USING SELF-SERVICE TECHNOLOGIES IN HOSPITALITY SETTING

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ABSTRACT

The goal of this research is to focus on the organizational commitment factors of implementing a hospitality program using self-service technologies in the cluster of knitwear and clothing in the city of Socorro/SP. The data collected from the employees of this cluster was analyzed using a questionnaire with a Likert scale of agreement and open questions. The research is characterized as exploratory in nature; such methods are employed in the qualitative and quantitative evaluations of the model. The results were analyzed using non-parametric statistics techniques, as well as further correlation analyses and Cronbach's alpha. The results answered the research objectives, and they showed an unsatisfactory outcome for the barrier of information processing in the cluster that was examined.

Keywords: Cluster, Barriers, Hospitality Program, self-service technologies

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1. INTRODUCTION

The management of the implementation of self-service technologies (SSTs) in a hospitality program has been reported by several authors Lashley and Rowson (2005), Ip; Leung and Law (2011), Chathoth (2007), O'Connor (2008) and Laudon and Laudon. 2010), but the use of SSTs is evolving, as more companies adopt the technology and seek new applications for it.

Many companies in Brazil have begun to use such systems, and the lead has been taken by airlines, which have installed self-service kiosks to expedite check-in and as an aid to their processes. As another example, the cluster of jewelry and bijoux in Limeira/SP has implemented self-service ordering devices at each store in the city as a way of improving customer service levels.

The opportunities arising from the implementation of SSTs appear to be numerous, not only because customers appear to have a strong preference for them, but also because there are cost savings for their operators. Using SSTs, some companies could up-sell by making more products or services available on the screen of a kiosk without increasing the labor costs associated with the hospitality program. SSTs will be able to assist hospitality operators to increase their customer retention by displaying more personalized information on kiosk screens or on other devices.

When customers use SSTs, the software recognizes the customers, acknowledges their previous visits, recalls their preferences, communicates with the customers and presents other customized information. This approach will enhance customer relationship management, thereby creating a competitive advantage. The expected support that this research will provide to companies can be summarized as a description of the barriers to efficiency that will be faced in the implementation of hospitality programs with SSTs.

The survey should also contribute to the development of applied technology, the perfection of concepts and techniques and the validation of supportive practical decisions. Thus, it is important to reveal how well-prepared managers are to tackle barriers to the implementation of hospitality programs with SSTs by administering a questionnaire that will indicate the barriers that they are already prepared to face and the barriers that still represent difficulties.

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The textile industry was one of the first to be developed and established in Brazil. With regard to the generation of industrial products in the state of São Paulo, the knitwear and clothing sector represents about 1% of the entire manufacturing industry (SEBRAE, 2009). Within this sector, 90% refers to the manufacture of articles of clothing, and accessories stand out, although they are concentrated in the Metropolitan Region of São Paulo and the Campinas region (SEBRAE, 2009).

A consideration of this negative performance is of utmost importance, so that the knitwear and clothing sector will be aware of such numbers, and thus, will increasingly seek tools to improve its performance. The expected support that this research will provide for these companies is summarized as a presentation of the types of barriers that they will face in implementing hospitality programs with SSTs.

This research also may contribute to improvements in the management of micro and small businesses (MSB), because research shows that MSBs lack information and knowledge about the importance of using certain tools or philosophies to reduce their rate of failure (SEBRAE, 2010), as 27% of MSBs in São Paulo close in their first year of activity.

The survey should also contribute to the development of applied technology, the perfection of concepts and techniques, and the validation of supportive practical decisions. Thus, it is important to address how well managers are prepared to tackle barriers to the implementation of hospitality programs by administering a questionnaire that will reveal the barriers that they are already prepared to face and the barriers that still represent difficulties. As a result, operators will be able to increase their customers' intention to use SSTs or to improve their satisfaction levels while they utilize SSTs. Moreover, the investment in SSTs will result in higher returns from hospitality programs.

2.   LITERATURE REVIEW

2.1. Micro and small businesses

Micro and small businesses (MSB) constitute approximately 98% of the companies operating in Brazil. The micro and small businesses (MSB) in cities tend to be started by heads of families, who form the companies, and the children work and learn, with the parents, to practice their business. Then, these children acquire

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their own businesses, but their fathers remain in the market, thus multiplying the number of active companies.

This may be related to the growing trend, in municipalities, of companies that operate within the same activity and/or segment and that appear as a cluster that is located within a geographic concentration. The study object, knitwear and clothing, in Socorro/SP, appear as a cluster located within a geographic concentration that acts within the same activity and/or segment.

According to Olave and Amato Neto (2001), this geographical and sectorial concentration is evidence of the formation of a cluster, although it not enough to generate benefits for all of its members. However, companies concentrated in the same geographic area naturally behave as a system; this system is independent of the companies, and they may not be aware of their participation in such a grouping (ZACARELLI, 2005).

