Logistics Managers' Stated Preferences for Supply Management Attributes for the Case of Inns in Brazil

RICARDO SILVEIRA MARTINS
Federal University of Minas Gerais (UFMG),
School of Business Administration, 6627,
Antônio Carlos Av. – Zip Code,
31270-901 - Belo Horizonte – MG,
Brazil.
E-mail: martins@cepead.face.ufmg.br

DÉBORA SILVA LOBO
State University of Western Paraná (Unioeste),
P.O. Box 520 Zip Code 85.900-970 Toledo
– PR,
Brazil.
E-mail: dslobo@uol.com.br

LETÍCIA LABEGALINI
Federal University of Minas Gerais (UFMG),
Interdisciplinary Center for Logistics Research
and Extension (NIPE-LOG/UFMG), 6627,
Antônio Carlos Av. – Zip Code 31270-901
Belo Horizonte – MG,
Brazil.
E-mail: lelabega@hotmail.com

ALEXANDRE DE PADUA CARRIERI
Federal University of Minas Gerais (UFMG),
School of Business Administration, 6627,
Antônio Carlos Av. – Zip Code 31270-901
Belo Horizonte – MG,
Brazil.
E-mail: alexandre@cepead.face.ufmg.br

ABSTRACT

The general aim of this research was to identify the needs and expectations of the inns´ managers about service suppliers involved with the tourist industry along "Royal Highway" (in the State of Minas Gerais, Brazil), as regards the most appropriate strategy for supply logistics for inns, the typical tourism establishment in the region. The features investigated were: Speed of Service, Number of Suppliers, Size of Lots, Supply Operations and Method of Ordering. The Multivariate Stated Preference Technique was used for the statistical treatment of the responses. The results indicate that the respondents' preferred supply scenario has the following characteristics: supplies should be furnished in a responsive manner, within 24 hours, by one or a limited number of suppliers, in small lots delivered to the companies and ordered by telephone. The article concludes that, in order for a strategy to have strong impact on this economic activity in the regions where this research was carried out, it should consider a policy of reducing the supplier base.

Keywords: Tourism management, tourism marketing, supply logistics, stated preference.

Ricardo Silveira Martins is Professor at the School of Business Administration/Federal University of Minas Gerais (UFMG), Brazil. He is Economist and holds a PhD in Applied Economics (University of São Paulo, Brazil). He acts at the Center for Research and Post-Graduation in Business Management (CEPEAD), areas: Logistics and Supply Chain Management. Researcher at the Interdisciplinary Center for Logistics Research and Extension (NIPE-LOG/UFMG) and Global Manufacturing Research Group (GMRG) membership. He has numerous publications about logistics and supply chain. His fields of interests include supply chain management and logistics.

Débora Silva Lobo is Professor at the School of Regional Development, State University of Western Paraná, Brazil. She is Bachelor in Mathematics and holds a PhD in Production Engineering at the Federal University of Santa Catarina-Brazil. She acts as a researcher at the Interdisciplinary Center for Logistics Research and Extension (NIPE-LOG/UFMG). She has numerous publications about optimization models and logistics. Her fields of interests include optimization models and multivariate statistics..

Letícia Labegalini isa researcher at the Interdisciplinary Center for Logistics Research and Extension (NIPE-LOG/UFMG), Brazil. Her fields of interests include value analysis in logistics.

Alexandre de Padua Carrieri is Professor at the School of Business Administration/Federal University of Minas Gerais (UFMG), Brazil. He holds a a Masters degree in Business Administration at the Federal University of Lavras, Brazil, and PhD in in Business Administration at the Federal University of Minas Gerais, Brazil. He acts at the Center for Research and Post-Graduation in Business Management (CEPEAD). His fields of interests include organizational studies.

INTRODUCTION

In general, according to Quan and Wang (2004), there are two approaches to the study of tourist experiences: the social science approach and the marketing/management approach. The first one is characterized as the tourist experience and is understood to be something that is in sharp contrast or directly opposite to the daily experience. This approach highlights that tourists like to experience something different from their daily life (Mossberg 2007). The other perspective, the marketing/management literature, shows that tourists are instead recognized as consumers because they are involved in different commercial exchange relationships. These relationships (transactions) cover all types of services, no matters if the tourist gets a peak experience or any supporting services (Mossberg 2007). The marketing managers' main task is to design a product-service combination that provides real value to targeted consumers, motivates purchase, and fulfils genuine consumer needs (Kotler, Bowen and Makens 1999). In tourism management, in a restaurant the product consists of the combination of food and beverage, which combines with intangible aspects such as the room, the meeting, and the atmosphere has to be considered when assessing a meal experience (Hansen, Jensen and Gustafsson 2005). Also, Mossberg (2007) highlights that local product is a type of souvenirs, such as images on postcards, piece of a rock, a natural item like coral, symbolic shorthand, and inscribed t-shirts.

