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On Some Issues about Microeconomic Foundations of Tourism

Ravindra R. Ranade

Ⅰ. Introduction

Tourism is an important part of the modern economies. In some cases even more so than the others. It means different things to consumers and producers. For a consumer it is about having a budget for fun, making decisions on transport, stay, activities, food, among other things. For a producers as a group, it is about logistics, setting airfares and schedules, hotel management, marketing services and so on. Tourism usually is not included as a separate sector in national accounts for most economies because many sectors contribute to the activities of tourists.

In recent times, Tourism has come up as an important part of curricula of Economics departments. It was obvious that the Economics underlying the industry is understood in detail. Two important contributions towards that are Mak (2004) and Sinclair and Stabler (1997). Both address some basic nomenclature requirements and making the students to become aware of the Economics concepts that are required to understand tourism. Both the books start with touching the theory but their interest lies elsewhere.

Microeconomics over the years have developed its own methodology and technical concepts, the list of good publications is rather long and most have their favorite ones. In all cases the texts start with concepts of goods, prices, budgets, utility and profit maximization and develop the part they want to emphasize later. It needs to be noted that the Micro theory cannot be applied directly to the

Tourism Industry because of the definition of goods etc. The purpose of this paper is to provide the Microeconomic foundations for the analysis of tourism. The proofs of the assertions should be easy for Micro theorists and thus are omitted (but available with the writer if needed). As the section headings would indicate, we will discuss the necessary adjustments needed in Micro theory to suit the economics of tourism.

Ⅱ. The Budget

Microeconomics usually takes the disposable income or budget as given although we learn in some models of equilibrium where it gets determined as a result of suppliers' prices etc. While there is no problem with continuing this assumption, it is important to look at the determination of the budget spent on fun in general and tourism in particular. Most consumers with limited resources would first decide on that budget for fun and then decide how to spend it. This is more so because there is nothing called a tourism good that has market prices well defined. Food, to use the generic term for goods that are important for life, clothing as a proxy for standard of living is the next important one and then we have some money left aside for fun. It is important to redo some theory to have an insight into this. This is obviously even more important for the Industry service providers for their marketing strategies.

The nature of preferences for the consumer is going to dictate the conclusions we derive. Without claiming to be a comprehensive analysis we start with two types of consumers for illustrative purposes. The first type is the one which regards food, clothing and tourism as necessary things in the sense he must consume all 3 to get a positive satisfaction. The second type regards food as a must－life can go on without other things, clothing－as a statement of living standard comes next, and tourism is an add on in life. The first case is discussed well in textbooks in the

context of preferences that are smooth and the goods are substitutes－less or more important but are essential to get a positive satisfaction. The simplest of this is the assumption of Cobb-Douglas utility functions. But since tourism is not a good with well-defined price we will use the form with the x as food, y as clothing and z as the money spent on tourism.

$$U(x,\ y,\ z)=x^{a}y^{b}z$$

The two parameters a and b tell us how the two goods are important as compared to unity－the index of importance for tourism.

On the other hand, we have people who can live without tourism or even a standard of living but will do those things only if the price is right. We will ignore alcoholics, rabid smokers, those stranded in deserts without water etc who may have Lexicographic preferences with no functional utilities ! The functional form

$$U(x,\ y,\ z)=x^{a}+xy^{b}z$$

is one such known to good graduate students of Mathematical Economics which allows x to be a very important good, the consumer can survive without the other 2 but is not averse to consuming them.

The first types are typical consumers with various likings depending on the values of a, and b as compared to unity. There is a constant elasticity of substitution between the two goods and the budget spent on fun－a proxy for tourism. This is a typical Cobb-Douglas situation. The second type are the difficult consumers, ready to forgo y as well as tourism if the relative prices are steep. This kind of function leads to possible corner solutions.

It is easy to derive demand functions for the first case. With the Cobb-Douglas utility function given, the money income as m and the prices being p and q respectively for each unit of x and y, the demand functions are

$$x=\frac{am}{(a+b+1)p},\ y=\frac{bm}{(a+b+1)q},\ \text{and}\ z=\frac{m}{(a+b+1)}$$

This is a rudimentary theory about how and what the normal consumers－those who consider tourism as a required activity－will spend on tourism. The higher the money income and smaller the values of a, and b, more is the allocation for tourism.

The second case is quite complex but not intractable. For illustrative purposes the demand functions are as follows.

$$x=\left(\frac{4m^2}{3}-\frac{8qm}{3p}\right)\sqrt{\left(\frac{4-8q}{pm}\right)^2-12},\ y=\frac{m}{2q}-px,\ \text{and}\ z=m-(px+qy)$$

It is important to note that unless the price p is quite high the consumer has no intentions to spend on y and certainly not on tourism. Resulting in x being m/p and y, z both being 0, a corner solution. This is typically a case of older generation which likes to consume what they like to eat and stay at home and not venture on to things like tourism. It takes a remarkably persuasive travel agent to persuade them to change their preferences. To illustrate the point further, let us consider the case of the important good x and the expenditure on tourism given by z, ignoring the good y. For the simple form of

$U(x,\ z)=x^2+xz$ with price of the good x given by p, the demand functions are

$$x=\frac{m}{2(p-1)},\ z=\frac{2(p-1)m}{(2-p)}$$

when p is greater than 2, otherwise we get the corner solution with x given by $\frac{m}{p}$ and the expenditure on tourism is zero. This illustrates how the marketing efforts need to be directed for well off consumers who would rather stay home and consume their favorite food. Great efforts are needed to influence their tastes, probably pushing tourism as just another way of consuming their important good.

