. However, it was evident that a respondent felt he was using most ideas that were applicable.

The simple correlations with innovativeness were of less use than the multiple correlations. Contrary to hypothesized results, the number of suppliers serving a firm increased as innovativeness and size increased. Both multiple correlation and factor analysis help explain who the innovators were and what kind of variables are associated with those persons or firms most likely to bring about the change in food retailing in Puerto Rico. As has been discovered in other studies, the innovator tends to be a

well-informed person of younger age, who is meeting with some financial success. More likely than not he is some sort of foreigner. The business is not one of the smallest types because he then could not afford to fail in his innovations.

Conclusions

Perception of applicability of innovations varies and is important in the adoption of those innovations. Unless the owner-manager perceives the need for an innovation, it is unlikely it will be adopted. The "expert's" view of the applicability of innovations was highly related to those persons who were more likely to try an innovation.

Innovative-type individuals and firms can be identified with greater than chance probability. A multidisciplinary approach produced a higher explained variance of innovativeness than any previous study.

Change agents should look for persons with the characteristics noted in Tables 5-4, 5-7, 5-9, and 5-12.

CHAPTER VI

CONCLUSIONS AND SUGGESTIONS

Introduction

In Chapter II it was suggested that there were three core objectives within the total framework of determining the role of marketing in economic development. These objectives were: (1) to describe accurately what happened in food retailing between 1950-1965; (2) to investigate and explain the process by which change occurred in the Puerto Rican food retailing sector during a period of directed and planned development; and (3) to understand better the variables correlated with innovativeness as well as multivariate correlates of the innovative process. Chapters III, IV, and V covered these objectives in detail. The three objectives were followed by some specific questions which were not covered earlier.

Broad Issues Considered

The "National Market"

The first broad question raised in Chapter II dealt with Rostow's phrase, the "national market." First of all,

it was asked how is a "national market" identified? Further, how is it to be operationalized? The national market could be defined as the exchange between people measured in money terms. If this definition is accepted, then the per cent of total consumption and investment that passes through commercial channels could be considered an index of the amount of a national market that exists. In this sense, there was more of a national market in food in 1963 than in 1949. In 1949, only 44 per cent of the food consumption passed through retail food stores, but by 1963 the figure had increased to 63 per cent.

A second part of the question on national markets concerned the recommendations for creating more of a national market. Some insights were generated in the preceding chapters of this thesis. Based upon the Puerto Rican experience, it seems clear that the precursors of change were many. One of the biggest was the public and private commitment of the most powerful politician and the first elected governor of Puerto Rico, Luis Muñoz-Marin. He committed himself and his party to a broad program of social reform in the late thirties. He found a co-worker, Teodoro Moscosco, who became the implementer of Muñoz-Marin's ideas. Moscosco, as chief of the Puerto Rico Industrial Development Company and then of Fomento, was concerned with achieving results. He was willing to

go wherever necessary to get persons who could help achieve the results for "Operation Boot Strap." He was willing to give help to new entrants, even foreigners. Not only was Muñoz-Marín committed to social reforms, but he commissioned studies by the experts and then acted upon the experts' recommendations.

Retail food stores introduced new products to the consumer. The unique commonwealth status permitted food retailers to by-pass local exclusive agents and wholesalers if it was advantageous. Some of the larger retailers were buying three-fourths of their supplies directly from the United States in 1965.

Another contributor to the creation of more of a national market was the reduction in gross margins both as a result of directed efforts at change and also private initiative. It was noted in Chapters III and IV that gross margins had apparently decreased since 1949 and that prices of basic commodities were lower in supermarkets in 1966 than in the smaller stores. Lower retail prices on basic commodities have seemingly meant more purchases of those and other products. There is considerable circumstantial evidence that during the time period in question the demand for most goods, including food, was elastic.

Still another way in which more of a national market was being created was through contract buying arrangements between the large food retailing concerns and certain

producer groups. Partially as a result of better coordination and reduced price fluctuations, production has increased on certain high-value items such as eggs and milk.

Finally, it should be said that the increasing development of the national market was not in any way preordained or mechanical. It depended strongly upon new entrants to bring about the necessary changes. The strong suggestion of the Puerto Rican experience is that, by and large, assistance is difficult, if not impossible, to provide for existing firms. Most of them do not want it and will accept it only when their backs are against the wall. On the other hand, new entrants with certain sociological traits discussed in Chapter V seem to have a better chance of contributing to the increased national market. All of this is in agreement with the theories of Eric Hoffer, Everett Hagen, and E. G. Barnett. They tell us that change is difficult and risky. Therefore, it is likely to be the newcomer who will bring about the change because he can only better himself.

In short, then, to create more of a "national market" prices should be lower, and there should be a planned program backed by the political leaders to foster greater efficiencies. In addition, the political leaders need courage to permit newcomers to rise to the surface.

Measuring Improvements in Exchange

A second broad issue raised in Chapter II was how one measures the improvements in exchange or changes in the distribution system that accelerate development. Using the conventional tools of economics, statistics and other behavioral sciences, it is difficult if not impossible to assign causes for accelerated development.

It was mentioned in Chapter I that Currie and others have proposed some different ideas for accelerating development. Currie, in fact, is not satisfied with the generally accepted definition of development as a rise in average per capita income. He would rather be concerned with the level of living of the masses. Others, such as Belshaw, accept the definition of increase in average per capita income as the single best measure of development, but have different ideas on how to achieve it. Empirical studies of the causes of accelerated development are few. Those that exist attribute it largely to technological advance of one form or another.

Correlation techniques can show that various factors are associated with accelerated development. As mentioned in Chapter III, between 1950 and 1960 in Puerto Rico the real per capita income increased slightly over 5 per cent per annum. During this time period and continuing into 1965, the distribution system changed rapidly. Still, using the tools of this thesis, it is impossible to say that

these correlated changes in distribution, which were technological innovations, caused the accelerated development of Puerto Rico during the 15 years following 1950.

The engineering technique of systems analysis is a tool that offers the possibilities of assigning causation to the development process. Systems analysis, in conjunction with a large scale computer, provides the framework for building a model. That model can then be tried out countless times with varying options. The causation(s) of accelerated development can be quickly identified in the model. The closer the model is to the actual system it represents, the more certainty one can assign of causation in that actual system.

A systems model of the Puerto Rican economy has been designed by John Griggs of Michigan State University. In his simple model, which forms the basis of his Ph.D. thesis, he centered his attention on the effects of distribution on the Puerto Rican economy. A second generation model is being developed by Thomas Webb, also of Michigan State. He will use this more sophisticated systems model to assess the effects of changes in distribution upon economic development. Thus, it is seen that although this thesis could not answer the question of the causes of accelerated development, work is progressing in this field.

Changes in Food Distribution

A third question which was more specific depended upon an affirmative answer to the preceding one. It was asked if "changes in the distribution of food accelerated development." This is a relative situation. If changes in distribution in general do not accelerate development, it is doubtful that changes in food distribution will.

A comprehensive and final answer to this question was not developed in this thesis. However, some first approximations are available from the evidence discussed in Chapters III, IV, and V. Changes in food distribution , seemed to accelerate development by providing added employment in the retail food sector. Total employment in retail food distribution actually increased during the years that efficiencies were being introduced. Also, there is evidence that the lowering of the risk for growing certain perishable and high-value products, such as milk and eggs, aided the economy through greater local production. During this period of rapid income growth, Puerto Rico imported no greater percentage of its food in 1964 than in 1950. Yet, Robert Stevens suggested that most countries who experienced rapid growth in per capita income beginning at a low level could expect a large portion of the added income to be spent on food, thus resulting in a "food drain." This "drain" occurred because production of few countries was able to keep up with the

increased demand for food. The circumstantial evidence is very strong that the existence of large scale retailers who could make long term contracts in conjunction with a positive program of government regulation and assistance was a positive force in seeing that Puerto Rico did not experience this problem during the 1950's. These factors are discussed in more detail in the Ph.D. thesis of Mr. Kelly Harrison.

The development of stronger countervailing forces in food retailing was another contributing factor. Fomento, the Puerto Rican government institution that was charged with bringing about industrial and commercial development, was responsible for setting up or encouraging new retail operations. Fomento tried first to encourage established local businessmen to invest in new retail facilities on a matching funds basis. When Fomento failed in this attempt, it became willing to help new entrants, such as Harold Toppel of the newly established Pueblo stores. In addition, Fomento aided the Consumer Cooperative Federation with funds and technical assistance. Fomento also provided assistance to independent store operators by helping establish association buying and advertising.

Some attempts proved more successful than others. In the late 1950's, one of the early corporate chains was having financial difficulties. The governor himself appealed to a major supermarket chain in the United States

to enter the San Juan area to provide effective countervailing power. It seems likely that this countervailing power is in for some changes. In 1964, a new entrant from the United States began a chain of stores. In 1966, larger retailers began construction of two new food warehouses.

Contribution to Economic Development

On an intuitive basis, it seems safe to conclude that food retailing has made a contribution to the economic development of Puerto Rico in the following respects:

1. Employment has increased in food retailing.
2. Since 1956 food prices have not risen as rapidly as wages. (How much of this is due to efficiencies in United States farming and processing and how much is due to changes in Puerto Rican food distribution is difficult to say.)
3. As noted in Chapter IV, Puerto Ricans are better fed today than they were in the past.
4. As a result of contract buying and government cooperation, the production of certain high-value crops increased significantly. Puerto Rico did not experience a "food drain."

Correlates of the Innovative Process

As mentioned in the introduction to this chapter, the third broad objective of the thesis was to understand better the correlates of the innovative process. Those who direct or support programs of change would be aided by knowing more about who the innovators are and how change comes about. Chapter V discussed the detailed findings.

It was discovered that a combination of social, psychological, and economic variables would explain the largest share of the total variance yet reported. (The explained variance was $R^2 = .875$, for one measure of the dependent variable innovativeness, and $R^2 = .722$ for the other.)

In order to get a better picture of the types of firms and persons that were involved in food retailing in Puerto Rico, 87 variables from the questionnaire were submitted to a factor analysis. The best solution appeared to be a six-factor solution which explained 41 per cent of the total variance. From the statistical analysis of Chapter V, it appears that the ideal type person to bring about change can be identified.

In factors 1, 2, and 6, and in the multiple correlation, we find the man who is young, well-educated, is a foreigner, who utilizes the mass media to a significant degree. In general, he is well-informed; he knows of the government programs set up to help him and his business, and, in addition, he has a knowledge of prices in other areas. He has traveled more than normal and believes in man influencing his outcome.

Basically, the harbinger of change is not the man with a store in the poorest section of town, but neither is he necessarily the member of the establishment which

bankers sometimes prefer. Change agents, such as development officials, could possibly raise their predictive capabilities if a personality and information knowledge test were to be given loan applicants. The test could be constructed from the findings of Chapter V.

The Innovation Indices

The questions concerning the innovations were similar to those used in previous studies. Five different innovation indices were constructed.

While editing, an additional part was added to the questionnaire by the author. The applicability of each of the nine items, which served as the raw material for the innovation indices, was judged on the basis of goods sold, size of sales, and type of store. This applicability as judged by the author was used in the construction of certain indices and also as a comparison with the applicability as perceived by the owner. There was considerable disagreement between the applicability as judged by the author and the owner-managers. However, there was significant and high correlation between the author's and the innovator's perceptions, and the owner's perceptions of applicability and use of the innovations. One conclusion to be drawn from this is that the recommendations of the outside short-term expert will not have much meaning to the participants within a given social

system, due to the fact that the participants' perceptions of possibilities and needs are likely to be quite different.

Facts Concerning Food Consumption

In spite of one of the highest birth rates in the world, the Puerto Rican population growth was less than the percentage growth of the population of the United States between 1950 and 1960. This smaller population growth apparently contributed to the well being of Puerto Ricans in terms of income which, in spite of an excellent growth, is still less than the poorest state of the United States. The consumer survey that was conducted in Mayaguez and San Juan as a part of the Latin American Food Study in 1965-66 found that 25 per cent of the families still had annual incomes of less than \$1,000, but the average incomes were considerably above what they had been. Such low incomes have been suggested as reasons for low purchases at supermarkets.

Some critics contend that supermarkets are only for the rich. While it was found to be true that a significantly greater proportion of the rich shopped at supermarkets, 58 per cent of all families in the San Juan and Mayaguez SMSA's bought most of their food at supermarkets. While 44 per cent of the families did some shopping in the central market or plazas, little money was spent there. In

San Juan, the average weekly expenditure was \$1.50, and in Mayaguez, it was only \$3.00.

Some persons thought that the maid of the well-to-do families did much of the shopping, just as Galbraith and Holton had reported in 1949-50. Apparently there has been considerable change in the manner of food purchase since, in the consumer survey, there was not one family who admitted that the maid did the food shopping. There were two probable explanations for this: supermarkets make shopping easier and perhaps even more enjoyable, and other job alternatives made it more difficult to find domestic help. Also, the man of the house is not a significant person in the food purchasing decisions. The woman makes these decisions.

Although the above facts are interesting, a study such as this is of little value to policy makers in government or private industry unless there are specific recommendations accompanying it. The next section is devoted to making some specific recommendations.

Policy Recommendations

Some Suggestions for Puerto Rico

1. Countervailing powers. Basically the Puerto Rican government and private businessmen deserve plaudits for the excellent performance of the retail food distribution sector since 1950. The openness of the Puerto Ricans

to newcomers and to new ideas is laudable. The willingness to permit new forms of competition should be maintained just as various means of countervailing powers have been. Even though the effort to form a buying and advertising association of independent stores failed in the late fifties, government and/or private interests should be ready to help form a new association since two of the largest retail chains have warehouses under construction. The new warehouses will probably lower the cost of purchases between 1 and 4 per cent. These lower costs can be reflected in lower prices, which will put the independent stores in tough competition. It could be reflected in higher profits which would leave the two larger operators open for anti-trust prosecution. In all probability, the larger operators will opt for passing at least part of their savings on to the consumer, which will benefit the consumer but put the stores without warehouses in a cost price squeeze. Based upon past experience as well as the theories of Schumpeter and Hagen, some of the existing operators who previously wanted nothing to do with group associations will be willing and anxious to join an association which will lower their cost.

There was some pressure in early 1966 to take anti-trust action against the most successful retail food chain because of its high profits. This author believes that

such action would have a disastrous effect on the investment climate. He believes that the government can spend its efforts and money much better by fostering countervailing forces which make competition stronger.