According explains Zacerelli (2005) that companies do not need to apply to participate in this "competitive cluster"; as companies emerge and concentrations appear, they have an advantage over companies that are geographically isolated.

Their advantages over existing companies that are geographically isolated needs to be well crafted, according to Zacarelli et al. (2008); this was a recent study of clusters, and there are many clusters in training that compete with individual companies. When companies are concentrated, this tends to resolve certain problems that typically would not be resolved if they were isolated.

In the view of Porter (1998), a cluster is defined as a concentration of interconnected companies in a particular geographic field that encompasses major industries and entities that compete. They include, for example, specialized suppliers of raw materials, machinery and services, and they provide a specialized infrastructure.

Martins et al. (2011) is a study of a cluster and supply chain that examines the experience of an industry; this study concludes that the integration of the agents of a supply chain and a cluster that is geographically concentrated have a positive impact. Porter (1998) suggests that companies build a competitive advantage through their proximity to each other and through being close to their

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suppliers, which provides cost savings. However, many companies tend to choose to continue to work in isolation.

The same way, Iacono and Nagano (2009) identified some factors that can inhibit collaboration among a cluster of companies, including: lack of information, lack of capital or financial resources, low-skilled labor, resource constraints with respect to machinery and equipment, lack of confidence, organizational culture, capacity constraints, conflicts of interest, lack of a holistic view of the business, obsolete technology and interest rates.

In the context of clusters, it is important to know about some items that contribute to maturity that appear within a cluster. Petter et al. (2011) show that clusters provide good qualities like maturity, productivity, flexibility and productive capacity, but they make it clear that this requires detailed planning and a synergy of effort.

One important field that helps businesses, regardless of their size, is logistics, which is a relatively new field of study, compared with traditional fields, such as finance, marketing and production (BALLOU, 2001). It deals with all of the activities related to handling, storage and information, with the aim of facilitating the flow of information and innovation to the point of final consumption (POZO, 2010).

2.2. Self-service technologies

Innovations and diffusion in processes are communicated over time through certain channels among the members of the cluster. Each member of the cluster system faces innovation decisions, which follow a five-step process: knowledge, persuasion, decision, implementation, and confirmation. During the persuasion phase, a number of factors influence the potential adaptors' decision to adopt or reject an innovation. Particularly, customer experiences and the attributes of the innovations have an impact on the adoption of SSTs.

However, some innovation constructs are more appropriate for employee-related applications rather than applications for hospitality customers. The relative advantages of innovations are similar to the construct of perceived usefulness, and the complexity of the implementation of the innovation was renamed as the ease of use, which provides consistency with other emerging models that are being adopted in the field of information systems.

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In the SST context, these concepts identify the sources of satisfactory evaluations by customers with respect to the implementation of SSTs. The results indicate that satisfaction with SSTs is driven by improvements or additional benefits, such as cost reductions and customer satisfaction with the system and the hospitality program, including the ease of use, saved time, and overall convenience.

Contrary to the common perception that hospitality programs do not use information systems, IT (for example, SST) systems are used throughout such clusters. Fuchs et al. (2009) list eleven applications that are typically employed in hotels. These include hospitality actions, cost and accounting systems, enterprise resource planning (ERP), yield management, human resources management (HRM), electronic customer relationship management, intranet, email marketing, websites with booking functionality, e-procurement and online platforms.

The core applications installed in many clusters are planning systems and cost and accounting systems, which handle front- and back-office operations. Chief financial officers believe that using computer applications in their front offices has a significant impact on productivity. Studies that have examined the relationship between SSTs and business management have confirmed the value of IT.

Fang et al. (2011) surveyed 177 employees from four hospitality programs to examine how job characteristics (skill variety, task identity, task significance, autonomy, self-efficacy, and overall job characteristics) influence organizational commitment. Predictive effects were found in skill variety and task significance, which exerted a strong influence upon the degree of an employee's organizational commitment to the implementation a hospitality program.

Lee (2000) conducted a study to identify the impact of interpersonal working relationships on hotel employees' justice perceptions and the effects of those perceptions on employees, including their work-related attitudes and their behaviors with respect to the hospitality program.

We are aware of no studies that have examined the adoption of SSTs in the context of cluster IT. As indicated, hotel IT incorporates a range of applications using numerous platforms. Certain business environments are suitable for IT adoption, and we suggest that they include industries that are people intensive, involve rapid information processing and speedy delivery of jewelry and bijoux, or are paper

intensive. The cluster industry perfectly matches these characteristics. The findings of prior studies identify three factors that affect an organization's adoption of IT: perceived benefits, organizational readiness, and external pressures. From this IT model, our study focuses on the two internal factors of perceived benefits and organizational readiness.