Logistics is seen mainly as these supporting services. The combined use of its primary activities (transport, stocking, information and installations) along with its subsystems (supply, production and distribution) makes it possible to develop an entrepreneurial strategy that is capable of generating sustainable competitive advantages for service companies. The Supply subsystem, which is relevant to this research, is responsible for the activities related to obtaining materials (finished products, parts, components and raw materials) and engaging the services of external suppliers. It includes transport, stockholding, processing of orders, purchasing, packing, warehousing, materials handling and managing information relating to these matters. This subsystem is responsible for developing resource planning and putting it into effect, locating sources of supply, negotiation, dealing with orders, reception and inspection, guaranteeing the quality and quantity of supplies.

In the case of tourist-related services, the strategic use of logistics makes it possible to obtain a competitive differential in both costs and service quality. Such gains are made possible by reductions in stock levels and by the way in which materials are obtained (namely, foodstuff, bed and table linen and bathroom supplies, among other items); by improvements in the level of service offered, to the extent that this allows an increase in the availability and variety of such items. This, in turn, results in the real possibility of offering a menu with a complete range of items; in the minimization of losses in revenue as a result of low occupancy rates due to lack of towels and sheets, and also avoids customer dissatisfaction because of temporary prohibitions regarding the use of the services offered because of lack of supplies and equipment, such as clean-

ing materials for swimming pools. This is known as the difference between selling more value to the customer instead of selling a "price".

This study is applied to Royal Highway. This tourist route has a clear connection with the history of Brazil and, more specifically, with that of the State of Minas Gerais. In the 17th and 18th centuries three routes were opened up in Brazilian territory, linking the (gemstone) mining centres (for precious stones) in Minas Gerais in the towns of Ouro Preto and Diamantina to the ports for the export of these products – Rio de Janeiro and Paraty – and also São Paulo. The visitors can go on guided tours, visit churches and museums, listen to stories of facts of history of Brazil that had been developed in the region and the local cuisine.

These official access routes, which belonged to the Portuguese Crown, were given the name of the "Royal Highway" and were the only authorized way of reaching the inland areas of Brazil where there were deposits of precious stones. The roads mentioned above were given the names of "The Old Road", "The New Road" and "the Diamond Road" and came to be known as the "Royal Highway from 1718 onwards, when it was decreed that all goods transported should undergo inspection at the Checkpoints set up all along the roads. In this way, the roads that made up the Royal Highway were also an important driving force behind the intensive process of urbanisation that took place in the Centre-South Region of Brazil, and which was responsible for the appearance of hundreds of hamlets, villages and townships (Santos 2001).

From 2000 onwards, there began a process of transforming the Royal Highway of the 17th and 18th centuries into an important tourist product, which subsequently resulted in it being recognised as a national historical heritage. There are more than 1,400 kms of roads laid out around a central line that corresponds to the Royal Roads of that period. However, it should be pointed out that the highways which were demarcated in recent times do not correspond exactly to the original roads, since they extended beyond the (the limits of) the modern ones, and therefore also included a number of secondary roads.

These historic highways have inspired a series of projects to recover this national cultural heritage and use it commercially, principally by means of tourism in the region. This project, called The Royal Highway Institute (RHI), was created by the Federation of Industries of the State of Minas Gerais in October 1999 with the aim of supporting and promoting the Royal Highway tourist product. The RHI works in partnership with the State Secretariat for Tourism of the State of Minas Gerais (SETUR/MG), the municipal authorities of the towns and cities located along the route of the Royal Highway (RH) and with the Federal Ministry of Tourism. Its main aim is to organize the development of tourism by giving assistance to the towns and cities in the region by setting up specific projects and holding lectures and seminars on the Royal Highway in order to make the project known to all these communities.

In regard to the projects carried out by the Royal Highway Institute, its funds come from a number of different backers and the State Secretariat and Federal Ministry of Tourism support some of them. The main partners are the Min-

istry of Tourism, SETUR-MG, The Bank of Brazil, Oi Telephone Company, Coca-Cola and Mastercard. The product developed by the Royal Highway Institute (RHI) seeks to recreate the historic identity of the Royal Highway as it was in the 17th and 18th centuries but in a single continuous stretch that will bring together all the secondary roads that joining the three main roads that made up the original Royal Highway. The area belonging to the Royal Highway involves all the cities around it, therefore the project is important because it attempts to recreate the history of Brazil within a development area that is capable of integrating a variety of national heritage treasures, especially in the State of Minas Gerais where the largest part of the route taken by road is to be found.

The general aim of this research was to identify the needs and expectations of the inns´ managers about service suppliers involved with the tourist industry along "Royal Highway" (in the State of Minas Gerais, Brazil), as regards the most appropriate strategy for supply logistics for inns, the typical tourism establishment in the region. According to Garrigós-Simón, Palacios-Marqués and Narangajavana (2008), although researchers from a number of disciplines have examined the managers' work, the attention received in the social science literature has been very limited, especially in the tourism literature. There is a lack of research into managerial perception or knowledge, and about mechanisms to improve its accuracy.