2. Foster the further development of a "national market." The marketing of fruits and vegetables has changed little since it was first studied in the early fifties. Some of the larger stores prefer to import produce from the United States mainland because of assurances of quality and price. There is a need for a coordinated retailer, government, and producer program similar to programs used to increase local egg production during the early sixties.

If imports of tropical fruits and meat from nearby islands were less complicated, more of a regional market could be created. Commonwealth Agriculture Department regulations keep some products from flowing freely into Puerto Rico. More study is needed of the prospects for trade within the Caribbean. However, it would appear that Puerto Rico could profitably export manufactured goods and buy more foods from nearby islands, especially the Dominican Republic.

3. Consider changing certain laws. Three areas that are now specifically covered by commonwealth laws and regulations seem to be blocking the further development of a "national market."

The law under which cooperatives are permitted to operate in Puerto Rico was approved before Commonwealth in 1946. As pointed out in Chapter III, there is no provision under the law for retailers or commercial operators of any sort to form a cooperative. The law permits only "consumers" or "producers" to form cooperatives. Yet, in the United States some of the best retailers (e.g., Associated Grocers) are members of a retail-owned cooperative. The independent food retailers of Puerto Rico need this alternative in order to remain a viable countervailing power.

Another area in which there are shackles which prevent effective operation of competitive forces is the anti-trust and monopoly field. Law No. 75, which was approved in June 1964, protects vested interests. Although some have argued that it is unconstitutional, it had not yet been tested at the time of this writing. The main provision is that a processor-manufacturer may not change his exclusive representative without giving the agent a disproportionate share of the future revenues.

Another unusual legal situation is that the United States anti-trust laws are seemingly held in abeyance. As of May 1966, there was a Commonwealth Office of Monopolistic Affairs, but it was new and operating with a limited staff. In contrast to the spirit of the United States'

anti-trust laws, there are differences apparently in price for a given quantity of goods purchased from the United States. Yet the above office was not prosecuting.

The 1962 edition of planning board regulations governs the development of new suburban shopping centers. That regulation specifies the minimum and maximum size and the type of stores to be constructed in each suburb. Since the construction company must build and pay for the neighborhood shopping center, the requirement has been met usually with the minimum size store. Many of the resulting food stores are too large to be run by one employee but too small to compete adequately with the large supermarkets in terms of lines of merchandise carried. Thus, this regulation should be studied for possible change.

Applicability of the Puerto Rican Experience

Certainly Puerto Rico is different. A sovereign nation would have more difficulties in letting retailers buy from suppliers in other areas. But, one must remain impressed with what can be done when there is consensus and a commitment to the objectives - which, in this case, was better food distribution in order to lower consumer prices. The experience of Puerto Rico has convinced the author that it is possible to avoid Robert Steven's "food drain" with improved distribution. The experience of Puerto Rico shows that public policy working in conjunction with

private enterprise can help make a better life for the people. It was only as the government got out of operating its own business and into a facilitative role that the rate of growth increased.

The Puerto Rican experience shows that the fear of unemployment as a result of commercial reforms can be and probably most always is a straw man. In a free and open society, reforms do not come about overnight. We live in a dynamic world and any new institution brings about reactions. As more efficient operators came into the scene in Puerto Rico, total employment in retail food distribution actually increased. There was apparently no time when employment decreased.

On Bringing about Reform

It is a known fact that Puerto Rico is one of the few areas of the world that has had a thorough-going reform in food distribution with little political opposition. One of the reasons for this was the manner in which the government of Puerto Rico approached the subject. The sequence of events which was described in detail in Chapter III was critical. First the top political leader indicated his concern with what he and others perceived to be a problem (in this case, high food prices). Some technicians were asked to make a detailed study of the situation and publicly make available their results. After the

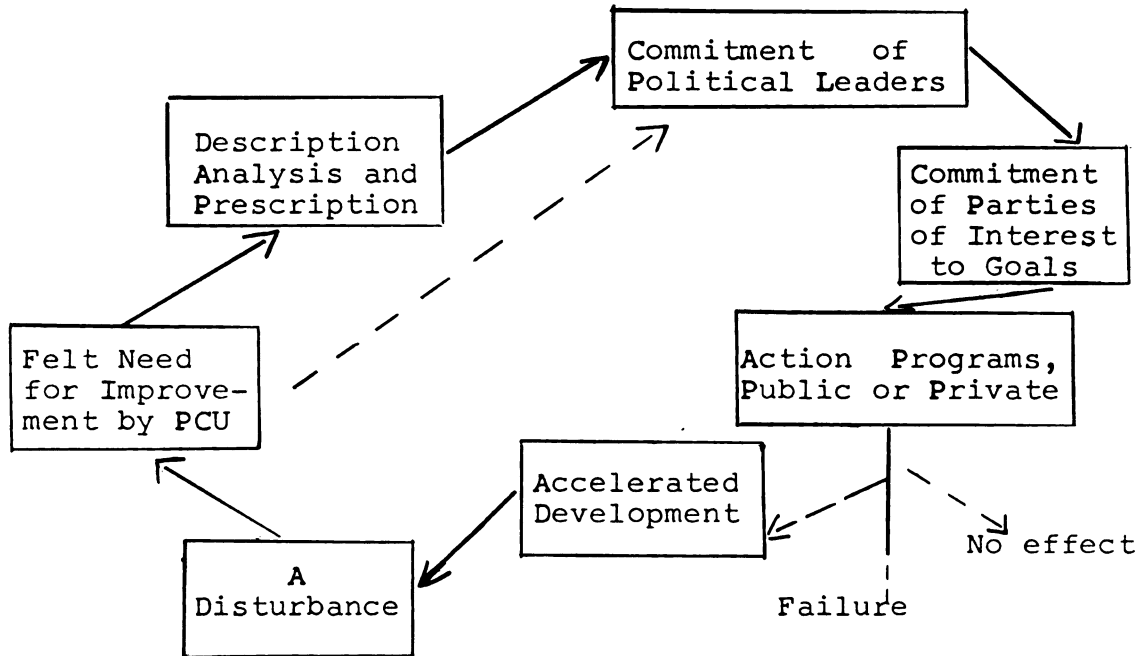
study was made, the top political leader appointed a commission of interested parties to study the technicians' recommendations. Finally, the government began a system of planned reform, acting upon the commission's recommendations.

A Paradigm

The diagram below is one way of describing the changes that took place in Puerto Rican food retailing over the last 15 years. The rectangles are events which appear to be significant in bringing about changes that could affect rates of development. Each person and each institution within which that person operates in a given social system is a production-consumption unit (PCU). That is, he has the potential to produce and the need to consume in order to survive. Persons and institutions relate to other persons and institutions through exchange. The arrows in the paradigm represent exchange. The exchange may or may not have a monetary value assigned to it; but, in the absence of coercion and if the relationship is to continue, in the long run both parties must perceive a gain from the exchange.

Economic development necessarily implies increased exchange due to increased specialization (i.e., interdependence).

A Paradigm of Events and Exchanges
in Food Retailing Changes



Start

⟷ = exchange which is made up of messages and goods and services.

Increased exchange will not come about rapidly without some factor to disturb the semi-closed system. The PCU changes internally--then he takes action and makes happen one of the events specified in the diagram. To the extent that the PCU can bring about a successful exchange relationship with other PCU(s), the other events may take place. Either formal or informal description analysis and prescription is necessary.

The event "commitment of political leaders" is especially critical. If the politicians oppose the change, it will probably not come about.¹ On the other hand, the event "commitment of political leaders" by itself is not a sufficient condition. It is desirable to have the commitment of parties of interest, so that they will not completely block the suggested changes. If the parties of interest are in a position which prevents them from blocking suggested changes, then action programs can be initiated.

At the time action programs are initiated, it cannot be known for certain what the outcomes will be. The best-planned efforts may not turn out as desired, but the action program is more likely to be successful if the PCU (government, corporation, or individual) had pragmatic individuals who: (1) are concerned with results which, in this case, are perhaps lower prices and certainly a higher capital output to input rate; (2) are open to new solutions; (3) are committed to the goals of a better standard of living; and (4) have the ability to predict the individual contributors to change (i.e., the innovator).

Summary

A government that was organized to solve problems and the blessing of the top political leader was a basic

¹There are those changes that come in spite of political opposition but they seem to be rare. The opposition to chain stores in the United States was overcome by their economic advantages.

factor in the changing retail system. The United States government is organized differently. The check and balance system sets up ministries which represent various interest groups (e.g., Labor, Commerce, Agriculture). In sharp contrast, the Puerto Rican government of the fifties had a powerful charismatic leader who essentially had three operating ministries: (1) planning--to make sure programs were moving toward agreed upon goals on time and at reasonable costs; (2) Fomento--the semi-autonomous agency charged with the horrendous job of assisting industrialists and commercial interests in setting up a sufficient number of operations to increase income of the Puerto Rican citizens and also hold down unemployment;² (3) the Department of the Treasury--charged with getting sufficient revenues for the government to operate. Although there were other ministries, these three held the power.

In reforming the food distribution sector, Puerto Rican officials made an intelligent choice in staying close to the consumer. They depended upon the retailers' knowing what consumers wanted and being able to get these goods from producers and processors.

Basically, the officials were concerned with a common set of goals: keeping food prices from rising too

²Puerto Rico had the well-known escape valve of unlimited migration at low cost to the United States.

rapidly and improving the retail stores. They were open-minded and willing to try a number of avenues. They were not married to any ideology except pragmatic results.

Further Research Needs

The research project of which this thesis is a part is funded through February 1968. In October and November 1966, the author and other members of the team moved on to one of two less-developed areas: (1) Recife, Brazil, in the northeast of that largest of South American nations, and (2) La Paz, Bolivia, the capital of the poorest country in Latin America. There, this research effort is being continued.

APPENDIX A

HISTORY OF THE LATIN AMERICAN FOOD
MARKETING STUDY

APPENDIX A

A HISTORY OF THE LATIN AMERICAN FOOD MARKETING STUDY

The signing of a contract dated April 15, 1965, by John A. Hannah of Michigan State University and C. H. Roller for the United States Agency for International Development climaxed a close interchange of ideas and modification of previously unsolicited proposals for studying the change in food distribution and its impact on economic development. Dr. Charles C. Slater and Dr. Harold M. Riley were the co-leaders of this project, which was first proposed in late 1963.

At that time a feasibility study that suggested the introduction of a major investment of AID funds in food retailing and wholesaling in Bogotá, Colombia, was under way. The director of this study, Mr. E. Lee Feller, who had been the chief of Fomento's food distribution action in Puerto Rico during the mid-fifties, believed approval of a full-scale investment program was imminent and invited Dr. Slater to look over the proposal to make suggestions for research and training which could be incorporated as a complementary program. In December 1963, Dr. Harold Riley,

an agricultural economist, was invited to join Dr. Slater, because of the former's experience and interest in research and teaching of agricultural marketing in Colombia. Frequent contact was maintained with Mr. Herbert Turner of the newly established Technical Cooperation and Research Office in the Agency for International Development. Mr. Turner provided many helpful suggestions for formulating this unsolicited research proposal.

Seed Money

In early 1964, it became evident that some funds were needed for a bibliographical search as well as a reconnaissance trip to South America. Dr. Garland Wood, Director of the M.S.U. Latin American Studies Center which was established in 1964, approved use of \$4500 of a larger Ford Foundation Grant for seed money. This grant provided the funds for the initial contacts. The bibliographical search by the author of this thesis showed that little had been written on the role of distribution (marketing) in economic development. In many cases, the underlying rationale of the development economist's theoretical construct of perfect competition with its complete knowledge and complete freedom of movement of resources generally ignored any need to look at distribution. In some other situations, the probable significance of distribution was noted but not dealt with.

There was considerable uncertainty connected with the feasibility study being concluded by Mr. Feller through his company, Alliance Associates, in early 1964. Yet it seemed it might well lead to a major action program in food distribution in Bogotá, Colombia, beginning in late 1964. If so, the researchers wanted to be on the scene of benchmark studies before that action program started. Research support from host country nationals would also be necessary.

The Trip

In June 1964, therefore, a survey trip was made to Bogotá, Colombia, and San Juan, Puerto Rico, by Drs. Riley and Slater and Mr. Wish. In Bogotá it quickly became evident that (1) there would not be any USAID-sponsored investment program growing out of Mr. Feller's feasibility study because of the political problems associated with the proposed changes in food distributions; and (2) there was an even greater need for a major research effort concerning distribution and its effect on economic development, partially because few people had any inkling of the role of distribution in economic development.

It was obvious that some of W. W. Rostow's speeches, which later were rewritten and became chapters on the creation of national markets in his book View from the Seventh Floor, reflected ideas on the role of distribution that could and should be subject to test. If Rostow were at least partially correct, then the process of accelerating

development lay, to a much greater extent, within the capabilities of a given nation than was previously thought possible. While in Colombia and Puerto Rico, there were several instances brought to our attention in which distribution played a critical role in the rate of development. An FAO official with several years' experience in land reform had become convinced that distribution improvements, through better communications and more stable prices, were more important than land reform. There were other reports of similar experiences. Few, if any, were documented. Even when documentation was available, it primarily involved case studies without strong theoretical structure.

San Juan was the second stop because of changes in food distribution that had been introduced as a result of the 1950 pioneer study of marketing institutions--Marketing Efficiency in Puerto Rico. The coordinators of the project wanted to know what had happened in Puerto Rico, where the situation was different. For fourteen years a popularly elected government with a strong commitment to social reform and economic development had supported and implemented economic feasibility studies. The above-mentioned Marketing Efficiency in Puerto Rico was only one of several studies impinging upon distribution. In addition, there was evidence of individual and governmental concern for increasing food production. However, no overall evaluation of these changes had been made. Nonetheless, since Puerto

Rico was--and is--a Commonwealth in association with the United States, various censuses of population, business, manufacture, and agriculture were available. As a result, Puerto Rico seemed like a logical place to begin the research. While being somewhat dissimilar, it was not completely different from the United States. Puerto Rico is not strictly a Latin American country, but it is not strictly North American either. It served as a stepping stone.

The Contract

After returning to East Lansing at the end of June 1964, Drs. Slater and Riley worked closely with Mr. Herbert Turner of USAID in drawing up a completely new proposal for submission to the U. S. Agency for International Development. The research approach proposed was approved by late December 1964. Final approval followed in late winter and the contract was formally signed in April 1965.

The Provisions of the Contract

Appendix B of the contract between Michigan State University and the U. S. Agency for International Development spelled out the general plan of operation. The primary purpose of this research project was to initiate and conduct a comparative study of food marketing systems in Latin American countries in the early stages of economic development. The study has, as its broad purpose, the design of more efficient, low cost food processing, marketing, and distribution systems.