However, as firms grow larger, they begin to stagnate, and they lose sight of the factors that made them successful in the first place—the creation of a product or service that people want. With respect to the hospitality program with SSTs, established firms tend to develop bureaucratic (structural) and control system impediments to innovation. While increasing the size of its business, the question for a large hospitality company is how to maintain its entrepreneurial spirit and to stimulate and foster innovation.

2.3.   Hospitality

The emergence of the word ''hospitality'' to describe hotel and catering activities in English-speaking countries opened up the study of these commercial sectors from social science perspectives. It appears that the description of hotel, restaurant and bar business as ''hospitality'' was an early attempt at *spin*, that is, adapting the name of the sector to create a more favorable impression of commercial activities.

Reference to the implied meaning of hospitality does open up some interesting avenues of enquiry which may ultimately refocus commercial activities. Certainly recent academic developments, stimulated initially by *In Search of Hospitality: Theoretical perspectives and debates* (LASHLEY; MORRISON, 2000) and *Hospitality: A social lens* (LASHLEY; LYNCH; MORRISON, 2007c) have taken up some of the issues that the word hospitality implies, as a way of better informing the study of hospitality for those destined to manage hospitality business operations.

Customers in this new business environment expect to interact with organizations that are ethical, have a good corporate image in the market, and act in an environmentally responsible manner. In this environment emerged the hospitality that emphasizes the commitment to sustainability with stakeholders (customers, suppliers, customers, internal employees, financial institutions, NGOs, and the

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general community), as a management tool for the optimization of economic organization. According Montadon (2003) in hospitality is give, receive and reciprocate.

This threefold duty Mauss discovered within the sociality (the core of the social) in archaic societies respond to a double question: What is the rule of law and interest in the company is backward or archaic type, makes this must be reciprocated? What strength there is in the thing given which causes the done to repay? Own facts observed by Mauss emphasizes a notion of hospitality that begins as a gift and that is not limited to the dynamics of archaic societies (Montadon, 2003).

This does also raise issues about the nature of commercial hospitality because one reading of Telfer's assessment is that commercial hospitality is not likely to be hospitable because of the provision of hospitality being linked to the ulterior motive of profit generation. This debate will be engaged later in the section on the commercial sector because the situation is more complex than it initially appears.

Although the obligations to be hospitable no longer have the moral authority they once had in advanced industrial societies, moralists continued to make reference to them throughout the 20th century. Selwyn (2000) traces sermons by religious leaders stretching into the 19th century, which extolled the virtues of giving hospitality. Writing form, a Christian perspective, Nouwen (1975) argues that hospitality should consist of the following   facets:

- Free and friendly space – creating physical, emotional and spiritual space for the stranger.

- Stranger becomes a guest – treated as a guest and potential friend;

- Guest protected – offer sanctuary to the guest;

- Host give gifts – the host welcomes the guest by providing the best gifts possible;

- Guest gives gifts – the guest reciprocates and gives gifts to host;

- All guests are important and gifted – the host values the guest and gains value from them;

- Acceptance, not hostility – especially the kinds of subtle hostility, which makes fun of strangers or puts them into embarrassing   situations;

- Compassion – hospitality is basically a sense of compassion.

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Recent business studies have led to the development of social enterprises associated with the concept of corporate hospitality, the basic premise of which is the view that business and society are interlinked and interdependent; there is thus a set of legitimate expectations of society concerning the work of companies and the results they achieve (WOOD, 1991). Later, Wood (1991) added another component to these proposal results and social impacts of organizational performance, as reflected by the observed outcomes associated with the company's relationship with society (WOOD, 1991).

The study of hospitality from wider social science perspectives enable an understanding of guest and host transactions that can inform much management practice and prerogatives. Traditional understandings of hospitality require hosts to be primarily concerned with ensuring guest well-being and the emotional needs of their guests. Using some of these traditional models of hospitality offers the opportunity to convert strangers into friends. In a commercial context, this could be translated to converting customers into friends (LASHLEY; MORRISON, 2000), thereby providing the basis for competitive advantage and building a loyal customer base.

Finally, the obligations to be hospitable to strangers may change over time particularly as a society feels under threat, as contact with stranger's increases, or as the benefits and costs of tourism are borne unevenly through a community or society. Molz (2005) and Crang (2005) have used concepts of hospitality to explore the varying responses of host communities to asylum seekers and migrants. Hospitality in the long term can build a differential value of the brand and a competitive advantage for companies and providing social changes that improve life is a challenge for social campaigns and the improve the organization

This view is supported by Katunzi (2011), who identified several items as essential to the integration of a hospitality program: cooperation, collaboration, information sharing, trust, partnership and shared technology. In the view of Katunzi (2011), distortions of information and the difficulties in visualizing information in a hospitality program are common problems in the integration process. This lack of information in a hospitality program is a long-term problem, so it reinforces the lack of information sharing, which may result in the loss of end customers and in higher

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costs. As one method of reducing problems regarding information, Katunzi (2011) provides that, in the absence of an actual supply of information, members of the cluster will eventually carve the data into SSTs.