ATTRIBUTES OF TOURISM ESTABLISHMENTS: STATED PREFERENCE TECHNIQUE

The explanations furnished by market research for agents` preferences when they try to maximise satisfaction, whether it be individuals or organisations, are based on certain concepts of human behaviour. This behaviour is also vital for making business decisions when trying to maximise the use of resources used in an organisational system. The statistical treatment for finding out what these preferences are can be carried out by means of multivariate techniques and the one used in this research was Stated Preference (Kroes and Sheldon 1988). According to Ortúzar (1998), Stated Preference(s) consists of a set of methodologies that is based on the sated opinion of individuals about hypothetical situations that are presented to them. Stated Preference uses planned experiment techniques to produce alternative hypotheses that are presented to respondents. By analysing situations that do not necessarily exist, it therefore allows identification of the features that the users of the service under investigation consider being relevant.

The Stated Preference Technique was originally used in the 1970s for management problems encountered in the marketing area. According to Louviere, Hemsher and Swait (2000), this technique is widely used in both industrial and commercial sectors to test the acceptance of new products or services or to make changes to existing ones, to break down data on markets obtained by The Revealed Preference Technique, and to evaluate the subjective fac-

tors that influence decision-making. By means of this technique it is possible to identify the relative importance awarded to each feature. This diagnosis makes it possible to organise the service so that it corresponds most closely to the agents' wishes.

The most obvious problem in using this technique is whether the subject's responses to hypothetical situations will be the same in real ones. In the 1980s, this relationship between hypothesis and reality improved considerably and, recently, the results of experiments in the use of the techniques of stated and revealed preference have shown that they demonstrate satisfactory correspondence to reality, due mainly to better design of the data collection process and greater rigour in treating the data. In mathematical terms, the Stated Preference Technique can be defined as the family of techniques that estimate a utility function on the basis of subjects' individual responses (Kroes and Sheldon 1988). The utility function is based on the Paretian premise that it is possible to improve one feature by worsening another and maintain the same level of utility. This function can be represented in general terms as follows:

$$FU = \beta_1.X_1 + \beta_2.X_2 + \beta_3.X_3 + \beta_4.X_4 + \beta_5.X_5 \tag{1}$$

where:
FU – is the measure of Utility.
X_1 , X_2 , ... ,X_n – are the features of the product or service.
β_1 , β_2 , ... , β_n – are the coefficients of the model.

The ? coefficients of this model can be use for various purposes, such as, for example, determining the relative weighting of each feature included in the model and for specifying the probability of choosing each alternative.

In logistics, this methodology has been used a great deal (Ben-Akiva and Lerman 1985; Matear and Gray 1993; Bolis and Maggi 1998; Beuthe, Bouffioux and De Mayer 2003; Danielis, Marcucci and Rotaris 2005). Bolis and Maggi (1998) estimated the likelihood that subjects shipping goods would pay for different qualities of service, considering that the market offers services that range from simple transport to integrated logistics.

METHODOLOGY

This paper provides an account of a piece of exploratory empirical research that sought to investigate evidence from the hotel and restaurant establishments located near certain stretches of the Royal Highway as regards the most appropriate ways to supply foodstuff, bed and table linen and bathroom supplies. According to Malhotra (2001), exploratory research is recommended when knowledge of the phenomena under investigation is still insufficient or even inadequate. The empirical nature of the research is justified by the fact that it was based on a survey of field data resulting from the use of sated pref-

erence cards presented to businessmen and managers of the above mentioned establishments.

The units of analysis used in the research were the service companies providing inn accommodation in the regions of the towns of Ouro Preto and Tiradentes, which are two of the areas along the "Royal Highway where tourism is most consolidated. The units of observation were the owners and managers involved in the companies' logistic planning and decision-making process. Data collection took place by means of a non-probabilistic sampling process, based on a typical unit, which, in practice, means finding an establishment where there is a consistent volume of demand for its services, that is, it is not seasonal, and which has a minimum of 10 apartments. The results were statistically analysed using the algorithm developed by Souza (1999).

Table 1. The Selected Features and Associated Levels and Numerical Codes

Feature	Level	Numerical Code
Delivery Time	*Up to 24 hours:* order cycles or lead time (period between the acknowledgement of the order e the arrival of the supplies at the establishment) shorter cycles mean faster reaction times in the face of/response to unexpected events created by demand.	1
	More than 24 hours: longer order cycles ou lead time are undesirable for the businessperson, since they force him to make plans which is not necessarily backed up by demand, which is seasonal, and this sometimes causes build-up of stocks.	0
Suppliers	*One or few:* one or a few suppliers offer a varied product mix that markedly reduces the need for contact in order to obtain the necessary supplies.	1
	Various: various suppliers have to be contacted to place orders, for example, 1 for beef, another for pork, another for trout an yet another for cleaning materials ….	0
Lot	*Small:* a small lot refers to quantities that are sufficient to satisfy the needs of the establishments for short periods. This is an important alternative for achieving the long-dreamt of minimization of costs.	1
	Large: since purchases are made individually by each establishment, it is frequently the case that the minimum size of lot a supplier can furnish is too large for the needs of the customers and causes financial costs because of stock build-ups and high opportunity costs in relation to the resources invested/used as well as the risk of the products being spoiled and their quality deteriorating.	0
Supply Operations	*Delivery:* this method implies a convenience for managers to the extent that they do not need to make any effort to pick up necessary supplies or raw materials.	1
	FOB: in this service, the establishments are the ones responsible for the order, from the time that it leaves the supplier until its arrival at destination (pick-up at the supplier).	0
Order	*Door to door (before sales):* Sales personnel visit establishments and take orders.	1
	Telephone: orders are made by telephone	0