The contract specifies that the work will be performed first in Puerto Rico and then in a growing urban area of some Latin American country. In Puerto Rico, the research team was charged with performing the following tasks in four major work areas: (1) to analyze changes in the food marketing system; (2) to study communication networks for information concerning prices and supplies at each step along the assembly and distribution channels serving the food shed; (3) to consider the process of adoption of marketing innovations; and (4) to evaluate such findings in an effort to produce some general recommendations. Before the first phase was completed, a seminar was also to be held to discuss all preliminary findings.

Phase II research was to parallel the studies conducted earlier in Puerto Rico. "The carry-over to the second phase will include independent and critical variables of food marketing systems; indices, statistical, and other indicators of performance; data collection methods and devices including field-tested interview schedules; technical factors such as preservation, storage, and physical handling systems, capital sources, labor conditions, marketing institution conditions, and regulatory framework."¹ The field work for the second phase was initiated in November 1966 in Recife, Brazil, by a team sent by Dr. Kelly Harrison of the Agricultural Economics Department.

¹Page B-6, USAID Contract, AID/TCR - 786.

In October 1966, this author began work on a related USAID-sponsored project with the Latin American Market Planning Center in La Paz, Bolivia.

APPENDIX B

SAMPLING PROCESS

APPENDIX B

SAMPLING PROCESS

The Sample

The sample of retailers and the universe from which it was drawn will be discussed below. There were actually two disproportionate stratified samples selected, one in the Mayaguez Standard Metropolitan Statistical Area and the other in the San Juan Standard Metropolitan Statistical Area. In each city, the municipal government maintains a list of commercial establishments that gives the name of the business, its address, and the sales base on which it was taxed. From these lists of retailers, those that had codes indicating food retailers were chosen. It was evident that the size and sale distribution approached a right triangle. In that universe for each city, a number was assigned to each firm. On the basis of Snedecor, page 501, formulas were calculated to determine the necessary sample size in each of five strata when a 95 per cent confidence limit was chosen for a 10 per cent error in the variable annual sales. After sample size was determined, a skip interval was calculated based upon sample size and size of the universe. An entry point into the universe

list was selected from a random number table and the sample selected in this way. In each strata of each city, 30 per cent additional names were chosen to make allowance for refusals, out of business, etc. In case the above names were insufficient, the procedure was to take the next name below the one for which a contact was not possible.

One reason for sampling the two cities separately was that the municipalities use different criteria to determine the annual sales and, subsequently, the tax to be paid. For instance, the largest pueblo store in San Juan is listed on the tax duplicate as having about \$6,000,000 in annual sales, which is close to estimate. On the other hand, the Mayaguez Co-op Supermarket is listed as having only \$300,000 in sales when, in fact, it has about \$3,000,000. It would appear that Mayaguez authorities use a much lower base from which to tax.

When one wishes to talk of the hypothetical population of San Juan and Mayaguez retailers, he uses an additional weighting of "4" for San Juan retailers. All weighting calculations were made on the basis of the sample obtained.

It can be noted from Table B-1 below that the larger stores were censused in each city. Their importance should not be underestimated since the 27 largest stores, or 0.6 per cent of the stores, had 49 per cent of the business in San Juan. On the other hand, 1.7 per cent of the stores had 25 per cent of the business in Mayaguez.

TABLE B-1--Characteristics of firms in the sample

Sales Range	Number of Establishments	Sample Desired	Sample Obtained	Weight for Population Estimates
SAN JUAN SMSA				
2,000- 11,999	3,249	30	22	86
12,000- 47,999	824	30	30	16
48,000-119,999	113	10	7	10
120,000-479,000	63	19	14	3
480,000 plus	27	27	16	1
(census)				
MAYAGUEZ SMSA				
2,000- 11,999	642	30	27	20
12,000- 47,999	41 (?)	16	14	2
48,000-119,999	8	8(cens.)	7	1
120,000-479,999	4	4(cens.)	3	1
480,000 plus	0	0		

Further Modifications for Analysis

Since those retailers in the smallest category, i.e., selling less than \$12,000 annually, seem to be quite different from other retailers, they were removed from certain of the analyses. The reasoning behind this is not difficult to envisage. (1) Any food retail establishment with less than \$12,000 sales, and with 25 per cent gross margin, which according to Puerto Rican Department of Labor figures is high, would have only \$3,000 annually to pay all operating expenses. They would find it difficult, if not impossible, to survive if such an establishment were their only means of income. Those of us on the project began referring to these small stores as peasant or subsistence retailers. (2) Interviewers found the small retailers had great diffi-

culty in giving meaningful answers to the questions they were asked. (3) There was a very high turnover of small retailers. Only the older person or the downtrodden seems to stay in business as a retailer selling less than \$12,000 annually. These were indicated both by an older median age of such small retailers and by the greater number of uncompleted interviews.

The tables below show two measures of the differences between those firms selling less than \$12,000 annually which, henceforth, will be called "subsistence retailers" and the larger firms. (Appendix C gives other definitions which are mentioned.)

TABLE B-2.--Year of establishment and per cent of interviews completed.

Item	Median Year of Establishment	Per cent of Establishments with whom Inter- view Completed
Subsistence Retailers (sales of \$12,000 annually or less)	1954	45%
Other Retailers (sales of over \$12,000 annually)	1960	63%

The primary reason for failure to complete an interview was that the firm had gone out of business. Thus, while there appears to be a higher turnover among small retailers as evidenced by the low completion rates, there are those subsistence retailers who remain year after year.

Table B-3 indicates the effect of eliminating the subsistence retailers from consideration of the innovations. It is obvious that the subsistence retailers were significantly less as adopters of these innovations.

TABLE B-3--Per cent adopting various innovations

Innovation Item	Weighted Per Cent Adoption	Weighted Per Cent Adoption with Elimination of Subsistence Retailers	Increase
1. Self-service, Dry Groceries	21.6	48.5	26.9
2. Self-service, Meats	11.7	21.6	9.9
3. Pre-pak fruits & vegetables	11.3	20.6	9.3
4. Cash register	75.2	87.0	11.8
5. Parking lot	7.2	28.3	21.1
6. Cash sales only	50.7	33.5	-17.2*
7. Paid advertising	7.6	16.3	8.7
8. Participate in employee training	5.7	8.8	3.1
9. Group buying	8.8	7.5	-0.7

Because of these differences, the subsistence retailers (n = 49) were excluded from the following analyses: (1) simple correlation; (2) multiple correlation; (3) factor analysis; see Chapter 5.

*There was a statistically significant difference in "cash sales" on the basis of city. Statistically, more stores sold on a cash-only basis in San Juan than in Mayaguez. When the city variable is held constant, the per cent selling on cash-only increases with increasing size. Among the "subsistence retailers," 59% sold for cash-only in San Juan, while only 11% sold on cash-only in Mayaguez.

APPENDIX C

QUESTIONNAIRES

CONSUMERS
AND
RETAILERS

LATIN AMERICAN FOOD MARKETING STUDY

RETAILER

DO NOT READ THIS PAGE TO THE RESPONDENT,
BUT FILL OUT BEFORE MAKING THE INTERVIEW

1.1-4 Project number

1.5-6 Name of the country and metropolitan area

Column 5Column 6

Puerto Rico	1	San Juan	1
Second country	2	Mayaguez	2
Third country	3	Rural	3
		Other	4

1.7-8 Zone within the city

01	06	12
02	07	13
03	08	14
04	09	15
05	10	16
	11	17
		18

1.9-12 Survey number

Retailers	0001-0999	Wholesalers	1001-1999
Farmers	2001-2999	Consumers	3001-3999
Processors	4001-4999	Truckers	5001-5999

Office name:

Office address:

Telephone number:

1.13 Name of the persons interviewed

President, Manager	Housewife
Owner	Husband
Second Chief	Old child
Third Chief	Other

1.14-15 Interviewer's number: Interviewer's name:

(COLUMNS 1 TO 15 ARE IN ALL CARDS)

1.16-17 Number of the card:

GENERAL INFORMATION TO BE FILLED BY
THE INTERVIEWER FROM OBSERVATION

1.20 Income level in the residential area:
1. High 2. Medium 3. Low 4. Very low

COMPARE WITH THE PHOTOGRAPHS AND MARK ONE

1.21 Type of the location (retailers only):
1. Neighborhood small store standing alone
2. Secondary commercial center
3. Downtown commercial area
4. Commercial center in modern suburb
5. Stall in Central Market
6. Adjacent to the Central Market

1.22-23 Week in which the interview was completed:
01 8-14 Nov. 03 22-28 Nov. 05 6-12 Dec.
02 15-21 Nov. 04 29 Nov.-5 Dec. 06 13-19 Dec.

Meet- ing	Appoint- ment Date	Day Time	Hour	Com- pleted	Person Not In	Closed	Re- fused	Moved	Spe- cify Others
1		M T N							
2		M T N							
3		M T N							

INTRODUCTION. SAY THIS: "Good morning. My name is _____
I am an interviewer from the study on the distribution of food
in Puerto Rico. This study is being made by the Alliance for
Progress under the supervision of Michigan State Univer-
sity. This work will provide valuable information for the
economy of Puerto Rico. All this information is strictly con-
fidential and will not be revealed to any government agency
or other private interests.

IF THE STORE CANNOT BE CLASSIFIED UNDER ANY OF THE CATEGORIES,
DO NOT INTERVIEW IT

1.24 Retailer: Type of business

1. Supermarket with complete line
2. Full with complete line
3. Coffee Bar GO TO THE NEXT QUESTION
4. Meat and/or fish shop
5. Chicken and egg shop
6. Pastry shop--retailer
7. Retailer--wholesaler
8. Others

ASK ONLY OF CAFES AND BARS

What percentage of your sales are for consumption
in your establishment? %

IF 50% OR MORE IS CONSUMED IN THE
ESTABLISHMENT, DO NOT INTERVIEW IT.

What percentage of the sales consumed in your
establishment are drink sales?

_____ % of sales _____ % of edible sales

First, it is necessary to know how many persons
work here.

_____ number of persons

1.25 Are you the person in charge to do most of the
decisions in your business?

0 No

1 Yes IF SO, GO TO THE NEXT PAGE. IF NOT, ASK:

1. Who is the person? _____ Name

_____ Title

2. Well, according to the investigation method
that the University is using, I have to ask
some questions to that person. Is the per-
son in his office, or here?

NOTE: THE PERSON WHO MAKES THE MAJORITY OF THE DECISIONS
IN THIS BUSINESS IS THE ONE WHO SHOULD BE INTERVIEWED.

LATIN AMERICAN MARKETING STUDY

PART I

COMMUNICATION BEHAVIOUR

READ: INTERVIEWER: Mr. _____, the next part of the questionnaire has to do with communication means. It is very important to know about the communications that you use in order to evaluate the questionnaire.

1.26 Did you listen to the radio yesterday?

- 0 No
1 Yes

1.27 Do you usually listen to the radio?

- 0 No GO TO #1.30
1 Yes

1.28-29 How many hours, more or less, do you listen to the radio in a week?

_____ hours

1.30 Did you read the newspaper yesterday?

- 0 No
1 Yes

1.31 Do you usually read the newspaper?

- 0 No GO TO #1.34
1 Yes

IF THE ANSWER IS "YES"

1.32-33 Which of the local newspapers do you usually read?

_____ El Mundo	_____ Miami Herald
_____ El Imparcial	_____ San Juan Star
_____ El Dia	_____ New York Times
	_____ Others

1.32-33

_____ Total Newspapers

1.34 Did you read any kind of magazine yesterday?

- 0 No
1 Yes

1.35 Do you usually read general information magazines?

- 0 No GO TO #1.38
1 Yes

IF THE ANSWER IS "YES"

1.36-37 Could you give me the names of the magazines you usually read?

DO NOT READ THE ANSWERS

<u> </u> Time	<u> </u> Bohemia
<u> </u> Life	<u> </u> Readers' Digest
<u> </u> San Juan Review	<u> </u> Religious
<u> </u> Boricua	<u> </u> Other (specify)

 Total Number of Magazines

1.38 Did you watch television yesterday?

- 0 No
1 Yes

1.39 Do you usually watch television?

- 0 No GO TO #1.42
1 yes

IF THE ANSWER IS "YES"

1.40-41 Approximately how many hours a week do you estimate you watch television?

 Total Number of Hours

1.42 Which of the following is your principal source of local news?

1. Newspapers
2. Television
3. Radio
4. Member of the family
5. Storekeepers
6. Other friends

1.51 _____ Total Correct

ASK ONLY TO BUSINESSES OF 10 OR MORE EMPLOYEES:

In your business, with whom do you consult
about your commercial problems?

	<u>Name</u>	<u>Position</u>
1.	_____	_____
(With whom else?)		
2.	_____	_____
(With whom else?)		
3.	_____	_____

1.52 Do your business friends believe that you are one
of the first in adopting new methods in the market?

- 0 No
- 1 I don't know
- 2 Yes

1.53 During the last month did you talk with your busi-
ness friends about new commercial techniques?

- 0 No
- 1 I don't know
- 2 Yes

1.54 _____ Total of 1.52 and 1.53

1.55 In general, do more persons come to you looking for
information and advice than go to other businessmen?

- 0 Less
- 1 I don't know
- 2 More

1.56-57 Which do you believe are the island's two most
progressive food retailers?

1. _____ 2. _____

1.58 Do you sell fruit and vegetables?

- 0 No PASS TO #1.62
- 1 Yes

- 1.59 Specifically, which in your principal source of information about the prices of locally grown fruits and vegetables?

READ THE ANSWERS

1. Newspapers
2. Radio
3. Visits to the market
4. Businessmen
5. Other non-business people

MARK ONLY ONE

- 1.60 If you have heard in any news program about other retail prices of fruits in the market, could you tell me what government agency sponsors the mentioned programs?

1. Department of Agriculture
2. Other agencies
3. I don't know

IF ANSWER IS DEPARTMENT OF AGRICULTURE:

- 1.61 How does this program help you? Does it tell you much, something, little, or nothing?

- 3 Much
- 2 Something
- 1 Little
- 0 Nothing

- 1.62 Do you have any knowledge of the prices in the United States of articles that you sell?

- 0 No GO TO #1.64
- 1 Yes

Where do you get these prices?

Name _____

- 1.63 How does this knowledge help you? Does it tell you much, something, little, or nothing?

- 3 Much
- 2 Something
- 1 Little
- 0 Nothing

- 1.64 What trade magazines do you read?