3.   METHODOLOGY

This research is descriptive and exploratory in nature, and the questions were based on a Likert scale and open questions. The methods used included both qualitative and quantitative evaluations of the model, and the results were analyzed with nonparametric statistics.

First, we will address the measurement of the questions used in the questionnaire. The research included the administration of a questionnaire to owners and/or managers in the cluster of knitwear and clothing in Socorro/SP. Excel 2010 and SPSS 20 were adopted as informatics tools. As this research is descriptive and exploratory, various tests were used to test hypotheses of the differences between the nominal variables and opinions interval (Likert), and their correlations, including the Kruskal-Wallis test.

A pretest of 10 businesses was also performed with the intention of analyzing and validating the questionnaire when the study was conducted. The pre-test was validated by three experts; this step is extremely important in order to better understand the sphere that will be researched. As a result of this pre-test, some questions were changed, and the script was completed for the questions on the questionnaire. The vast majority of the questions were closed and semi-structured.

For the study in question, companies in the cluster of knitwear and clothing in Socorro/SP, which were registered in that municipality, were considered. This research was used to calculate a sample population that included 188 component companies of a cluster that corresponded to 6,5% of all registered companies in the city and 53% of all companies in the clothing business (shops, dressmaking and knitwear).

It was important for the study to be conducted in that city because of its relevance as an important cluster of knitwear and clothing in the State of São Paulo, as well as its strong attraction for tourists. Also, it was conducted in that city for the convenience and ease of the researcher.

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A formula for finite populations was considered for this research. Assuming a confidence level of 90% and a maximum error of 11%, a sample of 43 companies could be used to conduct the research (Fonseca & Martins, 1996). However, the companies surveyed were chosen for convenience, particularly, for ease of access to the respondents (Oliveira, 1999, p. 161).

For the research in question, the size of the sample was 43. As previously mentioned, it was determined to be 40 companies through a calculation of formula 1 below:

$$n = \frac{z^2 \, p \, . \, q \, . \, N}{d^2 \, (N-1) + (z^2 \, . \, p \, . \, q)} \qquad (1)$$

$$n = \frac{1{,}64^2 \, . \, 0{,}5 \, . \, 0{,}5 \, . \, 188}{0{,}11^2 \, (188-1) + (1{,}64^2 \, . \, 0{,}5 \, . 0{,}5)}$$

$$n = \frac{126{,}41}{2{,}94} \qquad n = 43$$

Forty-three owners and/or managers of knitwear and clothing companies in the city of Socorro/SP were personally interviewed; however, the first three (listed as A, B and C) were discarded because they responded to the questionnaire more than once, leaving 43 questionnaires for the analysis.

4.   ANALYSIS AND RESULTS OF THE RESEARCH

An analysis of the size of the companies shows that 85% of the companies are micro, which represents 37 of the companies surveyed, and 15% are small businesses, accounting for 6 of the companies surveyed. A majority of the companies interviewed, 61%, had existed for more than 10 years.

Despite the experience of the companies surveyed, considering the length of their existence, they had a very large idle capacity, if it is taken into account that they could operate for three shifts. The analysis showed that 70% of these companies operate for only one shift, and only 5% operate for three shifts.

Moreover, the monthly volume of parts produced is, on average, 5100 products, while 78% of the companies produce less than 10,000 products per month. With respect to different types of products, the businesses produce, on average, 23 types of parts.

The following describe these businesses:

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a)   The number of employees is distributed in the following proportions: 15% have 20 to 99 employees, and 85% have 1 to 19 workers,

b)   With respect to longevity, the companies are distributed in the following proportions: 30% have operated for two to 10 years, and 70% have existed for more than 10 years,

c)   The numbers of customers are distributed according to the following proportions: 55% have up to 25 clients, and 45% have more than 24 customers,

d)   The markets in which they operate are distributed according to the following proportions: 35% operate only wholesale, 15% operate only as a shop, and 50% operate both wholesale and as a shop.