Ricardo Silveira Martins - Débora Silva Lobo - Letícia Labegalini - Alexandre De Padua Carrieri

The sample consisted of the establishments in the regions of the cities of Ouro Preto and Tiradentes, chosen according the extent to which they had consolidated their activities in the tourist business and the degree to which they indentified with the Royal Highway project. There were a total of 130 replies; 70 from the Tiradentes region and 60 from the region of Ouro Preto. Before collecting data, the researchers carried out a preliminary study on a part of the experimental sample and defined the features of the service that were studied and analysed in the experiment as well as their levels. This research took place in May 2007 with visits to the locations of the establishments. The features selected and the various levels are shown in Table 1.

During the planning stage of the experiment, it is necessary to decide on the procedure for presenting the alternatives to the subjects. One method that is widely used, due to its ease of use and relatively low cost, is to present the alternatives in the form of cards containing the features and levels in the form of self-explanatory pictures. These cards must be produced with great care, since they must present information in such a way that it is clear, accurate and easy for the interviewees to understand. The cards with the pictures showing each of the features that were used are shown in Figure 1.

The features were placed in order to minimize the possibility that, after identifying the most important feature (identified in the field research) the subjects would not evaluate the subsequent ones in the correct manner, since this could cause the subject to make mistakes and distort the results. Thus, the most important/ feature was placed in the centre, the second and fourth most important on the left and the third and fifth most important on the right.

DELIVERY TIME	SUPPLIERS	LOTS	SUPPLY OPERATIONS	ORDER
Up to 24 hrs.	One or more	Small	Delivery	Visiting

DELIVERY TIME	SUPPLIERS	LOTS	SUPPLY OPERATIONS	ORDER
More than 24 hrs.	Various	Large	FOB	Telephone

Figure 1. Illustration of the Features Used in the Field Research

The complexity of the experiment increases in accordance with the number of features and their levels. Jones (1991) suggests that no more than three levels should be used because this increases the complexity of the experiment and impairs the subject's judgement. Thus, Bateman (2002) points out that when the number of alternatives is liable to impair the subjects' analysis, use of the fractionalized factorial is recommended in order reduce the number of alternatives presented to the interviewee. The arrangement of the available alternatives, taking their features and levels into account, was decided in accordance with Bayes theorem – or Probability Tree – which, according to Meyer (1995) is given as:

$$P(B_i|A) = \frac{P(A|B_i)P(B_i)}{\sum_{j=1}^{k} P(A|B_j)P(Bj)} \qquad i = 1,2,...,k \qquad (2)$$

In this way, 32 possible alternatives, representing the complete factorial of existing possibilities, were obtained for the Stated Preference Technique. However, the alternatives were presented in incomplete blocks, in order to make it easier for the subjects to carry out their analysis.

When carrying out the interviews, the subjects should be made fully aware of the procedure to be followed with the set of cards presented to them. There are three measures of preference used to obtain information about the subjects' options: - choice – where the interviewee chooses the best alternative; rating – where the subject gives marks to the alternatives; and ranking – where the interviewee organises the alternatives in order of preference. We opted for ranking in this research. Since the interviews take a relatively long time, it is recommended that they be carried out in loco. However, it is possible to consider a combination of procedures where the material is mailed and the interview carried by telephone (Louviere, Hensher and Swait 2000) or via the Internet. In the case of this research, the interviews were held with individuals face to face and in loco.

The calibration of the coefficients of a utility function is carried out at the stage of data analysis. The utility function is a mathematical measure of user preferences (satisfaction). The user is satisfied when the service has features he/she considers to be important or are useful to him/her. In order to analyse the data provided by the Stated Preference method, the most commonly used methods are: - the Multiple Regression Analysis Method and the Multinomial Logit Model. According to Jones (1991), the Multinomial Logit Model is more flexible and can deal with any type of preference, including choice, rating and ranking, and was chosen for this reason. If it is given that the random term of the utility function (1) is governed by a Gumbel type distribution, then we have the Logit Multinomial model (Ben-Akiva and Lerman 1985) which can be expressed as:

$$P(B_i|A) = \frac{P(A|B_i)P(B_i)}{\sum_{j=1}^{k} P(A|B_j)P(Bj)} \qquad i = 1,2,...,k \qquad (3)$$

Where is the probability of alternative I being chosen by the person n in the set of possibilities C.