DO NOT READ THE ALTERNATIVES

_____ None	_____ Grocergram
_____ Chamber of Commerce Magazine	_____ Other(specify)
_____ Supermarket News	_____
_____ Total	<u>EDITOR: COUNT AND WRITE THE TOTALS</u>

- 1.65 What source of information do you believe is more useful, if you were to enlarge your business?

REFER TO CARD A

- 1 Neighbors or parents
- 2 Professors or teachers
- 3 Sales representatives
- 4 Government agencies
- 5 Consumers
- 6 Competitors
- 7 Mass communication source (newspaper, radio, magazine)
- 8 Yourself--no other source

MARK ONE

- 1.66 What kind of help does the Commerce Department provide for businesses like yours?

0 None

(Aid in loan

(Training

1 (Technical aid

(Sponsorships

(Other aids

(Don't know

- 1.67 Have you utilized this help?

0 No GO TO #1.69

1 Yes

- 1.68 Have you been satisfied with this help?

0 No

1 Yes

- 1.69 What's the purpose of the training program of the Commerce Department and Grand Union?

ANSWER: TO TRAIN BUTCHERS AND OTHER EMPLOYEES FOR STORES

0 Don't know, or false

1 Correct

END OF CARD

RETAILERS

PART II - ECONOMIC INFORMATION

NEW CARD

02 2.16-17

bb 2.18-19

2.20 What is the legal organization of this establishment?

READ THE ALTERNATIVES TO THE INTERVIEWEE AND MARK ONE

- 1 Private business or family
- 2 Partnership
- 3 Closed corporation
- 4 Open corporation
- 5 Cooperative (consumer or the owner)
- 6 Other (specify) _____

2.21-22 In what year was this firm established?

Year _____ IN TWO DIGITS--FOR EXAMPLE, "47"

2.23 TO BE COMPLETED BY THE EDITOR

- 1 Less than one year
- 2 1-5 years
- 3 6-10 years
- 4 11-20 years
- 5 More than 20 years

2.24 Do you (or the company) operate other super-markets, neighborhood groceries, or food stores of any kind?

- 0 None
- 1 One MARK ONE
- 2 Two
- 3 Three
- 4 Four or more

2.25-31 Besides your business as a food retailer, does your firm perform other functions, such as....?

2.25 0 No Wholesaler or agent
1 yes

2.26 0 No Food processing
1 Yes

2.27 0 No Production of agricultural products
1 Yes

- 2.28 0 No Transportation
 1 Yes
- 2.29 0 No Public warehouse or refrigerated warehouse
 1 Yes
- 2.30 0 No Other activities related to food
 1 Yes
- 2.31 Total _____ TO BE COMPLETED BY THE EDITOR
- 2.32-36 IF ANSWER IS YES IN #2.25:
Which was the total value of your sales as a whole-
saler and food agent in 1964?
- _____ Total sales in 1964 IN DOLLARS
- 2.37 Since 1950, what has been the most important source
of funds for enlarging your business?

INTERVIEWER: READ CONSECUTIVELY THE CATEGORIES FROM 1 TO 7. MARK ONE ONLY

- 1 Personal funds or inheritance
2 Income from the same business
3 **Loan from other family members**
4 Loan from other individuals, not parents
5 Commercial loans
6 Loan from government-sponsored agencies
7 Other (specify)

- 2.38-40 What was your total sales volume last week, including credit sales?

OBTAIN EXACT SALES IF IT IS POSSIBLE, ESTIMATED
IF THERE ISN'T DATA

Weekly IN DOLLARS

- 2.41-46 What was the sales volume in your retail business
 during the past year? ESTIMATE EXACTLY, 1964 OR
 CALENDAR YEAR NEARLY TO 1964
Annual IN DOLLARS
- 2.47-52 What was the sales volume in your retail business
 five years ago?
Annual IN DOLLARS ESTIMATE OR EXACT

2.53-56 What is the size of this location (exclude the part that's used for residence)?

Square feet = x **TO BE COMPLETED**
 long wide **BY THE EDITOR**

2.57-60 How big is the sales area?

Square feet = x

**TO BE COMPLETED
BY THE EDITOR**

2.61 Are you the owner of the building where your business is?

0 No (GO TO #2.62-65(a))

1 Yes (GO TO #2.62-65(b))

2.62-65(a) IF ANSWER IS "NO" What is your monthly rent?

2.62-65(b) IF ANSWER IS "YES" What would be the monthly rent if you were going to rent to others?

(a) or (b) Total IN DOLLARS

What kind of equipment do you have? MARK HOW MANY YOU HAVE OF EACH ONE

1. _____ Cash register
2. _____ Refrigerator, not self-serve
3. _____ Self-service refrigerator
4. _____ Deep freeze
5. _____ Cold storage for meat, fruits, and vegetables
6. _____ Truck
7. _____ Others (specify) _____

2.66-70 What is the actual value of your equipment and furniture, if you were going to sell today?

Value IN DOLLARS

2.71-75 What was the value of your merchandise inventory at the end of the 1964 calendar year?

Inventory IN DOLLARS

END OF CARD TWO

NEW CARD

03 3.16-17

bb 3.18-19

3.20-30 How many persons work in this business?

READ THE CATEGORIES TO THE INTERVIEWEE

_____ Number

3.20-21 Owner or manager

3.22-23 Relatives without pay

3.24-25 Relatives with pay

3.26-27 Employees not relatives

3.28-30 Total persons TO BE COMPLETED BY THE EDITOR

3.31-45 How many hours weekly does each of your employees work?

_____ Hours READ THE CATEGORIES TO THE INTERVIEWEE

3.31-33 Owner or manager

3.34-35 Relatives without pay

3.36-37 Relatives with pay

3.38-41 Employees not relatives

3.42-45 Total hours TO BE COMPLETED BY THE EDITOR

3.46-51 What method of advertising and promotion do you use?

READ THE LIST AND MARK THE CORRECT ANSWER ON ALL THE CATEGORIES

3.46 Window posters

0 No

1 Yes

3.47 Handbills

0 No

1 Yes

3.48 Advertisement in the newspapers

0 No

1 Yes

3.49 Advertisement by television

0 No

1 Yes

3.50 Loudspeaker

0 No

1 Yes

3.51 Others (specify) _____

0 No

1 Yes

3.52-55 How much did you spend in advertisement and promotion last year?

Total IN DOLLARS

3.56-59 Approximately how many individual sales transactions do you have weekly?

INTERVIEWER: IN SOME STORES, THIS INFORMATION IS IN THE CASH REGISTER

- 3.60
- 1 To 10%
 - 2 10-19%
 - 3 20-29%
 - 4 30-39%
 - 5 40-49%
 - 6 50-59%
 - 7 60-69%
 - 8 70% or more

3.61 What percentage of your sales were credit?

- 0 None GO TO #3.63
- 1 To 10%
- 2 10-19%
- 3 20-29%
- 4 30-39%
- 5 40-49% GO TO #3.62
- 6 50-59%
- 7 60-69%
- 8 70% or more

IF MORE THAN 10% ARE DELIVERED TO THE HOME, ASK:

3.62 What part of the home deliveries were ordered by phone?

- 0 None
- 1 Less than 25%
- 2 25-49%
- 3 50% or more

3.63 What percentage of your sales were made to restaurants or buyers who are not domestic consumers?

- 0 None
- 1 Less than 10%
- 2 10-19%
- 3 20-29%
- 4 30% or more

3.64 What do you think is the annual family income of the majority of your clients?

- 1 Less than \$2,000 annually
- 2 \$2,000-\$4,999
- 3 \$5,000-\$7,999
- 4 \$8,000 or more

3.65 Could you estimate approximately how many people come to your store by car?

- 0 Almost no one
- 1 Less than 25%
- 2 25-49%
- 3 50-74%
- 4 75-100%

At what time is your store open during the week?

Monday	_____	A.M.	to	_____
Tuesday	_____	A.M.	to	_____
Wednesday	_____	A.M.	to	_____
Thursday	_____	A.M.	to	_____
Friday	_____	A.M.	to	_____
Saturday	_____	A.M.	to	_____
Sunday	_____	A.M.	to	_____

3.67 How many hours is it open weekly?

THE EDITOR MAKES THIS CALCULATION

- 1 Less than 40
- 2 40-49
- 3 50-59
- 4 60-69
- 5 70-79
- 6 80-89
- 7 90 or more

END OF CARD #3

NEW CARD

04 4.16-17
bb 4.18-19

4.20-27 Could you estimate how your sales are divided into each of the following eight groups of products?

INTERVIEWER: SHOW THE LIST ON THE CARD (B). NOTE TO THE INTERVIEWEE THAT THESE ARE SALES FOR TAKE-HOME CONSUMPTION

- % 4.20-21 1. Dry groceries (canned goods, grains, rice, sugar, cereals, crackers, candy, etc.)
- % 4.22-23 2. Drinks (soft drinks, beer, liquor)
- % 4.24-25 3. Bread and fresh baked goods
- % 4.26-27 4. Dairy products and eggs, fresh milk, cheese, ice cream
- % 4.28-29 5. Frozen food (juice, vegetables, food)
- % 4.30-31 6. Fresh and frozen meat (beef, pork, chicken, fish, luncheon meat)
- % 4.32-33 7. Fruits and vegetables
- % 4.34-35 8. Non-edible products (paper, cleansers, dog food, tobacco and cigarettes, etc.)

 Total 100%

4.36-43 What percentage of all your merchandise arrives at your store by the following means of transportation?

INTERVIEWER: READ THE ALTERNATIVES AND WRITE THE PERCENTAGE

- % 4.36-37 By truck from the suppliers
- % 4.38-39 By your own trucks
- % 4.40-41 By independent truckers
- % 4.42-43 Others

 Total 100%

4.44-59 Normally, from how many different suppliers do you buy in one month?

SHOW CARD C TO THE INTERVIEWEE AND NOTE THE NUMBER IN THE FOLLOWING TABLE. INDICATE THE TOTALS AT THE LEFT.

Number of Suppliers	Product category	How many are whole-salers or commission merchants?	How much direct from processors?	How many are truckers?	How many are direct from farms?
4.44-45	Direct Food				
4.46-47	Drinks				
4.48-49	Bread and Pastry				
4.50-51	Dairy Products				
4.52-53	Frozen Food				
4.54-55	Meat				
4.56-57	Eggs				
4.58-59	Fruit and Fresh Veggies.				

4.60-62 Eliminating duplication, how many different suppliers do you have?

_____ Total of suppliers

Is your principal supplier a retailer or commissioner, direct processor, trucker, or a farmer? Could you give us his name?

MARK THE CATEGORY AND WRITE THE SUPPLIER'S NAME

- 1 _____ Retailer or commissioner
 2 _____ Direct processor
 3 _____ Trucker
 4 _____ Farmer

_____ Name of principal supplier

4.63-64 What percentage of your total purchases do you buy from your buying group or principal group of suppliers?

_____ %

4.65-66 What percentage of your purchases come directly from the U.S.A. to you? (For example, purchases from a commission merchant or wholesaler from the United States.)

_____ %

4.67-76 What percentage of your total purchases are...?

READ EACH ONE

4.67-68 At the time of delivery or within 10 days

4.69-70 Within 30 days

4.71-72 Within 60 days

4.73-74 Within 90 days

4.75-76 Other (specify) _____

_____ Total 100%

4.77-78 On what percentage of your purchases do you take a discount? (For example, special discount for cash payment, for buying in large quantities.)

_____ % of purchases

END OF CARD #4

NEW CARD

05 5.16-17 NOW I WOULD LIKE YOU TO INFORM ME ABOUT THE FOLLOWING PRACTICES
 bb 5.20-73 THAT SOME PERSONS USE IN THE RETAIL BUSINESS:

Practices	(a) ¹ Yes No	(b) ² Yes No	(c) ³ Never Yes Year	(d) ⁴ Yes No	(e) ⁵ Year	(f) ⁶ Number
1. Self-service in groceries						
2. Self-service in meats						
3. Pre-packaged fruits and vegetables						
4. Cash register						
5. Store parking						
6. Cash sales only						
7. Publicity in newspapers and/or handbills						
8. Participation in employee training programs						
9. Group buying plan, such as Lucky 7						

¹Expert opinion of practices that could be used?

²Which of the following practices could you utilize in your business?

³In what year did you adopt it, even though you don't use it now?

⁴Do you now use this practice? (ASK ONLY ON THE PRACTICES ADOPTED.)

⁵In what year did you stop using it? (ASK ONLY ON THE PRACTICES NOT IN C.)

⁶Why did you stop using it? (READ THE ALTERNATIVES AND WRITE THE NUMBER FROM

THIS LIST: (1) Didn't like the clients, (2) Very expensive, (3) Much work and difficult, (4) The employees didn't know how to use it, (5) Others--specify _____.)

NEW CARD

06 6.16-17 NOTE: FROM THE LAST QUESTION, CHOOSE THE
 bb 6.18-19 LATEST ADOPTED PRACTICE AND ASK THE FOLLOW-
 ING; IF MORE THAN ONE WAS ADOPTED AT THE
 SAME TIME, CHOOSE THE PRACTICE THAT HAS
 THE HIGHEST NUMBER.

6.20 From whom or from what source did you first learn of
 this practice?

 Name and number _____

READ THE SOURCES ALOUD

- 6.21 1 Seeing it yourself
 2 Advertisements
 3 Wholesalers
 4 Friends
 5 Government agencies
 6 Salesmen
 7 Others (specify) _____

MARK ONE

6.22 When you heard for the first time about the practices
 of cash sales only, was this commentary favorable or
 unfavorable?

- 0 Unfavorable
 1 Favorable

6.23 When you heard for the first time about self-service
 groceries, was this commentary favorable or unfavorable?

- 0 Unfavorable
 1 Favorable

IF THE INTERVIEWEE BELONGS TO A BUYING GROUP, ASK QUESTION #6.25;
IF THE INTERVIEWEE BELONGS TO NO GROUP, ASK QUESTION #6.24.

6.24 Why did you join a buying group?

MARK ONE ONLY; DON'T READ

- 1 Lower prices
 2 More convenient to buy in only one place
 3 Administrative help
 4 Dissatisfied with other wholesalers
 5 Others (specify) _____

6.25 Why didn't you join a buying group?

MARK ONE ONLY, DON'T READ

- 1 Prefer to be independent
- 2 Very expensive
- 3 My business is very small
- 4 Too many rules
- 5 There isn't sufficient variety
- 6 Others (specify) _____

READ THIS: Now I would like to ask you about the changes in your business.

6.26-31 What plans do you have for making changes in your business in the next two years?