Microeconomics treats the importance of food, given by a, as a constant. But this is not the case for the providers of tourism services. They may not be interested in a specific consumer as a target but the community of consumers is important. As incomes rise, the proportional expenditure is expected to fall－very well known to Economists as Engel's law. In the case of Cobb-Douglas utilities or even out eccentric consumer of the second type, this means that a and b are not constants nut parameters as functions f(m) and g(m) respectively of m, possibly sloping downwards. The precise nature of this function is difficult to fathom at the theory level. Obviously some statistical estimation is called for. The expenditure on the tourism activity is then given by

z(m) as $\frac{m}{(f(m)+g(m)+1)}$. The shape of Engel's curve and other related things can be explained by this contraption.

It is important that Micro consumer theory was never formulated as an explanation of long term behavior. The overlapping generation model discusses the dynamics but it is mostly spanning over 2 or 3 periods. Consequently it is doubtful that it can be used for analysis of time series data. It is, however, amenable to cross sectional purposes. Tourism service providers are not interested in the dynamic behavior of a single household. They want to look at all the people with a certain range of incomes would be doing. Towards that purpose, the theory can be tweaked a little and we can look at the various incomes in the targeted market. A simple assumption－but a reasonable one－is to see the income distribution as a triangular one with minimum, modal and maximum incomes defined. The relevant demand functions can be used across the cross section of consumers to draw the conclusions and work towards the right marketing strategies as well as organizing the logistics. Simple statistical tools can give reasonable insights into the expected participation of consumers in the tourism industry.

Ⅲ. Nature of Tourism Services

Once the consumer decided on the allocation for tourism he faces the decisions on how to maximize the happiness from various activities that the suppliers provide. This is usually done with the allocation z spent on various services－say n in number with, $z = eZ$ where e is the row n-vector with all 1s and Z is the nonnegative column n-vector with $z_i s$ as the arguments. It is clear that Z is less than an upper limit vector $\overline{Z}$ as the consumer has limits on how much would he like to spend in hotel, travel, activities etc. This is essentially a linear programming problem with a maximization of options available within the limit $\overline{Z}$. Not much high theory is necessary to model this simple behavior. The main point to note, however is that these choices are not continuous variables but simple discrete issues. The number of days to be spent in hotels or the number of flights taken will necessarily be a small integer. All the providers of services do is to provide options for various levels of $\overline{Z}$s. All they need is a simple collection of information regarding the target consumers. It is reasonable that they cater to the consumer targets that can be divided into Very Rich, Rich, Middle Class and Backpackers. As well as looking at the number of tourists planning the trip together. That is to say Single, Couples, 2 or 3 women travelling together or a family with a couple of children. This part of the logistics of Tourism is rather well developed and does not require high Microeconomics.

It is important to see the Tourism industry as having bi-products in the sense of joint production. Influx of tourists generates costly damage to the nature and Ecological Tourism as well as Environmental Economics become important. The Micro theory provides well developed aspects of externalities as well as returns to scale arguments. This, however, is important only to the extent the political power and the providers of services care－or dare to address. Taxes and subsidies are very common in the tourism industry. New York and Los Angeles hotels charge

extra because of the taxation but rural tourism in small countries in Africa require subsidies to break even. Much depends on if the local economy can forgo the benefits to make sure that the environment remains beautiful. Tiger reserves in India are hated by the locals as they claim that they are having difficulty in surviving and the government wants to have tigers !

Ⅳ. Pitfalls

In conclusion, we will comment on the possible pitfalls instead of repeating the arguments of the text. This is after looking at the two references, considered to be important on the subject. Mak (2004) ably looks at the data and issues from the perspective of tourism industry of Hawaii. The age-wise and sex-wise propensity of travel by the Japanese tourists throws up interesting observations and can easily be explained by the Micro analysis of consumer spending discussed here. It is very important, however, that we will be looking at not only shifts in income but tastes as well when we look across the different consumers. In the long term time series analysis, it might be easy to postulate but the assumptions for cross-sectional consumer analysis will need to be justified. The nature of tourism goods for a consumer and the producer are different as is pointed out in that work but it will be difficult to use General Equilibrium tools of market demand and supply in this case directly. In the context of environmental issues, the cost-benefit analysis will require opportunity costs doctrines and the standard Micro tools do not normally take that into account directly. Much care is needed to use the tools for tourism industry.

While it is tempting to use graphs of Indifference Curves or Income and Price Effects, it is important to note that axioms of Monotonicity and Rationality are not violated and also that the tourism services and goods are not continuous variables and the discreteness requires special attention. This pitfall needs to be avoided but

does not seem to be always done as such, an example is Sinclair and Tabler (1997) with the prongs of Indifference Curves pointing towards north-east.

It is easy to look at the Philosophy, but Micro modelling of consumer and supplier behavior will require rather elaborate treatment than that is presented in the text-books on the subject.

References

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