DISCUSSION OF FINDINGS

The results of the statistical results are presented in Tables 2-4. This surprising result shows that the features are placed in the following order of importance: lot, supply operations, delivery time, number of suppliers and ordering method. It is further noted that "lot" constitutes 30.8% of the total number of features and that the supply operations feature constitutes 24.4% of this total. Therefore, these two features are the important ones for Supply Logistics as regards sources of supply. In general terms, the results indicate the following preferences:

- Small lots are preferable to larger ones because they allow the hoteliers to replace stocks according to real needs instead of having to invest resources in stocks, which requires committing a significant amount of circulating capital with high opportunity costs.
- Supply operations: the method of delivery influences hoteliers' choices, since orders delivered door to door eliminate the need for specific logistics for collecting goods with resulting cost savings.
- Deliveries should preferably be made within 24 hours, since this allows re-stocking operations to be carried out as needed and makes it possible to purchase smaller lots.
- A lower number of suppliers was also preferred because it allows the hotelier more individual contact with suppliers and also makes it possible to get to know his/her customers better, thus reducing transaction costs and making it possible to form networks.
- The negative sign at the order feature indicates that hoteliers prefer the telephone method/procedure – prefer to use the telephone to place their orders/to order supplies rather than having personal visits from the salesperson. The negative sign means that the sample has a position which is contrary to that of the those who took part in the preliminary study.

The t test takes the significance of the ß parameters into account and holds that the results obtained should be taken as significant if they have a value higher than that determined by the t student Table. The LMPC software (Souza 1999), uses the t test with a significance of 95% for these parameters. Considering that the number of interviews is greater than 120 and the values of the t test obtained are all, on average, greater than 1.96, the null hypothesis for the features is rejected and it is accepted that they all make a significant contribution to utility (Ortúzar 2000). It is emphasised that the results ob-

Table 2. Statistical Results for the Features

Feature	Coefficient	Error	T-test	IC – Index of Confidence (T=2.5%)
Delivery Time	0.4709	0.0993	4.7410	[0.272 ; 0.670]
Supplier	0.3192	0.0993	3.1860	[0.119 ; 0.520]
Lot	0.7353	0.1022	7.1954	[0.531 ; 0.940]
Operation	0.6556	0.1008	6.5027	[0.454 ; 0.857]
Order	-0.2086	0.0969	-2.1532	[-0.402 ; -0.015]

Number of Interviews = 130   Number of Cases = 650
F(Betas_0) = -855.3027   F(Betas_1) = -788.5949
LR (-2[F(0)-F(B)])= 133.4155

tained from the Confidence Interval confirm that all the parameters are accepted. The Similarity Ratio Test, which checks the value of LR and compares it to the value of c2, also rejects the null hypothesis for all the coefficients (Brandli and Heineck 2005).

However, as Table 3 and 4 shows, the results for the ranking of the attributes are different when they are evaluated separately. The ranking of the Suppliers and Order features is inverted in the stated preferences of the inns in the Ouro Preto and Tiradentes regions. Moreover, for the establishments in Tiradentes, the Order feature does not contribute significantly to utility when considering the t Test, whereas, in the case of the establishments in Ouro Preto this feature is important and it is the Supplier feature that does not make a significant contribution.

Another more significant inversion concerns the higher ranked features. In the case of the establishments in Ouro Preto, respondents expressed a preference for the Operation feature, which probably reflects the difficulties encountered by delivery vehicles as a result of the traffic restrictions imposed by the local authorities because of the width and steepness of the streets and the damage to the national historical heritage caused by the noise and vibration. Thus, the establishments are often obliged to have their own system for obtaining supplies. However, as far as the establishments in Tiradentes are concerned supplies are mainly obtained from out of town. It seems that this

Table 3. Statistical Results for the Features – Inns in Tiradentes

Feature	Coefficient	Error	T-test	IC – Index of Confidence (t=2.5%)
Delivery Time	0.5247	0.1358	3.8636	[0.253 ; 0.796]
Supplier	0.3980	0.1389	2.8662	[0.120 ; 0.676]
Lot	0.7593	0.1390	5.4633	[0.481 ; 1.037]
Operation	0.5611	0.1354	4.1443	[0.290 ; 0.832]
Order	-0.0625	0.1317	-0.4749	[-0.326 ; -0.201]

Number of Interviews = 70   Number of Cases = 350
F(Betas_0) = -460.5476   F(Betas_1) = -426.1382
LR (-2[F(0)-F(B)]) = 68.8187

Ricardo Silveira Martins - Débora Silva Lobo - Letícia Labegalini - Alexandre De Padua Carrieri

Table 4. Statistical Results for the Features – Inns in Ouro Preto

Feature	Coefficient	Error	T-test	IC – Index of Confidence (t=2.5%)
Delivery Time	0.4229	0.1464	2.8890	[0.130 ; 0.716]
Supplier	0.2351	0.1453	1.1682	[0.055 ; 0.526]
Lot	0.7069	0.1514	4.6690	[0.404 ; 1.010]
Operation	0.7904	0.1522	5.1940	[0.486 ; 1.095]
Order	-0.3906	0.1441	-2.7097	[-0.679 ; -0.102]

Number of Interviews = 60 Number of Cases = 300
$F(Betas\_0) = -394{,}7551$ $F(Betas\_1) = -359.2308$
$LR (-2[F(0)-F(B)]) = 71.0485$

creates more difficulties for the establishments which place orders with out of town suppliers, mainly São João Del'Rey and Barbacena. They call attention to the need for larger volumes of purchases to make delivery a viable proposition and this problem even arises for establishments that organise their own deliveries.