TRY TWO TIMES, BUT DON'T READ. MARK ALL: NO, YES, DON'T KNOW

6.26 Enlarge and/or improve my actual building

- 0 No
- 1 Yes

6.27 Build a new building

- 0 No
- 1 Yes

6.28 Buy new equipment

- 0 No
- 1 Yes

6.29 Adopt new presentation methods in fruits and vegetables

- 0 No
- 1 Yes

6.30 Other (specify)

- 0 No
- 1 Yes

6.31 None

- 0 No
- 1 Yes

END OF PART II

NEW CARD

PART II-A

26 26.16-17

bb 26.18-19

26.20-23 How many dollars' loss had you because of robbery and pilferage last year?

Loss IN DOLLARS

26.24 Could you say that the robbery and pilferage problem in your business is bigger, the same, or less than five years ago?

- 3 Bigger
- 2 The same
- 1 Less

26.25-28 Do you have insurance in the following areas?

READ AND MARK ONE "YES" OR "NO"

26.25 Personal life insurance

- 0 No
- 1 Yes

26.26 Health and accident insurance

- 0 No
- 1 Yes

26.27 Insurance for automobile used in business

- 0 No
- 1 Yes

26.28 Robbery and pilferage in your business

- 0 No GO TO #26.34
- 1 Yes

26.29-32 IF ANSWER "YES", GO TO #26.28

Annually, what is the cost of the robbery and pilferage insurance in your business?

Annual cost IN DOLLARS

26.33-38 Which one of the following measures do you
utilize to protect from robbery?

READ AND MARK "YES" OR "NO" FOR EACH ONE

26.33 Night watchman

0 No
1 Yes

26.34 Alarm system

0 No
1 Yes

26.35 Photographic equipment

0 No
1 Yes

26.36 Large mirrors

0 No
1 Yes

26.37 Employ only relatives

0 No
1 Yes

26.38 Others (specify) _____

0 No
1 Yes

LATIN AMERICAN FOOD MARKETING STUDY

PART III ATTITUDES

NEW CARD

07 7.16-17 INTERVIEWER: Mr(s)._____, now I would like
bb 7.18-19 to ask for your frank opinion about each one of
the following statements. GIVE CARD TO INTERVIEWEE
Please listen while I read the statement, and
later tell me the number of the card which most
nearly corresponds to your opinion of the state-
ment. Your answer could vary between Number 1
(complete disagreement), 2 (in disagreement),
3 (indifferent), 4 (agreement), and 5 (complete
agreement).

INTERVIEWER: USE YOUR FINGER TO POINT TO THE NUMBERS ON THE
CARD. IF THE INTERVIEWEE ANSWERS THE FIRST QUESTION WITHOUT
GIVING A NUMBER, ASK HIM WHICH CORRESPONDS TO HIS OPINION.
MAKE SURE THAT IN ALL THE QUESTIONS IN THIS SECTION, THE IN-
TERVIEWEE ANSWERS BY NUMBER ONLY.

7.20 Children ought to be instructed to follow the ways
of the past to the letter.

IF THE INTERVIEWEE DOES NOT ANSWER BY NUMBER, MAKE HIM

7.21 I am very happy with the changes that are taking
place in Puerto Rico because new customs are usu-
ally better than old ones.

7.22 When a problem comes up in our community, the best
thing is to depend on the leaders to decide what
should be done.

7.23 We would be better off if the scientists would
leave things alone.

7.24 To succeed in life, the most important thing is luck.

7.25 I believe the things of the past are much better
and that changes usually bring problems.

7.26 One really can trust only relatives.

7.27 Let's eat, drink, and be merry, for tomorrow we
may die.

7.28 I prefer to work alone rather than be tied to my
relatives.

END OF CARD SEVEN

NEW CARD

08 8.16-17

bb 8.18-19

- 8.20 When a merchant reduces his prices on some article, this always means less profit for him.
- 8.21 Consumers spend more money on bananas when they're scarce than when they're abundant.
- 8.22 The mandatory ruling for classification and refrigeration of eggs has proved to be a good regulation.
- 8.23 When a merchant reduces his prices, the result is less profit for all.
- 8.24 The consumers can only spend a fixed portion of their income on food. The only way to increase their food expenditures is to increase their income.
- 8.25 Group organizations (e.g., agricultural cooperatives, retail buying groups) can be very beneficial.
- 8.26 Whenever family incomes increase, there is a greater proportion spent on food.
- 8.27 The milk regulations have benefited both the businessman and the consumer.
- 8.28 Supermarkets have all the business they're going to get.
- 8.29 The risk and insecurity in buying and selling tropical fruits is much less today for all participants in the marketing channel (that is, from farmers to consumers) than it was ten years ago.
- 8.30 The government programs usually benefit only a selected group of merchants who are influential in politics.
- 8.31 The statistics of the Department of Agriculture on agricultural production, volume of sales, and prices are reasonable and not biased.
- 8.32 Five years ago, the competition and pressure of other food stores was much stronger than it is today.

INTERVIEWER: That completes the section that requires you to answer according to a scale of agreement or disagreement. Now I would like to ask you some questions that you could answer choosing the alternative you prefer.

INTERVIEWER: READ THE QUESTIONS AND THE ALTERNATIVE ANSWER AND THEN MARK THE ANSWER OF THE INTERVIEWEE.

- 8.33 Today if a close relative would ask you to sign a personal loan that amounts to a month's salary, for a worthwhile purpose, what would you do?
- 2 I would gladly sign it.
 - 1 I would sign it because I feel obliged to do so.
 - 0 I wouldn't sign it.
- 8.34 Today if a close friend asked you to sign a personal loan that amounts to a month's salary, what would you do?
- 2 I would sign it gladly.
 - 1 I would sign it because I felt obliged to do so.
 - 0 I would not sign it.

Now, let us assume that you have saved \$10,000 from your regular income.

READ THE QUESTION TWICE, DON'T EXPLAIN

- 8.35 Which of the following investment opportunities would you choose?
- 1 An investment which insures a 6% profit, or \$600 annually.
 - 2 An investment in which there is a 50-50 chance of getting a 30% return on the investment or of finding a 10% loss. For example, you would have equal probability of getting a \$3,000 annual profit or of losing \$1,000.
 - 0 Don't understand
- 8.36 Let us assume that you belong to a buying group. If another wholesaler offers the same product at 25¢ less per box, would you do the following?
- 1 I would buy from the private wholesaler.
 - 2 I would ask the group for a lower price, and if they refused, I would buy from the wholesaler.
 - 3 I would buy in the group.

- 8.36-43 Let us suppose you received a gift of a sum equal to your annual salary. How would you use it? Indicate three of the following uses from the card you have in your hand.

MARK "NO" IN THE CATEGORIES YOU DO NOT SELECT

- 8.37 (1) Hide it in a safe place

0 No
1 Yes

- 8.38 (2) Put it in a local bank

0 No
1 Yes

- 8.39 (3) Invest in my business or some other

0 No
1 Yes

- 8.40 (4) Send to a bank in the United States, Canada, or Europe

0 No
1 Yes

- 8.41 (5) Buy or make payments on household goods, a car, trips

0 No
1 Yes

- 8.42 (6) Buy a farm or real estate

0 No
1 Yes

- 8.43 (7) Education of the family

0 No
1 Yes

END OF CARD #8

END OF PART III

PART IV INDIVIDUAL INFORMATION

NEW CARD

09 9.16-17 INTERVIEWER: Mr. _____,
 bb 9.18-19 now we will continue.

9.20 How old are you?

- 1 Less than 24
- 2 25-34
- 3 35-44
- 4 45-54
- 5 55-64
- 6 65 or more

What school did you last attend?

Name of the school _____.

9.21 How many years of schooling did you have?

Grade

- 0 0
- 1 1-3
- 2 4-6
- 3 7-9
- 4 10-12
- 5 13-15
- 6 16
- 7 17 or more

9.22 Have you been in military service for one year or more?

- 0 No GO ON TO #9.24
- 1 Yes

9.23 Did you use the G.I. Bill for education?

- 0 No
- 1 Yes

9.24 What is your major occupation?

- 1 Owner of a food store IF ANSWER IS 1 OR 2,
- 2 Manager of a food store GO TO #9.25
- 3 Professional doctor, lawyer,
 professor, government official, etc.
- 4 Farmer
- 5 Owner of another business IF ANSWER IS 3
- 6 White collar worker TO 8, GO TO 9.27
- 7 Skilled worker
- 8 Other

IF ANSWER IN #9.24 IS THAT THE MAIN OCCUPATION
IS IN THE FOOD BUSINESS:

9.25 How long have you worked in the grocery business?

- 0 Less than 1 year
- 1 Between 1-5 years
- 2 Between 6-10 years
- 3 Between 11-15 years
- 4 More than 15 years

9.26 Were others in your family in the grocery business before you?

- 0 No GO ON TO #9.28
- 1 Yes

IF ANSWER IN #9.24 IS THAT THE MAIN OCCUPATION
IS NOT IN THE FOOD BUSINESS:

9.27 Did you at one time work in the food business more than a year?

- 0 No
- 1 Yes

9.28 Do you know of other food merchants who have left the food business?

- 0 No GO ON TO #9.31
- 1 Yes

9.29 IF ANSWER IS YES

Were the majority of these persons friends, relatives, neighboring merchants, or others?

- 1 Friends or relatives
- 2 Neighboring merchants
- 3 Others

9.30 Why do you think they are not in the food business now?

- 1 On account of their age
- 2 They were not good managers
- 3 Competition of the supermarkets
- 4 They did not have enough money or were not able to get enough
- 5 Other (explain) _____

9.31 How long have you lived in the same place?

- 1 Less than one year
- 2 More than one but less than five years
- 3 More than five but less than ten years
- 4 More than ten years
- 5 I have lived here all my life

IF ANSWER IS "5", GO TO QUESTION 9.33

9.32 Where did you live before?

- 1 Head of the district (Ponce, Mayaguez, Arecibo, Aguadilla, Humacao, Bayamon, Guayama)
- 2 Other city
- 3 Cuba
- 4 Continental United States
- 5 Other (specify) _____

9.33 What do you consider yourself: a Puerto Rican, a North American, a Cuban, or other?

- 1 Puerto Rican
- 2 Cuban
- 3 Continental United States
- 4 Italian
- 5 Spanish
- 6 Other (specify) _____

9.34 Have you been outside of Puerto Rico?

- 0 No
- 1 Yes

9.35 To what religious group do you belong?

- 0 None
- 1 Catholic
- 2 Protestant (denomination) _____
- 3 Jewish
- 4 Other (specify) _____

9.36 Before paying taxes and social security, in which category, by number, does the income of your family fall in 1964, including all sources of income?

- 1 Less than \$500
- 2 \$500-\$999
- 3 \$1,000-\$1,999
- 4 \$2,000-\$3,499
- 5 \$3,500-\$4,999
- 6 \$5,000-\$9,999
- 7 \$10,000-\$19,999
- 8 \$20,000 or more

9.37-38 How many people depend on this income?

_____ Number of persons 1-99

Do you have children?

No IF ANSWER IS NO, ASK #9.39(b) and 9.40(b)

Yes IF ANSWER IS YES, ASK #9.39(a) and 9.40(a)

9.39(a) How much education do you want for them or for the oldest?

9.39(b) If you had a son, how much schooling would you want for him?

- 0 0
- 1 1-3
- 2 4-6
- 3 7-9
- 4 10-12
- 5 13-15
- 6 16
- 7 17 or more

9.40(a) Do you believe this is possible?

9.40(b) Do you believe this could be possible?

- 0 No
- 1 Yes

9.41 Do you play the lottery regularly?

- 0 No
- 1 Yes

9.42 How long have you worked in this business?

- 0 Less than one year
- 1 Between one and five years
- 2 Between six and ten years
- 3 Between eleven and fifteen years
- 4 Sixteen years or more

9.43 How long have you been in this place?

- 0 Less than one year IF ANSWERS ARE NOS.
- 1 Between one and five years 0, 1, 2, 3, ASK THE
- 2 Between six and ten years NEXT QUESTION
- 3 Between eleven and fifteen years
- 4 Sixteen years or more GO TO #9.50

Who had this place before you?

Name _____

Address _____

bbbbbbb 9.43-49 Blank -b

9.50 As a valuable contribution to the study, we need the additional cooperation of various companies. One of the directors of this study will be soliciting information in more detail from businesses such as yours. This information will also be confidential. We will want to get your accounting records to determine cost of operation.

At a later date, would you be in a position to provide your accounting records for 1964 (in strictest confidence) with the director of our research?

- 0 No
- 1 Yes

PART IV A

COMMENTS OF THE INTERVIEWER

TO FILL OUR AFTER THE INTERVIEW

9.51 How much time did the interview take?

- 1 Less than 60 minutes
- 2 60-74 minutes
- 3 75-89 minutes
- 4 90-104 minutes
- 5 105-119 minutes
- 6 120-150 minutes
- 7 More than 150 minutes

9.52 What was the source of information?

- 0 Accounts register seen by the interviewer
- 1 Accounts register seen only by the owner of the business
- 2 Personal estimates of the interviewee

9.53 Do you believe the interviewee answered honestly?

- 0 Almost never
- 1 Yes, sometimes
- 2 Yes, always

Other comments: _____

LATIN AMERICAN FOOD MARKETING STUDY

CONSUMER

DO NOT READ THIS PAGE TO THE RESPONDENT

1.1-4 Project number

1.5-6 Name of country and metropolitan area

<u>Column 5</u>		<u>Column 6</u>	
Puerto Rico	1	San Juan	1
Second country	2	Mayaguez	2
Third country	3		

1.7-8 Segment number

1.9-12 Survey number

Name of person interviewed:

Home address:

Telephone number _____

1.13 Income level in residential area COMPARE WITH PHOTO-
GRAPHS & MARK ONE

- 1 High
- 2 Middle
- 3 Low
- 4 Very low

1.14-15 Interviewer number

Name _____

01 1.16-17 Card number

bb 1.18-19

1.20-21 Week interview completed

03 22-28 November	05 6-12 December	07 20-23 December
04 29 November	06 13-19 December	08 27 December- 3 January

SAY THIS: "Good morning. My name is _____. I am an interviewer from the study on the distribution of food in Puerto Rico. This study is being made by the Alliance for Progress under the supervision of Michigan State University. This work will provide valuable information for the economy of Puerto Rico. All this information is strictly confidential and will not be revealed to any government agency or other private interests.