e)   Forty-three owners and/or managers of knitwear and clothing companies in the city of Socorro/SP were personally interviewed; however, the first three (listed as A, B and C) were discarded because they answered the questionnaire more than once, leaving 40 questionnaires for the analysis. An analysis of the company size shows micro businesses with less than 19 employees and small businesses from 20 to 99 employees. As shown in Figure 1, it can be observed that 85% of the companies are micro businesses, representing 34 of the companies surveyed, and 15% are small businesses, accounting for six of the companies surveyed.
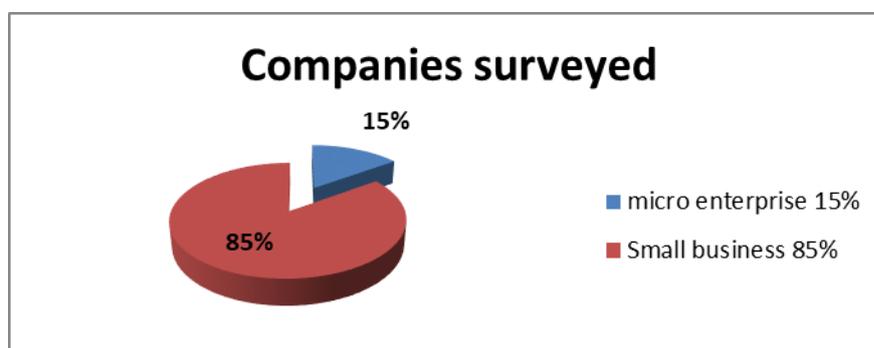

Figure 1: Size of companies

4.1. Correlation Analysis

A correlation analysis is used to determine how the variables are related. A test can be used to verify the correlation between two variables; the coefficient represented by the letter R varies from -1 to 1, and the closer these extremes, the greater the degree of correlation between the variables (Malhotra, 2006).

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With the aim of conducting a statistical analysis of the characteristics of the companies presented at the beginning of Section 4, and for its subsequent interpretation, we calculated the correlation coefficients between the nominal variables, and the results are shown in Table 1.

Table 1: Pearson correlation coefficient between the nominal variables

	Instruction	Age Company	Amount Stock	Market operates	Quantity shifts	Amount Customers	Value Billing
Instruction	1						
Age Company	0.172	1					
Amount Stock	0.202	0.328	1				
Market operates	0.239	0.202	0.072	1			
Quantity shifts	0.382	0.313	0.552	0.103	1		
Amount Customers	0.241	0.251	0.540	0.070	0.331	1	
Value Billing	0.369	0.266	0.688	0.175	0.517	0.442	1

In an analysis of the variable instruction (the education level of the owner), no significant correlation with the other variables was detected, only some positive correlation with the variable value billing (0.369). However, it was not enough to assert that firms in which the owner has higher qualifications tend to have higher turnover.

A significant correlation between the firm age variable and the market in which it operates variable was expected, as many of the respondents claimed to have a shop in addition to operating a wholesale business, and to have years of work experience with knitwear and/or clothing. One reason for this is the ability to minimize problems by obtaining the best order from the customer, when the hospitality program has increased considerably. Thus, the hospitality program could help to reduce these inventories, as the words of the respondent Q15 indicate below. However, a low correlation, 0.202, was detected.

Q15: "One problem I had in the past with my stock was minimized when the hospitality program started working in my shop ….".

For further illustration, respondent Q23 stated the following:

Q23: "Many companies here in Socorro, but also in nearby towns, are kind of forced to have a shop in addition to their factory. The store helps to distribute products that are not manufactured and delivered to clients...".

Regarding the variable, firm age, no significant correlation with the other variables in hospitality was detected. However, a significant correlation between the

number of employees and the amount of turns was identified, at 0.552; this was expected, even considering that idleness has already been discussed with respect to hospitality. A significant correlation between the variable, number of employees, and the variable, amount of customers, was also detected, yielding 0.540; this may indicate a trend for companies with more employees to seek to engage in more hospitality programs with their customers. Regarding the variable, market in which it operates, as previously mentioned, a significant correlation with the variable, age of the company, and their hospitality programs was expected.

Finally, a significant correlation between the number of customers and the value of sales was expected, which was confirmed at 0.442. Aside from the aforementioned correlation between the number of employees and the number of customers, no significant correlation was detected with other variables in the function of hospitality.

In the interest of strengthening the analysis, a correlation test considering all variables was also performed, wherein we found the following results: With respect to the company's hospitality, we detected a correlation with revenues of 0.520; this correlation was expected, because companies with higher revenues tend to buy raw materials directly from manufacturers, and they have the advantage of better prices because of their hospitality programs.

Another correlation of 0.600 was found between a client who warns in time (hospitality relationship) of a need to increase the amount it has previously requested and a business being able to provide a timely notification to its provider when the business needs to increase the amount previously requested. This index also was expected, because companies are able tell their suppliers in advance about possible changes in orders.

A correlation of 0.514 was found between using a company's own IT for the withdrawal of supplies of raw materials and the delivery of products to its customers. This correlation can be demonstrated, considering that various respondents claimed that they used their IT with integrated communications.

Evidence of this is provided by the statement of respondent Q37:

Q37: "In order to help my production (or win time), I prefer to use my own IT system, both to obtain the raw material, and to deliver the finished product to my

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client. I like doing this because of the gains in time and money, or I can retreat when I need to improve the gains through a good relationship."