Analysis of the Preferences

The preferences expressed by the agents responsible for supplying the establishments offering accommodation along the Royal Highway indicated that there was a need for logistics strongly based on the criterion of responsiveness. Given that the business is often family based or belongs to businessmen who have other professional activities outside the cities where it is located, the service offered by suppliers has to offer flexibility and rapid deliveries and not require a sales visit each time in order to place an order. This set of preferences also explains why owners expressed a certain degree of concern about being dependent on a small number of suppliers when they agreed to make a trade off in favour of the second option. In actual fact, such purchases are frequently made from the businessmen's homes rather than from the business itself or by employees. In addition to this, the majority of the suppliers are not from the region in which the business operates.

On the other hand, the seasonal nature of demand (holidays and weekends) makes managers aware of the need to be extremely careful in making up the lots. If purchases exceed requirements then financial resources are committed unnecessarily, leading to both high opportunity costs and, given the nature of demand, a high risk of losses. Therefore, arriving at the correct combination of items requires them to anticipate demand and make extremely accurate estimates of the required stocks, including a safety margin. In other words, because of the chosen purchasing method managers seem to consider that stock management is the most important logistic feature, especially when, among the products that are the subject of this research, those used for breakfast, snacks and meals are considered, that is to say, products which possess the important characteristic of being perishable or those that lose quality over time.

In this case, the Purchasing activities of the Materials sub-system stand out. This subsystem consists of the following items: product analysis; research into the necessary requirements for products and services; market research; identifying the market characteristics of specific purchases; order tracing and follow-up, identifying the needs and requirements of internal customers; providing suppliers with forecasts about future requirements; sending current purchase orders to suppliers; measuring supplier performance; management of supplier quality; ensuring that their products and services meet the required specifications; management of contracts and negotiations; management of contracts and negotiations; development of the correct terms, management of supply and distribution, ensuring that the correct product is delivered on time; cost and price analysis, including analysis of future trends (Monczka, Trent, and Handfield 2002).

However, the strategic sourcing approach deals with a wider scope of activities than the operational approach. According to Monczka, Trent, and Handfield (2002), it is a multi-functional process which is not restricted to the agents who are directly linked to the official purchasing department. Strategic purchasing management focuses on management and development of the suppliers' capacity and integration with it, with the goal of obtaining competitive advantage, which is, in turn, linked to cost reductions, technological developments, improvement in quality, reduction in the length of product cycles and improvements in delivery capacity, in order to serve customer needs.

The purchasing process has undergone radical changes over the years and the definition of the function of purchasing management has changed from being one centred on operational activities to a strategic pro-active one, which contributes effectively to a company obtaining long-term competitive advantage. This advantage derives from adopting the strategy of having a limited number of suppliers who provide the establishment`s strategic requirements and with whom it is possible to establish a long-term relationship of mutual confidence. This type of more stable and committed relationship guarantees a better level of service from the supplier, since it tries to make the relationship more durable and thus both minimize possible opportunistic actions and also increase the possibilities of gaining access to products with better prices because there is a guarantee of regular purchases. Other gains may be noted, such as better responsiveness because more reliable customers are given priority and cost reductions as a result of more flexible transport services and lots.

However, if establishments are unwilling to reduce their supplier base then they will have difficulties in making strategic use of their materials purchases and this will result in the loss of potential competitive advantages. As a result of this mutual commitment, it is frequently the case that the responsive service which establishments declare to be a desirable feature is not available and there may therefore be demands for minimum lots and delivery with additional costs, such as freight.

Tourism Management and Strategic Implications

It is possible to identify a tendency for establishments to abolish menus, since there is a certain difficulty in actually providing what is offered because many items are unavailable. This is frequently due to logistic factors. As a result, it was found that there has been an increase in push flow offers, where managers offer what is available, and a corresponding reduction in choice. This is certainly a possible source of customer dissatisfaction, since cuisine is definitely a competitive factor in tourist itineraries.

The way to better materials management may be the strategic use of the purchasing function and the development of partnerships with suppliers. According to Lambert, Cooper, and Pagh (1998), partnerships are a personalized business relationship based on mutual confidence in an open relationship and on sharing of risks and benefits. In the opinion of Chopra and Meindl (2001), confidence involves the belief that at each stage of the relationship. Each partner is interested in the welfare of the others and will not take any action without taking their impact on the further development of the relationship into account (Monczka, Trent, and Handfield 2002).

In this way, the desired benefits may consist of more frequent supplies and small lots, with freight paid by the supplier. From the standpoint of the supplier this flexibility is viable if it the supply of the required items can be planned with a certain guarantee of regular business. Historically speaking, there has always been an understanding that having many suppliers for the same item is the best strategy (arm's length). This point of view is based purely and simply on market prices, with little or no investment in sharing information (Hoyt and Huq 2000), except the information dealing with the contracts that is required in order to carry out the transaction (Cox, Lonsdale, Watson, and Qiao 2003). In this type of relationship customers obtain quotations from a variety of suppliers – each and every time they wish to place an order – and so they never build up a relationship of trust and credibility (Monczka, Trent, and Handfield 2002).