1. Are you the housewife?

Yes PASS TO #2.20
 No PASS TO #3

IF THE PERSON WHO ANSWERS THE DOOR IS MALE:

2. I would like to speak to the woman of the house. Is she in?

IF THERE IS NO HOUSEWIFE:

3. Do you prepare your meals in the home?

END THE INTERVIEW

No
 Yes

4. Are you the person who makes the majority of decisions as to what and where to buy the food for the home?

Yes PASS TO #2.20
 No

5. Who is this person?

Name _____

Now, according to the method of investigation the University is using, I have to ask a few questions of this person. Is this person at home?

PART I ECONOMIC INFORMATION

NEW CARD

02 2.16-17

bb 2.18-19

2.20-21 How many persons live and eat regularly in the home?

Number of persons _____

2.22 Which best describes the composition of this family?

- CIRCLE ONE
- 1 Married couple with no children under 18
 - 2 Married couple with children
 - 3 Woman with children
 - 4 Other _____

2.23-24 During the last week, how many members of your family ate one or more meals outside the home?

Number of persons _____

2.25 Does a hired woman cook most of the meals in the home?

- 0 No
- 1 Yes
- 2 Yes, we have one, but she does little cooking

2.26 Who decides what food to buy for the family?

- 1 Housewife
- 2 Man in the family
- 3 Both wife and husband together
- 4 Maid
- 5 Other (specify) _____

CIRCLE
ONE

2.27 Who actually buys most of the food for the family?

- 1 Housewife
- 2 Man in the family
- 3 Both wife and husband together
- 4 Maid
- 5 Other (specify) _____

CIRCLE
ONE

GIVE THE INTERVIEWEE THE SHEET OF ANSWERS AND
READ THE FOLLOWING:

On this sheet we have a list of places where it is possible to buy groceries. The following question refers to your purchases:

2.28 Where did you buy most of your food two years ago?

MARK
ONE

- 0 Don't know, or doesn't apply
- 1 Village
- 2 Co-op supermarket
- 3 Grand Union
- 4 Lucky Seven
- 5 Other supermarket
- 6 Food Stores
- 7 Market place
- 8 Other (specify) _____

2.29 Where did you buy most of your food during the last month?

MARK
ONE

- 0 Don't know, or doesn't apply
- 1 Village
- 2 Co-op supermarket
- 3 Grand Union
- 4 Lucky Seven or Cuin
- 5 Other supermarket
- 6 Food Stores
- 7 Market place
- 8 Other (specify) _____

Can you walk to any of these places?

READ
EACH
TYPE

2.30 Supermarket

- 0 No
- 1 Yes

2.31 Food store

- 0 No
- 1 Yes

2.32 Specialized food stores (bakery, etc.)

- 0 No
- 1 Yes

2.33 During the last two weeks, have you bought groceries at any supermarket?

- 0 No GO TO #3.28

REFER TO
HANDOUT

1 Yes In which of the supermarkets did you buy groceries? Among these, in which did you buy groceries?

2.34-54 Approximately how much spent for food, not including non-food items, in each of the supermarkets in the last two weeks?

2.34-36 Village

WRITE DOLLARS
NOT CENTS

2.37-39 Grand Union

2.40-42 Co-op

2.43-45 Lucky Seven

2.46-48 Cuin

2.49-51 Bargain Town

2.52-54 Other (specify)

2.55 FOR THE EDITOR ONLY

2.56 During the last two weeks, how many times has your family bought food in supermarkets?

NEW
CARD

03 3.16-17

bbb 3.18-20

FOR THE SUPERMARKET WHERE HE MADE THE MAJORITY OF THE PURCHASES (2.34-54), ASK:

3.21 What is the distance from the house to the principal supermarket?

- 1 In the same block
- 2 Less than .5 kilometer
- 3 From .5 to 1 kilometer
- 4 Between 1 and 2 kilometers
- 5 Between 2 and 5 kilometers
- 6 More than 5 kilometers

3.22 What kind of transportation was used to get to the supermarket the last time you went? MARK ONE

- 1 Walking both ways
- 2 Walk one way, return by taxi
- 3 By bus or public car
- 4 Taxi both ways
- 5 Private car (family or friends)
- 6 Other (specify) _____

3.23 Do you use delivery service when buying from supermarkets?

- 0 No, or there is none
- 1 Yes
- 2 Sometimes

3.24 Do you buy on credit at this supermarket?

- 0 No, or there is none
- 1 Yes
- 2 Sometimes

3.25-27 Why did you choose this supermarket?

READ THE QUESTION AND SHOW THE INTERVIEWEE THE ANSWERS ON THE SHEET. IN THE SPACE PROVIDED, WRITE THE NUMBERS OF THE TWO OR THREE REASONS MENTIONED.

3.25 First reason _____

3.26 Second reason _____

3.27 Third reason _____

END OF THE SECTION ON SUPERMARKETS

3.28 During the last two weeks, has your family bought food from a food store?

- 0 No GO TO #3.40
- 1 Yes

3.29-31 Approximately how much did you spend on food at food stores during the last two weeks?

Dollars spent \$ _____

3.32 How many times has the family bought food in a food store in the last two weeks?

Number of times _____

FOR THE FOOD STORE WHERE HE BOUGHT MOST OF THE PURCHASES, ASK:

3.33 How far from your house is it to the food store?

- 1 In the same block
- 2 Less than .5 kilometer
- 3 From .5 to 1 kilometer

**READ AND
CIRCLE ONE**

3.34 What means of transportation did you use to get to the food store the last time?

- 1 Walking both ways
- 2 Walk one way and return by taxi
- 3 by bus or public car
- 4 Taxi both ways
- 5 Private car (family or friends)
- 6 Other (specify) _____

READ AND
CIRCLE ONE

3.35 Do you use the store's delivery service?

- 0 No, or there is no service
- 1 Yes
- 2 Sometimes

3.36 Did you buy on credit at this store?

- 0 No, there is no credit
- 1 Yes
- 2 Sometimes

3.37-39 Why do you shop at this food store?

READ THE QUESTION AND SHOW THE INTERVIEWEE THE ANSWERS ON THE SHEET. WRITE THE NUMBERS OF TWO OR THREE REASONS MENTIONED IN THE SPACE PROVIDED.

3.37 First reason _____

3.38 Second reason _____

3.39 Third reason _____

END OF THE SECTION ON FOOD STORES

3.40 During the last two weeks has the family bought fruit, vegetables, or other food from the market place?

- 0 No GO TO #3.49
- 1 Yes

3.41-42 Approximately how much was spent at the market place in the last two weeks?

\$ _____ Dollars spent

3.43-44 How many times has the family bought food at the market place in the last two weeks?

_____ Number of times

3.45 How far is it from your home to the market place?

- 1 In the same block
- 2 Less than .5 kilometer
- 3 From .5 to 1 kilometer
- 4 Between 1 and 2 kilometers
- 5 Between 2 and 5 kilometers

READ AND
CIRCLE ONE

3.46 What means of transportation did you use the last time you went to the market place?

- 1 Walking both ways
- 2 Walking one way and return by taxi
- 3 By bus or public car
- 4 In taxi both ways
- 5 Private car (family or friends)
- 6 Other (specify) _____

READ AND
CIRCLE ONE

3.47-48 What are two main reasons you buy at the market place?

READ THE QUESTION AND SHOW THE INTERVIEWEE THE ANSWERS IN THE SHEET. WRITE THE NUMBERS OF THE TWO REASONS MENTIONED IN THE SPACE PROVIDED.

3.47 First reason _____

3.48 Second reason _____

END OF THE SECTION ON MARKET PLACE

3.49 During the last two weeks, has your family bought at a meat shop?

- 0 No GO TO #3.58
- 1 Yes

3.50-51 How much did you spend at the meat shop during the last two weeks?

\$ _____ Dollars spent

3.52-53 Blank

3.54 How far is it from the meat shop to your house?

- 1 In the same block
- 2 Less than .5 kilometer
- 3 Between .5 and 1 kilometer
- 4 Between 1 and 2 kilometers
- 5 Between 2 and 5 kilometers

READ AND MARK ONE

3.55 Do you buy on credit at the meat shop?

- 0 No, or there is none
- 1 Yes
- 2 Sometimes

3.56-57 What are two main reasons you buy at this meat shop?

READ THE QUESTION AND SHOW THE INTERVIEWEE THE ANSWER IN THIS SHEET. NOTE THE TWO MENTIONED.

3.56 First reason _____

3.57 Second reason _____

END OF SECTION ON MEAT SHOPS

3.58 During the last two weeks, has your family bought at a poultry shop?

- 0 No GO TO #4.20
- 1 Yes

3.59-60 How much did you spend at the poultry shop during the last two weeks?

\$ _____ Dollars spent

3.61-62 How many times did you buy there in the last two weeks?

_____ Number of times

3.63 What is the distance from your house to the poultry shop?

- 1 In the same block
- 2 Less than .5 kilometer
- 3 From .5 to 1 kilometer
- 4 Between 1 and 2 kilometers
- 5 Between 2 and 5 kilometers

3.64 Did you buy on credit at the poultry shop?

- 0 No, or there is none
- 1 Yes
- 2 Sometimes

3.65-66 What are two main reasons you buy at this poultry shop?

3.65 First reason
3.66 Second reason

READ THE QUESTION AND SHOW INTERVIEWEE THE ANSWERS ON THE SHEET. WRITE THE TWO MENTIONED.

END OF THE SECTION ON POULTRY SHOPS

4.20 During the last two weeks has your family bought from a bakery?

- 0 No GO TO #4.28
1 Yes

4.21-22 About how much was spent at the bakery in the last two weeks?

\$ _____ Dollars spent

4.23-24 How many times have you bought at the bakery during the last two weeks?

_____ Number of times

4.25 How far is it from your house to the bakery?

- 1 In the same block
2 Less than .5 kilometer
3 From .5 to 1 kilometer
4 Between 1 and 2 kilometers
5 Between 2 and 5 kilometers

READ AND MARK ONE

4.26-27 What are your two most important reasons for buying at this bakery?

READ THE QUESTION AND SHOW THE INTERVIEWEE THE ANSWERS ON THE SHEET. WRITE THE TWO MENTIONED.

4.26 First reason _____

4.27 Second reason _____

END OF THE BAKERY SECTION

4.28 During the last two weeks has your family purchased from a dairy?

- 0 No GO TO #4.33
1 Yes

4.29-30 Approximately how much was spent on milk purchased directly from the dairy?

\$ _____ Dollars spent

4.30 Did you buy on credit at the dairy?

- 0 No, or there is none
1 Yes
2 Sometimes

4.31-32 What are the two main reasons you buy from this dairy?

4.31 First reason _____

4.32 Second reason _____

READ THE QUESTION AND
SHOW THE INTERVIEWEE
THE ANSWERS ON THE SHEET.
WRITE THE TWO MENTIONED.

END OF DAIRY SECTION

4.33 During the last two weeks have you purchased from a street peddler?

0 No GO TO #4.40
1 Yes

4.34-35 About how many dollars were spent with street peddlers in the last two weeks?

\$ _____ Dollars spent

4.36-37 How many times did you buy from street peddlers in the last two weeks?

_____ Number of times

4.38-39 What are the two most important reasons why you buy from street peddlers?

4.38 First reason _____

4.39 Second reason _____

END OF STREET PEDDLER SECTION

4.40-50 How much was spent in the following places during the last two weeks?

4.40-41 Special fruit and vegetable stores

4.42-43 Truckers at roadside stands

4.44-45 Farmers on the farm

4.46-47 Others (specify) _____

4.48-50 Total spent _____ FOR THE EDITOR

4.51 Did you get any gifts of food from friends or relatives that live in the country last month?

0 No
1 Yes

4.52 Did you receive any food from the government last month?

- 0 No
1 Yes

4.53 Do you feel that brand-name products like Goya, DelMonte, etc., indicate quality?

- 0 No
1 Yes

4.54 Do you belong to a consumer's co-op?

- 0 No
1 Yes

4.55 How many years have you belonged to this co-op?

- 1 Less than 5 years
2 5 to 10 years
3 More than 10 years

CIRCLE ONE

4.56 Would you buy in a co-op like yours if other supermarkets had lower prices?

- 0 No
1 Yes
9 Don't know

4.57 Does the family save or invest part of its income?

- 0 No
1 Yes

GO TO #4.71

4.58-64 In which of the following forms are your savings now?

READ THE ALTERNATIVES AND CIRCLE ALL WHICH APPLY

- 4.58 Cash
4.59 Banks
4.60 Bonds
4.61 Stocks
4.62 Real estate
4.63 Invested in businesses
4.64 Other

- 4.65-70 What are the family savings for?
- 4.65 To buy a house
- 4.66 To buy durable possessions (furniture,
refrigerator, car, T.V., etc.)
- 4.67 For old age
- 4.68 For emergencies
- 4.69 For children's education
- 4.70 Other
- 4.71 Do you have a refrigerator in your home?
- 0 No
- 1 Yes
- 4.72 Do you have freezer capacity of eight pounds
(4 quarts) or more?
- 0 No
- 1 Yes
- 4.73 Does the family have a car or pick-up truck?
- 0 No
- 1 Yes

END OF PART I - ECONOMIC INFORMATION

PART II - INDIVIDUAL INFORMATION

INTERVIEWER: Mr.(s) _____, now we will continue with the interview and I will ask you a few personal questions.

9.20 How old are you?

- 1 24 or less
- 2 25-34
- 3 35-44
- 4 45-54
- 5 55-64
- 6 65 or more

CIRCLE ONE

Last school attended?

Name of school _____

9.21 How many years of education?

- | | <u>Grade</u> |
|---|--------------|
| 0 | 0 |
| 1 | 1-3 |
| 2 | 4-6 |
| 3 | 7-9 |
| 4 | 10-12 |
| 5 | 13-15 |
| 6 | 16 |
| 7 | 17 or more |

MAKE THE FOLLOWING QUESTIONS DIFFERENT DEPENDING ON SEX

9.22 Has your husband (or you) spent at least a year in the military service?

- 0 No GO TO #9.24
- 1 Yes

9.23 Did he (or you) use the G.I. Bill for education?

- 0 No
- 1 Yes

9.24 How many members of the family work outside the house?

_____ Number

WRITE THE NUMBER

- 9.25 Does the housewife work outside the home?
- 1 No housewife
 - 0 No GO TO #9.27
 - 2 Yes _____
- 9.26 Part-time or full-time?
- 1 Full-time
 - 2 Part-time
- 9.27 Has any member of the family ever owned a food store, supermarket, or small coffee shop?
- 0 No GO TO #9.32
 - 1 Yes _____
- 9.28 Is he still in business?
- 1 Yes GO TO #9.32
 - 0 No _____
- 9.29 How many years since he left the business?
- 1 Less than 1 year
 - 2 1 to 3 years
 - 3 4 to 6 years
 - 4 7 to 9 years
 - 5 10 years or more
- READ THE ANSWERS
- 9.30 Is he (or she) retired, unemployed, or employed now?
- 1 Retired) GO TO #9.32
 - 2 Unemployed)
 - 3 Employed
- 9.31 Employed in the food business?
- 0 No
 - 1 Yes
- 9.32 Have you always lived in this city?
- 1 Yes GO TO #9.34
 - 0 No

- 9.33 Which of these best describes the place where you lived before moving to this city?