4.2. Questions related to barriers

In the interest of knowing the barriers and/or obstacles to coordinating the implementation of a hospitality program, use the adaptation of the base established by the Chopra and Meindl (2003) will be used; they divided the barriers into the following five categories, which will be described below: incentive barriers, information processing barriers, operational barriers, behavioral barriers and price barriers.

a)   Incentive barriers: Such barriers arise when the gains do not reach the chain, because the incentives are passed to different stages of the chain;

b)   Information processing barriers: These barriers involve situations in which there are distortions of the demand information between different stages;

c)   Operational barriers: These barriers are actions performed in the period between the issuance and service of applications, which lead to increased variability;

d)   Price barriers: These barriers involve situations in which product pricing policies lead to increased variability in issuing orders;

e)   Behavioral barriers: These barriers are attitude problems in organizations that result in whiplash and the problems that are often linked are the ways the hospitality program is structured and communication between stages.

The following provides the answers to the two questions related to incentive barriers, represented by the percentage results from the following 5-point Likert scale: strongly disagree (SD), partially disagree (PD), indifferent (I), partially agree (SA), strongly agree (SA), as shown in Table 2 below.

Table 2: Incentive barriers

BARRIERS OF INCENTIVES					
Questions	**SD**	**PD**	**I**	**PA**	**SA**
Question 9 - Are there goals for employees that manage hospitality, where there are incentives to hit.	42%	13%	22%	20%	3%
Question 10 - On the importance of working with incentives in hospitality	3%	0%	27%	25%	45%

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In the responses to the questions related to incentive barriers, which can be analyzed with respect to question 9, there is a very strong concentration of firms that do not utilize incentives to meet targets, with a percentage of 55%. However, the responses to question 10 reveal that 70% of companies consider it important to work with incentives. Despite having a large concentration of companies that view working with incentives as important, in many open questions, the respondents highlighted the importance of the incentives to all departments, without creating competition between them. Respondent Q1 helped to highlight this issue in the following statement:

Q1: "The company does not work with cash incentives because of the fear that they will create competition that disturbs the daily life of the company, and that they will not create hospitality conditions …".

Based on this vision, they contribute what is needed to produce an alignment of goals and incentives, so that each member of the hospitality program can maximize their total profits. The following shows the answers to the three questions related to information processing barriers, represented by the percentage results of the following 5-point Likert scale: strongly disagree (DT), partially disagree (SD), indifferent (I) agree partially (CP) totally agree (CT), as shown in Tables 3 and 4 below.

Table 3: Barriers in processing information

BARRIER IN PROCESSING INFORMATION					
Questions	Only with More Orders	Orders Orders that consumption	Orders and Equal Consumption	More than consumption Requests	Only consumption
Question 7 - How to use the hospitality	15%	28%	11%	23%	23%

In observing question 7, we visualized a very similar percentage between companies that work with more requests than consumption and companies that work with most of the applications that they use.

Table 4: Barriers in information processing

Questions	SD	PD	I	PA	SA
Question 11 – The hospitality in your company warn customers in advance and inform the subject when will buy larger quantities than normal allowing your company to plan material purchases and manufacturing	11%	17%	18%	28%	26%

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Question 12 – The hospitality program in your company warns in advance and inform your supplier will see why when you buy larger quantities than normal	8%	5%	17%	47%	23%

Below are the answers of respondents Q5 and Q7 regarding the exchange of information:

Q5: "I (the owner) will make the first customer contact, and once a year, I personally look at the prospects for the next year and pick up important information, and other contacts are made via the hospitality program…."

Q7: "The exchange of information here is made by a hospitality program to a seller that goes to companies that conduct sales; many customers make their requests through the IT system."

Question 11 (warning customers in advance and informing the subject when you will buy larger quantities than normal, which allows your company to plan material purchases and manufacturing) shows that 46% of companies agree that they are warned in advance, which is a percentage that is greater than the sum of respondents who are not usually advised, which amount to 33%, with an average score of 3.15.

Q8: "The exchange of information is accomplished via email and telephone, not through an appropriate hospitality program. There are some setbacks when the client connects to make a change; however, this happens in a timely manner."

With respect to question 12 (your company provides warning in advance and informs your supplier when you will buy larger quantities than normal), it appears that the vast majority of companies, 68%, are able do this with ease, with an average score of 3.7.

Many respondents addressed this question as a result of the above, i.e., if the customer notifies the company in advance, the company can notify its supplier. Some of the respondents' statements provide evidence of this:

Q3: "When the seller is in my business and is closing the application, if my customer calls and changes his order, up or down, I can then call my provider and do the same. If my client calls with a change in the time, I can provide notice to my supplier of the time. This is a consequence of the hospitality program."

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Q40: "The exchange of information with suppliers is done via the hospitality program. If you need to increase or decrease the amount, or even to change the delivery date, I can provide notice in time, if my client tells me in time; but this is unlikely to happen, because he always calls at the last minute."