Traditional relationships of this type between buyers and sellers can be characterised as being short-term (Slack, Chambers and Johnston 2007), and involving a low level of contact between suppliers and customers (Cox, Lonsdale, Watson, and Qiao 2003), who involve themselves in a battle over low prices (Webster Jr. 1992). Virtually all the necessary information is contained in the price of the product which is the object of the transaction Webster Jr. (1992). In relationships of this type each element in the chain acts in isolation, seeking to maximise its advantages and reduce its own costs. This non-collaborative activity between members in the chain brings about a situation where, in the end, all costs are reflected in the price paid by the final user, thus making the chains less competitive (Chopra and Meindl 2001; Christopher 2007).

Therefore, having a lot of suppliers for a long time was understood to offer security for the purchasing company. However, developments in competition, mainly from the 1980s onwards and, in the case of Brazil, from the mid-

1990s onwards, have shown a different path for companies. In the present situation of hyper-competition, they are beginning to understand that having a large number of suppliers no longer means security. What we have, therefore, is a relationship of mutual dependence between supplier and customer, given that dissatisfaction with the behaviour of any of the companies would be disadvantageous for both sides. After all, what really ensures the success of a company is customer satisfaction, and that is only obtained if it supplies features which are valued by customer.

On the basis of this understanding, a strong movement in the direction of another type of relationship began in the world of business. It was characterised more by the mutual dependence approach than the opposing viewpoint. Programs for reducing the customer base can only work if they are accompanied by better relationships. In addition to this, it is most probably the case that the right quantity will be bought without surplus or shortages the lower the time for providing service is. Thus, less stock accumulates the more accurate the forecast – that is, the faster delivey is. Another point which helps to reduce a company's stock levels is the supplier's reliability in dealing with the order placed. The more important the customer, the more reliable the supplier must be. Among other things, reliability means that delivery times will be met, that there will be consistency in delivering orders and that the materials will be delivered in the correct quantities, with uniform quality and with proper documentation.

In the case of establishments along the Royal Highway, the most important feature – the size of lots – which can lead to build up of stocks, can be dealt with strategically by suppliers. Inns selecting suppliers and offering in return the possibility of planning regular purchases may be the way to achieve significant logistic results, and make it easier to obtain materials and foodstuffs that are used less frequently, in a reasonable period of time as well as being in accordance with the rest of the conditions already established.

The process of selecting suppliers can be accomplished by negotiation and this can even be used by all the establishments in one region, at least for more general products such as cleaning materials and some basic foodstuffs. In this way, a small number of suppliers can deal with a whole region thus increasing the quantities supplied and serving a larger number of establishments without having to demand minimum lots. In addition to this, when suppliers deal with a larger number of establishments, they can make more frequent deliveries, even when they are not based in that town because the amounts purchased and the frequency of the orders make this possible and with better use of distribution routes.

CONCLUSION AND IMPLICATIONS

The general aim of this research was to identify the needs and expectations of the service providers involved with the tourist industry along "Royal Highway" (in the State of Minas Gerais, Brazil), as regards the most appropri-

Ricardo Silveira Martins - Débora Silva Lobo - Letícia Labegalini - Alexandre De Padua Carrieri

ate strategy for supply logistics for this type of tourism, which is still in the process of consolidation. In the case of tourist-related services, the strategic use of logistics makes it possible to obtain a competitive differential in both costs and service quality. The results indicate that the scenario preferred by respondents can be described in the as follows: supplies should be provided in a responsive manner within 24 hours by one or a small number of suppliers in small lots which are delivered to establishments by suppliers on the basis of telephone orders. This is the exact order of importance given to the set of features from the most to the least important. In return, the establishments were prepared to give up the arrangement of having a small number of suppliers but keeping the rest of the features as presented above. These were the two hypothetical situations most favoured by the interviewees from among the alternative presented in this study.

However, taking their actual situation into consideration, one which includes the difficulties encountered by suppliers in obtaining access in order to distribute goods (especially in Ouro Preto as a result of the restrictions on large trucks entering the town centre where the majority of the inns are located), the shortage of qualified local suppliers, and the long distance from the major urban centres preferred by consumers, namely Belo Horizonte, Rio de Janeiro and São Paulo, such procedures are not completely viable. Therefore, it is concluded that a strategy with a strong impact on this economic activity in the areas studied should consider the policy of reducing the supplier base. Such a strategy should be based on the purchasing function. As explained in previous sections, negotiating with a small number of suppliers can bring competitive advantages for both customers and suppliers and this will be noticed and appreciated by tourists in terms of greater satisfaction with services and menus in the establishments in the region.

Moreover, this strategy influences the performance of all the other desirable features. This is possible because, when customers negotiate with a small number of suppliers they become loyal to them and, in return, suppliers reciprocate by offering better quality; greater responsiveness; delivering purchases in less time and with greater frequency; lower costs due to the security and stability that comes from a long-term relationship; and deeper understanding of customer preferences that results in allowing telephone orders without there being any uncertainties or mistakes. Furthermore, if adopted in its totality, this purchasing strategy can bring even more significant results for the establishments studied in this article. Together, they can become even more competitive and more capable of offering a higher quality service to the tourists who travel on the Royal Highway.