READ THE ANSWERS AND CIRCLE ONE

- 1 Other principal city on the Island (San Juan, Mayaguez, Ponce, Arecibo)
- 2 Small town on the Island
- 3 Rural area on the Island
- 4 Cuba
- 5 Other Caribbean island
- 6 Continental United States
- 7 Other (specify) _____

- 9.34 Have you ever been outside Puerto Rico?

- 0 No
- 1 Yes

- 9.35 To what religion do you belong?

- 0 None CIRCLE ONE
- 1 Catholic
- 2 Protestant
- 3 Jewish
- 4 Other

- 9.36 Before taxes and social security, what was the total income of the family in 1964?

- 1 Less than \$500
- 2 \$500-\$999
- 3 \$1,000-\$1,999
- 4 \$2,000-\$3,499
- 5 \$3,500-\$4,999
- 6 \$5,000-\$9,999
- 7 \$10,000-\$19,999
- 8 \$20,000 or more

- 9.37 Do you have children?

- 0 No ASK #9.38(b) and #9.39(b)
- 1 Yes ASK #9.38(a) and #9.39(a)

- 9.38(a) How many years of education do you want for your oldest son?

- (b) If you had a son, how many years of education would you want for him?

(a) and (b)

- | | |
|----------------|------------------|
| 0 0 | 4 10 to 12 years |
| 1 1 to 3 years | 5 13 to 15 years |
| 2 4 to 6 years | 6 16 |
| 3 7 to 9 years | 7 17 or more |

9.39 (a) Do you think it will be possible?

(b) Do you think it would have been possible?

0 No

1 Yes

9.40 Do you play the lottery regularly?

0 No

1 Yes

END OF INDIVIDUAL INFORMATION SECTION

LATIN AMERICAN FOOD MARKETING STUDY

PART III - ATTITUDES

NEW CARD

07 7.16-17 INTERVIEWER: Mr(s). _____, now I would
 bb 7.18-19 like your frank opinion about the following
 statements: GIVE THE INTERVIEWEE THE CARD.
 Please listen while I read the statement and
 later tell me the number on the card which
 most nearly corresponds to your opinion of the
 statement. Your answer could vary between
 Number 1 (complete disagreement), 2 (in dis-
 agreement), 3 (indifferent), 4 (in agreement),
 and 5 (complete agreement).

INTERVIEWER: USE YOUR FINGER TO SHOW THE NUMBERS ON THE CARD.
IF THE INTERVIEWEE ANSWERS THE FIRST QUESTION WITHOUT GIVING
A NUMBER, ASK THAT HE (SHE) GIVES THE NUMBER CORRESPONDING TO
HIS OPINION. OBLIGE THE INTERVIEWEE IN ALL OF THE QUESTIONS
IN THIS SECTION TO ANSWER WITH A NUMBER ONLY.

7.20 Children should be instructed to follow the ways of
 the past to the letter.

IF THE INTERVIEWEE DOES NOT ANSWER BY NUMBER, MAKE HIM

- 7.21 I am very happy with the changes that are taking
 place in Puerto Rico because new customs are usu-
 ally better than old ones.
- 7.22 When a problem arises in the community, it's best
 to depend upon the leaders to decide what should
 be done.
- 7.23 We would be better off if the scientists would
 leave things alone.
- 7.24 To succeed in life, the most important thing is luck.
- 7.25 I believe the ways of the past are much better, and
 that changes generally bring problems.
- 7.26 One can really trust only relatives.
- 7.27 Let's eat, drink, and be merry, for tomorrow we
 may die.

END OF CARD SEVEN

NEW CARD

08 8.16-17

bb 8.18-19

- 8.20 The big supermarkets should be regulated by the government before they drive the small stores out of business.
- 8.21 The weighing scales in supermarkets are fixed to favor the owner.
- 8.22 The mandatory nature of the grading and refrigeration of eggs has proven to be a wise regulation.
- 8.23 I don't trust the advertisements for specials in the supermarkets.
- 8.24 Consumers can only spend a certain percentage of their income on food. The only thing that would increase the amount they spend on food is an increase in income.
- 8.25 Consumers need more and better information on prices and quality of products to help them in their shopping.
- 8.26 It's risky to buy pre-packaged fruit and vegetables.
- 8.27 The milk regulations have been beneficial to both business and consumers.
- 8.28 Supermarkets have all the business they are going to get.
- 8.29 The risk and insecurity of selling and buying minor fruits are much less today for everyone than they were ten years ago.
- 8.30 Government programs usually benefit only a select group of businessmen influential in politics.
- 8.31 The quality and variety of foods are better now than ten years ago.
- 8.32 It's more fun to shop in a large supermarket than to shop in a small food store.
- 8.33 Stricter regulations are needed for the butchering and distribution of meat.

- 8.34 The weighing scales in food stores are fixed to favor the retailer.
- 8.35 Assume you had an annual bonus of \$500. How would you divide up the money into the following categories?

INDICATE THE AMOUNT IN DOLLARS THAT YOU WOULD USE IN THE FOLLOWING CATEGORIES:

8.35-37	Put it in a safe place	\$ _____
8.38-40	Put it in a savings account.	\$ _____
8.41-43	Spend it on food.	\$ _____
8.44-46	Spend it on other family necessities like clothes and household goods.	\$ _____
8.47-49	Automobile and transportation.	\$ _____
8.50-52	Spend it on improving the house.	\$ _____
8.53-55	Invest in some business.	\$ _____
8.56-58	Education of the family.	\$ _____
8.59-61	Others (including recreation)	\$ _____
Total (<u>SHOULD BE \$500</u>)		\$500.00

- 8.62 Do you think you could get an additional job?

0 No
 1 I don't know GO TO #8.64
 2 Yes _____

- 8.63 What minimum hourly rate would you accept for this extra job?

1 I can't work more
 2 I don't want to work more
 3 Less than \$.50 per hour
 4 \$.50 to \$.75
 5 \$.76 to \$1.00
 6 \$1.01 to \$1.50
 7 \$1.51 to \$3.00
 8 More than \$3.00

- 8.64 What improvements do you feel could make your community a better place to live?

DO NOT READ THE ANSWERS

- 1 Nothing END OF PART III, GO TO PART IV
- 2 More parks and amusement centers
- 3 More and better schools
- 4 More and better public subdivisions
- 5 Others (specify) _____

- 8.65 Would you or your wife be willing to devote 50 hours of your free time next year to work on projects that would improve your community?

- 0 No
- 1 Yes END OF PART III, GO TO PART IV

PART IV COMMUNICATION BEHAVIOR

INTERVIEWER: Mr.(s)._____, the next part of the questionnaire has to do with the methods of communication. It is very important to know the methods of communication you use to be able to evaluate the questionnaire.

INTERVIEWER: PLACE A CIRCLE AROUND THE NUMBER AND THE ALTERNATIVE.

1.26 Did you listen to the radio yesterday?

0 No
1 Yes

1.27 Do you listen regularly?

0 No GO TO #1.30
1 Yes

1.28-29 How many hours per week do you listen to the radio?

_____ hours

1.30 Did you read the newspaper yesterday?

0 No
1 Yes

1.31 Do you read the newspaper regularly?

0 No GO TO #1.34
1 Yes

1.32-33 What newspaper do you read regularly?

DO NOT READ THE NAMES. CIRCLE ALL THOSE WHICH APPLY.

El Mundo	Miami Herald
El Imparcial	New York Times
El Dia	Wall Street Journal
San Juan Star	Others

_____ Total newspapers TO BE COMPLETED BY EDITOR

1.34 Did you read a magazine yesterday?

0 No
1 Yes

1.35 Do you read information magazines regularly?

- 0 No GO TO #1.38
1 Yes

1.36-37 Which magazines do you read regularly?

DO NOT READ THE ANSWERS. CIRCLE THOSE WHICH APPLY.

Bohemia	Others (specify)
Boricua	
Selecciones - Readers' Digest	_____
Alma Latina	_____
Life	_____
Look	_____
Time	_____

Total number of magazines
TO BE COMPLETED BY EDITOR

1.38 Did you watch television yesterday?

- 0 No
1 Yes

1.39 Do you watch television regularly?

- 0 No GO TO #1.42
1 Yes

1.40-41 Approximately how many hours a week do you watch television?

_____ Hours

1.42 What is your main source of local news?

READ THIS LIST TO THE INTERVIEWEE AND CIRCLE ONE ONLY.

- | | |
|--------------|------------------|
| 1 Newspapers | 4 Family members |
| 2 Television | 5 Businessmen |
| 3 Radio | 6 Other friends |

- 1.44-49 This is a quiz on top officials: The respondent is asked to identify leaders by their titles.

IF THE ANSWER IS "I DON'T KNOW," MARK FALSE.

- 1.44 Chief Justice of the Supreme Court (Earl Warren)
 1 True
 0 False
- 1.45 Prime Minister of Communist China (Mao Tse-Tung
 or Chou En-Lai)
 1 True
 0 False
- 1.46 Director of the Fomento Co-operative
 of Puerto Rico (Abimael Hernandez)
 1 True
 0 False
- 1.47 Secretary of the Department of Commerce of
 Puerto Rico (Jenaro Baquero)
 1 True
 0 False
- 1.48 Secretary of State of Puerto Rico (Carlos J. Lastra)
 1 True
 0 False
- 1.49 Provisional President of the Dominican
 Republic (Hector Garcia Godoy)
 1 True
 0 False
- 1.50 Governor of Puerto Rico (Roberto Sanchez Vilella)
 1 True
 0 False
- 1.51 _____ Total correct FOR THE EDITOR
- 1.52 During the last month, have you heard or seen in
 the press, radio, television, newspapers, magazines,
 anything that made you change your food buying habits?
 0 No GO TO #1.54
 1 Yes

1.53 Example of what made you change.

DO NOT READ THE ALTERNATIVES

- 1 Announcements of better prices in other stores.
- 2 Articles that considered a substitute product better.
- 3 Articles that advised a different type of purchase.
- 4 Other (specify) _____

1.54 What is your main source of information?

- 0 None
- 1 Newspapers CIRCLE ONLY ONE
- 2 Radio programs
- 3 Advertisement handouts
- 4 Visits to various food stores and supermarkets
- 5 Other people

1.55 What general information magazines do you read and find useful for the buying and preparation of food?

DO NOT READ THE ALTERNATIVES

BOHEMIA	GOOD HOUSEKEEPING
BORICUA	BETTER HOMES & GARDENS
VANIDADES	LADIES' HOME JOURNAL
PARENTS' MAGAZINE	OTHER MAGAZINES (specify)
FAMILY CIRCLE	

_____ Total magazines TO BE COMPLETED BY EDITOR

1.56 Do you participate with your neighbors and other families in activities like bingo, social events, religious groups, etc.?

- 0 No
- 1 Yes

1.57 What two food businesses in the community seem most progressive to you?

1.58 Do you read this column?

SHOW THE HEADLINE OF THE
COLUMN BY JUDITH FRIAS
DE RAMIREZ

- 0 No GO TO #1.60
- 1 Yes

- 1.59 How valuable is it to you? READ THE ALTERNATIVES
- 1 Very valuable
 - 2 Of some use
 - 3 Not useful at all
 - 4 Don't know, have no opinion
- 1.60 Do you read weekly the food advertising in the newspapers?
- 0 No GO TO #1.62
 - 1 Yes
- 1.61 Do these advertisements influence you as to where you buy food?
- 0 No
 - 1 Yes
 - 2 Just some products
- 1.62 Do you take advantage of specials in the food stores?
- 0 No
 - 1 Yes
 - 2 Sometimes
- 1.63 Do your friends consider you a person who likes to try new things?
- 0 No
 - 1 Yes
 - 2 Don't know

PART IV A

Comments of the InterviewerTO FILL IN AFTER THE INTERVIEW

9.51 Interview time

- 1 Less than 60 minutes
- 2 60-74 minutes
- 3 75-89 minutes
- 4 90-104 minutes
- 5 105-119 minutes
- 6 120-150 minutes
- 7 More than 150 minutes

9.52 Do you think the respondent answered honestly?

- 0 Almost never
 - 1 Yes, at times
 - 2 Yes, always
 - Other comments
-
-

9.54 Could the respondent read?

- 0 Not at all
- 1 A little
- 2 Well

OBSERVE FROM THE PAPER
WITH THE ANSWERS

SHEET FOR THE RESPONDENT TO READ

Sources of Food

- | | | |
|------|------------------------|----------------------|
| 2.28 | 1. Pueblo | 5. Other supermarket |
| 2.29 | 2. Co-op supermarkets | 6. Food stores |
| 2.33 | 3. Grand Union | 7. Market place |
| 2.37 | 4. Lucky Seven or Cuin | 8. Other |
-

Methods of Transportation to Stores

- | | |
|------|------------------------------------|
| 3.22 | 1. Walking both ways |
| | 2. Walking one way, return by taxi |
| | 3. By bus or public car |
| | 4. Taxi to and from |
| | 5. Private car (family or friend) |
| | 6. Other (specify) _____ |
-

Reasons for Choosing of Store

- | | |
|------|--------------------------------------|
| 3.24 | 1. Convenient, very close |
| | 2. Products fresh and high quality |
| | 3. Store is clean |
| | 4. Buy on credit |
| | 5. Deliver the groceries to my house |
| | 6. Prices are low |
| | 7. They are helpful and friendly |
| | 8. Great variety of products |
| | 9. Don't know |
-

Total Family Income, 1964

- | | | |
|------|-----------------------|----------------------|
| 9.36 | 1. More than \$500.00 | 5. \$3,500-\$4,999 |
| | 2. \$500 - \$999 | 6. \$5,000-\$9,999 |
| | 3. \$1,000-\$1,999 | 7. \$10,000-\$19,999 |
| | 4. \$2,000-\$3,499 | 8. \$20,000 or more |
-

Attitude Scale

- | | | |
|------|------------------------------|-----------------------|
| 8.35 | 1. Disagree completely | 4. Agree in general |
| | 2. Disagree in general | 5. Complete agreement |
| | 3. Indifferent, or no answer | |

APPENDIX D

PREVIOUS STUDIES THAT UTILIZED MULTIPLE CORRELATION TO PREDICT INNOVATIVENESS

APPENDIX D

PREVIOUS STUDIES THAT UTILIZED MULTIPLE CORRELATION TO PREDICT INNOVATIVENESS

The summary of the studies that follow is an expansion of Table 10-1 that appeared in Diffusion of Innovations. Most of the additional studies were obtained from Michigan State University's Diffusion Documents Center.