Other respondents show a strong affinity with their supplier. Considering their competition, many of them also go to the company to carry out their requests, and they always end up calling to verify possible changes. Below are some answers that demonstrate this fact.

Q1: "Many vendors end up coming directly to the company, primarily through their current competitors.

They bring samples, and because we already make, more or less, what we pay, we then "fight" for the best price and quality. Also, they continue to call later, asking: Can we increase the request? There's still time! We take the opportunity to grow and shrink as needed, because of an inappropriate hospitality program."

Q5: "The exchange of information with suppliers is much quieter, because they ask directly through the hospitality program for convenience."

The implementation of information systems facilitates data sharing to avoid problems caused by barriers to information processing; however, the vast majority of respondents said that they only use telephones and e-mail, and none of them stated that they use any type of system that shares data. They do not have hospitality programs.

The following shows the answers to the four questions related to operational barriers, which are represented by the percentage results on the following 5-point Likert scale: strongly disagree (SD), partially disagree (PD), indifferent (I), partially agree (PA) totally agree (SA), as shown in Table 5 below.

Table 5: Operational Hospitality barriers

OPERATING HOSPITALITY BARRIERS					
Questions	SD	PD	I	PA	SA
Question 14 - The company uses the most supplies for implement a good hospitality program	10%	10%	10%	30%	40%
Question 15 - The availability of information on historical sales of items is quick and organized.	1%	7%	11%	24%	57%
Question 20 - The program of hospitality usually be stopped with stock products planned, produced and cut the customer request.	19%	21%	20%	25%	15%

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Question 14 shows that 70% of companies contact their customers using their own hospitality programs. The companies that were interviewed indicate that there are no information systems incorporating their departments, such as IT, which would support a possible reduction of lead-time to obtain information faster and would show a very large degree of organization.

Question 15 easily proves that information on historical sales of items is available in a quick and organized manner, and 81% of companies demonstrated that they have knowledge of their historical sales, with an average score of 4.275. Considering this figure, which shows that 81% of companies have knowledge about their historical customer sales, and consequently, their demand, it is worth noting that many respondents claimed that they warn and/or question their clients when they receive requests asking for lots that are larger than usual, as the following respondent indicates:

"Q38: Always confirm the amount requested in the email request or call using the hospitality program, especially if the amount is much larger than the accustomed amount."

Question 20 demonstrates that this is not the case for 40% of companies. However, a significant number of companies suffering from an inventory of products that have been manufactured, but have not reached their final destination, have customers. A theoretical inventory can be a problem for companies, because of costs and because it can cause problems such as whiplash in the absence of a hospitality program.

The following shows the answers to the two questions related to price barriers, which are represented by the percentage results on the following 5-point Likert scale: strongly disagree (SD), partially disagree (PD), indifferent (I), partially agree (PD), strongly agree (SD), as shown in Tables 6 and 7 below.

Table 6: Price barriers

PRICE BARRIERS CREATED BY SUPPLIERS				
Questions	**Almost only Wholesalers / Distributors**	**Only Wholesalers/Distributors**	**Mist**	**Almost only manufacturers**	**Only Direct from Manufacturers**
Question 8 - sources of supplies.	22%	28%	5%	17%	38%

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For question 8 (relating to the company's sources of supply to offer greater hospitality to customers), it was expected that companies carry out cluster purchases directly from manufacturers, i.e., they buy together; however, only 38% of companies buy directly from manufacturers, and 28% of companies buy from wholesalers and distributors.

Table 7: Price barriers created by suppliers

Questions	SD	PD	I	PA	SA
Question 13 - The company usually make purchases of products in larger batches to save thinking, as well as using IT system	8%	3%	6%	45%	38%

For question 13, we show an average score of 4.0, whereas 83% of companies buy larger quantities in order to obtain savings. This enables the company to obtain larger discounts on purchases made at one time, and possibly, to obtain a larger profit on product sales.

The respondents are aware of this fact, but primarily, they explain that this is normal because their companies have cash and good IT systems (hospitality programs). When a company buys of season to obtain better prices or even because of a fear that there will be a lack of raw material, suppliers and businesses are accustomed to this, as the respondents indicate below:

"Q2: I choose the best prices and best terms, because all of my suppliers have the same quality. I do not really like having stock, but because the IT system covers all of them, we are required to have it, both because of the fear that there will be a lack of raw material or because the best prices are out of season."

"Q12: I shop in larger batches for better prices, make cash payments and shop even out of season, so that I can obtain more discounts. If a promotion appears for yarn, I buy it in order to sell cheaper, because the competition is great, and I have a hospitality program."

The following shows the answers to the four questions related to behavioral barriers, represented by the percentage results on the following 5-point Likert scale: strongly disagree (SD), partially disagree (PD), indifferent (I), partially agree (PA) totally agree (SA), as shown in Table 8 below.