ACKNOWLEGEMENT

REFERENCES

Bateman, I. (2002). *Economic Valuation With Stated Preference Techniques: A Manual. Departament for Transport.* NY: Edward Elgar.

Ben-Akiva, M. and Lerman, S.R. (1985). *Discret Choice Analysis: Theory and Application to Travel Demand.* London: The Mit Press.

Beuthe, M., Bouffioux, C. and De Maeyer, J. (2003). *A Multicriteria Analysis of Stated Preferences among Freight Transport Alternatives.* Congress of the European Regional Science Association, Proceedings of...

Bolis, S. and Maggi, R. (1998). *Adaptive Sated Preference Analysis of Shippers' Transport and Logistics Choice. 38th Congress of the European Regional Science Association.* Proceedings of... Vienna

Chopra, S. and Meindl, P. (2001). *Supply Chain Management: Strategy, Planning and Operation.* NY: Prentice-Hall.

Christopher, M. (2007). *Logística e Gerenciamento da Cadeia de Suprimentos.* São Paulo: Thompson.

Cox, A., Lonsdale, C., Watson, G. and Qiao, H. (2003). Supplier Relationship Management: a Framework for Understanding Managerial Capacity and Constraints, *European Business Journal,* 135-145.

Danielis, R., Marcucci, E. and Rotaris, L. (2005). Logistics Managers' Stated Preferences for Freight Service Attributes, *Transportation Research Part E,* 41: 201–215.

Ellram, L. (1992). Partners in International Alliances, *Journal of Business Logistics,* 13: 1-25.

Garrigós-Simón, F. J., Palacios-Marqués, D. and Narangajavana, Y. (2008). Improving the Perceptions of Hotel Managers, *Annals of Tourism Research*, 35(2): 359–380.

Hansen, K. V., Jensen, Ø. and Gustafsson, I.-B. (2005). The Meal Experience of A´ La Carte Restaurant Customers, *Scandinavian Journal of Hospitality and Tourism*, 5: 135–151.

Hoyt, J. and Huq, F. (2000). From Arm´s-Length to Collaborative Relationships in the Supply Chain, *International Journal of Physical Distribution & Logistics Management,* 30(9).

Jones, P. (1991). *An Overview of Stated Preference Techniques.* PTRC Course: Introduction to Stated Preference Techniques. [s. 1. s. n.].

Kotler, P., Bowen, J. and Makens, J. (1999). *Marketing for Hospitality and Tourism.* 2nd ed. Essex: Prentice Hall.

Kroes, E. P. and Sheldon, R. J. (1988). Stated Preference Methods, *Journal of Transport Economics Policy,* 22(1): 11-20.

Lambert, D. M., Cooper, M. C. and Pagh, J. D. (1998). Supply Chain Management: Implementation Issues and Research Opportunities, *International Journal of Logistics Management,* 9(2): 1-19.

Leão, F. (1999). *De Volta a Estrada Real.* Belo Horizonte: Rona Editora.

Louviere, J. J., Hensher, D. A. and Swait, J. D. (2000). *Stated Choice Methods: Analysis and Application.* (1st ed.). Cambridge: Cambridge University Press.

Malhorta, N. (2001). *Pesquisa de Marketing: Uma Orientação Aplicada.* Porto Alegre: Bookman.

Matear, S. and Gray, S. (1993). Factors Influencing Freight Service Choice for Shippers and Freight Suppliers, *International Journal of Physical Distribution and Logistics Management,* 23(2): 25-35.

Meyer, P. L. (1995). *Probabilidade: Aplicações à Estatística.* Rio de Janeiro: Livros Técnicos e Científicos Editora-LTC.

Monczka, R., Trent, R., and Handfield, R. (2002). *Purchasing and Supply Chain Management.* (2nd ed.). Cincinnati: Thomson Learning.

Mossberg, L. (2007). A Marketing Approach to the Tourist Experience, *Scandinavian Journal of Hospitality and Tourism,* 7(1): 59–74.

Ortúzar, J. D. (1998). *Modelos de Demanda de Transporte.* (2nd ed.). Santiago: Ediciones Universidad Católica de Chile.

Ortúzar, J. D. (2000). *Modelos Econométricos de Elección Discreta.* Chile: Ediciones Universidad Católica de Chile.

Ortúzar, J. D. and Willumsen, L. G. (1994). *Modelling Transport.* (3rd ed.). NY: Chischester England.

Quan, S. and Wang, N. (2004). Towards a Structural Model of the Tourist Experience: An Illustration from Food Experiences in Tourism, *Tourism Management,* 25: 297–305.

Santos, M. (2001). Estradas Reais: introdução aos caminhos do ouro e do diamante no Brasil. Belo Horizonte: Estrada Real.

Slack, N., Chambers, S. and Johnston, R. (2007). *Operations Management.* (5th ed.). Essex: Prentice Hall.

Souza, O. A. de. (1999). *Delineamento Experimental em Ensaios Fatoriais Utilizados em Preferência Declarada.* Doctoral Thesis – Production Engineering/Federal University of Santa Catarina-Brazil.

Webster Jr., F. E. (1992). The Changing Role of Marketing in the Corporation, *Journal of Marketing,* 56(4): 1-16.