Although there are over 1,000 research reports in the Michigan State University's Diffusion Documents Center, only the 23 studies reported here utilized multiple correlation as the statistical technique. Many of the other studies used bivariate analyses of one type or another. In the studies using bivariate analysis, the explained variance was not as great as the explained variance of up to 68.9 per cent accounted for here.

Table D-1.--Studies on the diffusion of innovations which utilized multiple correlation

Investigator	Respondents	Main Independent Variables Utilized	Per cent of Variance in Innovativeness Explained
1. Copp (1956)	Kansas farmers	Gross farm income Professionalism Mental flexibility	50.0
2. Fleigel (1956)	Wisconsin farmers	Familism Information contact Level of living Attitude toward innovations	32.0
3. Copp (1956)	Wisconsin farmers	Gross farm income Membership in farm organizations Discerning ability Level of living	52.0
4. Rogers (1957a)	Iowa farmers	Attitude toward change Social status Communication competence	17.0
5. Armstrong (1959)	Kentucky farmers	Economic position of farmers Degree of urbanization Farm specialization	42.1

Table D-1.--Continued

Investigator	Respondents	Main Independent Variables Utilized	Per Cent of Variance in Innovativeness Explained
6. Hobbs (1960)	Iowa farmers	Attitude toward commercial change agents Cosmopoliteness Brand awareness Knowledge about innovations Management vs. traditional work orientation Gross farm income Farm size	29.7
7. Sizer and Porter (1960)	West Virginia farmers	Knowledge about innovations Social status Education Social participation	25.9
8. Straus (1960a)	Wisconsin farmers	Net worth Education Wife role supportiveness	33.6
9. Rogers and Havens (1961b)	Ohio farmers	Gross farm income Age Belief in agricultural magic Venturesomeness Social status	56.3

Table D-1 .--Continued

Investigator	Respondents	Main Independent Variables Utilized	Per Cent of Variance in Innovativeness Explained
10. Cohen (1962)	New Jersey families	Mobility (cosmopoliteness) Individual values Family income	54.8
11. Rogers and Havens (1962a)	Ohio farmers	Community norms on modernism Farm size Opinion leadership Communication seeking Social status	64.1
12. Deutschmann and Fals Borda (1962b)	Colombian farmers	Mass media exposure Farm size Education Cosmopoliteness Awareness of innovations Use of written accounting records	56.3 68.9 when using 27 variables
13. Neill (1963)	Ohio farmers	Labor efficiency Farm size Information sources Age Management ability Achievement motivation	40.5

Table D-1.--Continued

Investigator	Respondents	Main Independent Variables Utilized	Per Cent of Variance in Innovativeness Explained
14. Havens (1963a)	Colombian farmers	Mass media exposure Level of living Age	47.5
15. Rogers (1964b)	Colombian farmers in five communities	Social status Mass media exposure Trips to urban centers Farm size Empathy Education	From 24.1 to 39.0
16. Ramsey (1959)	New York dairy farmers	Value orientation	9.6
17. Kimball (1960)	Farm families Eaton County, Michigan	6-Personal values	25.0
18. McMillion (1960)	Large farmers in Rangiora and Ellesmere Counties in New Zealand	Size of farm Mass media use index Face to face communication use Urbanization Farm management score	49.9
19. Junghare (1962)	Farmers in Nazpur, India	Extension contact Social participation Socio-economic status Education Economic status Age	23.8

Table D-1.--Continued

Investigator	Respondents	Main Independent Variables Utilized	Per Cent of Variance in Innovativeness Explained
20. Madigan (1962)	Heads of households and other adult males	Education Democratic leadership preference Type of housing	17.1
21. Flinn (1961)	Truck growers in 7 communities in Washington County, Ohio	Community norms Communication behavior Social status Size of operation	56.6
22. Flinn (1963)	Truck growers in Washington County, Ohio	Community norms Communications behavior Social status Size of operation Opinion leadership	65.0
23. Jain (1965)	Farmers in Ontario, Canada n = 275	Value of farm as determined by tax agent Dollar value of farm products sold Income Source competence Socio-economic status Membership in organizations Mass media exposure	50.3

APPENDIX E
FACTOR ANALYSIS

Table E-1

Six Factor Solution of 87 Key Variables
Food Retailer's Survey, Mayaguez and San Juan, Puerto Rico, 1965-66
N=91

Proportions of Variance explained where 1.00 = 100%. Total Variance explained: .4111 = 41.11%.

Communalities (i.e., Proportion of variance explained in each variable by this factor analysis)
(First number in each pair is the factor analysis variable number; these variables
are numbered 1-87).

1	0.3181	2	0.7514	3	0.4647	4	0.5512	5	0.6809	6	0.5415
7	0.6758	8	0.4807	9	0.3831	10	0.4888	11	0.5145	12	0.5133
13	0.0496	14	0.4131	15	0.1175	16	0.4815	17	0.5289	18	0.3048
19	0.5826	20	0.6110	21	0.3811	22	0.2607	23	0.4834	24	0.4219
25	0.4330	26	0.3641	27	0.1632	28	0.6100	29	0.3857	30	0.6073
31	0.3996	32	0.4559	33	0.2595	34	0.2353	35	0.3460	36	0.5738
37	0.4444	38	0.6261	39	0.3832	40	0.3308	41	0.4759	42	0.4715
43	0.3241	44	0.4609	45	0.3050	46	0.4720	47	0.5256	48	0.3844
49	0.3735	50	0.5212	51	0.4979	52	0.3618	53	0.3125	54	0.2343
55	0.5168	56	0.6099	57	0.3871	58	0.5085	59	0.3622	60	0.1902
61	0.0862	62	0.2368	63	0.0020	64	0.6994	65	0.5189	66	0.2538
67	0.5958	68	0.4262	69	0.3112	70	0.4540	71	0.0813	72	0.0526
73	0.4669	74	0.5234	75	0.5655	76	0.2502	77	0.4781	78	0.2382
79	0.7313	80	0.5119	81	0.2085	82	0.6491	83	0.1769	84	0.3419
85	0.4412	86	0.2695	87	0.2665						

TABLE E-1.--Continued

Factor Analysis Variable Number	Modern Firm 1	Modern Business- man 2	Older Firm with Older Manager 3	Transi- tional Manager 4	Tradi- tional Manager 5	Modern Independent Businessman 6
1	-0.0552	-0.1217	0.0414	0.0086	-0.4432*	0.3193
2	0.1408	0.0640	0.4859	0.2209	-0.2107	0.6311*
3	-0.1582	-0.0021	0.1317	0.2622	-0.0357	0.5936*
4	0.3404	0.4625*	-0.0139	-0.0227	-0.0951	0.4601
5	0.1328	0.5330*	0.3429	-0.1909	-0.1429	0.4524
6	0.2852	0.5001*	0.4097	0.0295	-0.0891	0.1827
7	0.1981	0.5555*	0.4437	0.1427	-0.2129	0.2558
8	0.0808	0.0834	-0.1464	-0.0191	0.1524	0.6498*
9	-0.1532	0.0795	0.1298	0.0129	-0.1382	0.5632*
10	0.1665	0.5206*	0.1678	0.3362	-0.1922	0.1094
11	-0.4948*	-0.2401	0.0488	-0.1461	0.2359	-0.3642
12	-0.0382	-0.0668	0.6363*	-0.2256	0.1923	0.1215
13	0.1734*	0.0400	-0.0079	-0.0760	-0.0572	-0.0943
14	0.6134*	0.1025	-0.0158	0.1419	-0.0767	-0.0014
15	0.3098*	-0.0512	0.0599	-0.0112	0.1182	0.0339
16	-0.0499	0.0238	-0.6838*	0.0425	-0.0124	-0.0946
17	0.6975*	0.1665	0.0202	-0.0570	0.0763	-0.0018
18	0.5426*	0.0917	0.0007	-0.0237	0.0368	-0.0059
19	0.4930*	-0.0231	-0.1539	-0.1461	-0.4339	0.3242

TABLE E-1.--Continued

20	0.7499*	-0.0003	0.2062	-0.0712	-0.0234	-0.0228
21	0.4698*	0.0854	0.0971	0.0176	-0.1281	0.3562
22	0.3797*	-0.0203	-0.0487	0.2256	0.1368	0.2102
23	0.6439*	0.1304	0.1382	0.0923	-0.1548	-0.0164
24	0.6388*	-0.0333	0.0457	-0.0720	0.0578	0.0466
25	0.6033*	-0.0137	-0.0966	0.0030	0.1337	0.2039
26	0.5483*	0.0961	-0.0728	-0.0939	-0.1388	-0.1444
27	0.3586*	-0.1069	0.0270	0.0966	0.0489	0.1033
28	-0.0646	-0.6585*	-0.2908	0.1379	0.2396	-0.1059
29	-0.2451	-0.1430	0.3228*	0.2759	-0.3035	-0.1810
30	-0.1137	-0.6775*	0.2246	0.1264	-0.2553	-0.0609
31	-0.0626	-0.2406	0.1071	0.1017	0.4122*	-0.3822
32	-0.1666	0.0208	0.0342	-0.2611	0.5954*	-0.0616
33	-0.1403	-0.2769	-0.0513	0.0577	0.3453*	0.1948
34	-0.0289	-0.0407	-0.4227*	-0.1168	0.1480	-0.1361
35	-0.0085	-0.1640	0.0613	0.0068	0.5604*	-0.0345
36	-0.0975	0.5746*	-0.0572	0.0871	-0.4588	-0.1132
37	-0.0300	0.0600	-0.4528*	0.2926	0.2350	-0.3377
38	0.0056	-0.6818*	0.1967	0.1259	-0.1980	-0.2596
39	0.0015	-0.4015	0.4174*	-0.1239	0.1266	-0.1281
40	-0.1034	-0.2553	-0.3923*	-0.1128	0.2964	0.0211
41	0.0786	-0.0107	0.2958	-0.0558	0.6145*	-0.0373

TABLE E-1.--Continued

42	0.0946	-0.2177	0.6074*	0.0593	0.1657	-0.1237
43	0.0382	-0.5016*	-0.0348	0.0604	0.1965	0.1659
44	-0.0135	-0.6177*	0.0400	-0.2105	-0.0943	-0.1560
45	-0.0863	-0.4930*	-0.1186	0.1199	0.1422	0.0759
46	0.2873	-0.0044	0.0126	-0.5142*	-0.1074	-0.3365
47	-0.1799	0.1211	-0.4334*	0.0941	0.4022	0.3466
48	0.2165	-0.3186	0.1307	-0.3397*	0.2926	-0.1334
49	0.1104	0.2185	-0.3885*	0.3337	-0.2024	-0.1015
50	-0.1682	0.2300	-0.0613	-0.2673	-0.5713*	-0.1960
51	-0.0144	0.4551*	0.0609	-0.3964	-0.3470	0.0966
52	0.1882	0.2337	0.1847	-0.0142	-0.4873*	-0.0010
53	0.2155	0.2745	-0.1595	-0.1963	-0.1177	0.3359*
54	0.0798	-0.1533	-0.4425*	0.0355	0.0826	-0.0242
55	-0.2173	-0.1594	0.0377	0.6560*	0.0109	0.1105
56	0.0440	0.0666	0.2471	-0.7163*	-0.1710	0.0118
57	-0.2095	-0.4261*	0.3206	0.0493	0.2321	-0.0504
58	0.2102	0.4509*	0.1851	0.1043	-0.4325	0.1696
59	0.4088*	0.2996	0.0100	0.0405	0.1429	0.2884
60	0.0137	0.0331	0.0675	-0.3759*	-0.1509	0.1423
61	-0.2681*	-0.0373	0.0789	0.0429	-0.0173	0.0679
62	-0.0329	0.2590*	-0.1835	-0.2563	-0.2479	0.0884
63	0.0046	0.0184	0.0334*	-0.0225	0.0051	-0.0050
64	0.8162*	0.1466	-0.0465	-0.0356	-0.0130	-0.0904

TABLE E-1.--Continued

65	0.1514	0.3651	0.3656	0.3798*	-0.0964	0.2748
66	0.1297	-0.3250*	-0.2590	0.1541	-0.0789	0.1851
67	-0.1952	-0.2285	-0.0762	-0.6988*	-0.0976	0.0370
68	-0.1534	0.0794	-0.1274	0.1704	0.2820	-0.5211*
69	0.2849	0.1967	0.1504	0.1547	0.2953*	0.2351
70	-0.2715	0.0470	0.1521	-0.4890*	0.0777	0.3314
71	0.1618*	-0.0171	-0.1372	-0.0436	0.1445	-0.1150
72	0.0369	-0.1029	-0.0858	-0.1121	-0.1411*	-0.0281
73	-0.0547	0.0708	0.0781	-0.5050*	0.1848	0.4038
74	0.6402*	-0.2667	0.1250	0.1183	-0.0099	0.1123
75	0.3410	0.4347	0.4840*	0.0202	0.0290	0.1572
76	-0.0100	-0.0779	-0.0421	0.0711	-0.1343	-0.4680*
77	-0.1476	-0.5916	0.0030	-0.1838	-0.0442	0.5170*
78	0.1243	0.5574*	0.0996	0.1049	0.2104	-0.1690
79	0.7863*	0.1861	0.0922	0.0556	-0.2402	-0.0954
80	0.6565*	0.1770	0.1302	0.0271	-0.1582	-0.0832
81	-0.0052	0.1286	0.4068*	-0.1397	0.0801	-0.0222
82	0.7469*	0.1462	0.1370	0.0562	-0.2128	-0.0505
83	0.1191	0.1029	0.1496	-0.0537	-0.3533*	-0.0451
84	0.0045	0.0247	-0.1228	0.5453*	-0.1678	0.0255
85	-0.5030*	0.1741	-0.0225	0.1028	0.3731	-0.0875
86	0.4504*	-0.0136	-0.1507	-0.0723	-0.1787	-0.0809
87	0.2054	-0.2142	0.1505	-0.0651	-0.3402*	0.1893

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