Observing the responses to the questions related to behavioral barriers, which can be analyzed in question 16, there is a strong concentration of companies

that verifies whether they have enough people, hospitality programs and machines to produce and deliver orders on the requested dates, with a percentage of 95% and an average score of 4.5.

Table 8: Behavioral barriers

BEHAVIORAL BARRIERS					
Questions	SD	PD	I	PA	SA
Question 16 - The company receiving the request, there will be enough people and machines to produce and deliver on the date requested. (hospitality program)	2%	0%	2%	36%	60%
Question 17 - Does the company have the information of time for weaving, sewing, ironing, packing each item (IT)	9%	7%	1%	23%	60%
Question 18 - The quantities of materials stored coincide with the quantities marked on the computer or card stock, as the company cares to count inventory and verify the reasons of errors with frequency. (hospitality program)	9%	8%	9%	44%	30%
Question 19 - The employees involved are seeking to plan and monitor the entire manufacturing as well as ensure that the stocks of materials are well controlled. (IT)	0%	1%	18%	44%	37%

Question 17 also shows an average score of 4.0, with a strong concentration of companies having information about the times of each item, at 83%. Referring to question 18, there is a strong concentration of companies that check the amounts of stock and check for errors and their reasons, at 74%, with an average score of 3.8. The companies in the cluster that make an effort to focus on the root of the problem in order to reach a final resolution, as well as the companies surveyed, are concerned with their hospitality programs.

"Q6: The company is trying to install a system or a hospitality program to reduce the number of times that we take stock to make a count. Considering the ease, I also have a spreadsheet where I record the possible reason for the error."

On issue 19, there is a strong concentration demonstrating that employees care and engage, with 81% agreement and an average score of 3.95.

4.3. Quantitative Analysis with Cronbach's Alpha

The analysis, using Cronbach's alpha, aims to demonstrate consistency in the different variables of the barriers to the implementation of hospitality programs. The calculation of the value of Cronbach's α was performed using SPSS v20. For the analysis, we selected the following: Analyze Scaling and Reliability Analysis. Further, the tests were scored: Descriptive for Item, Scale and Scale if item is

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deleted, and Inter-item correlations. SPSS v20 provides several important findings; Table 9 shows the Summary Item Statistics, which provides a summary of the statistical values of the variables.

Table 9: Statistics Summary

	MEAN	MINIMUM	MAXIMUM	RANGE	Max/Min	Variance	N. of Items
Item means	3.568	2.275	4.500	2.225	1.978	0.414	15
Item variance	1.558	0.613	2.913	2.300	4.753	0.461	15

According to Guimarães et al. (2010), in their study, a Cronbach's α coefficient greater than 0.60 is accepted as reliable. The obtained value of the Cronbach's α in this case was 0.637, indicating good consistency, and an indicator a high degree of confidence may be extended to other work-related barriers to the implementation of SCM, which are shown in Table 10 below.

Table 10: Cronbach / Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
0,637	0,672	15

The interpretation of Cronbach's α can be understood as a squared correlation coefficient (R^2) of the alleged real extent of the phenomenon studied.

When evaluating the scale mean, if an item is deleted (average scale if the item is discarded), there is an average of 53.53, with a standard deviation of 6.843, as shown in Table 11 below.

Table 11: Statistics scale

Mean	Variance	Std. Deviation	Nº of Items
53,53	46,820	6,843	15

5.   CONCLUSIONS

The objective of this research was to analyze and verify the barriers that companies in a knitwear and clothing cluster in Socorro/SP face in implementing hospitality programs. As the results indicate, the surveyed companies show more weakness in the items related to information processing (IT systems); there is evidence that this area needs improvements, such as systems that integrate their businesses with their suppliers and customers. Despite this, the companies have demonstrated control of their processes, their historical sales and their prepayments when necessary.

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The information processing barriers are valid and should take into account the suggestions of Meindl and Chopra (2003), who assert the importance of having integration through an IT system and a hospitality program; thus, this integration will be suggested as a recommendation.

From the results shown, it appears that the cluster of knitwear and clothing in Socorro/SP demonstrates that, in general, they are obstructing the possible implementation of hospitality programs. Figure 2, below, provides the view of barriers versus the position of the respondents.

BARRIERS	CHOPRA AND MEINDL VISION	RESPONDENTS SEARCH
Barriers **Incentives**	Providing incentives to different stages Incentives focused only on the local impact	A very high percentage of respondents do not work with incentives (average score 2,3) Many respondents consider that the incentive Is only valid when all this the hits (open issues) with a mean score of 4.1 considered important
Barriers **Information**	Relying only on applications may increase the variability Lack of information sharing between the many stages Advantages to use some sort of integrated system Advantages to use some sort of integrated system	Companies tend to work with the customer request (Average score 2.9) The companies consider that a good share customer Information is important (Average score 3.15) The companies consider adequately share information with is supplier (Average score 3.7)
Operational **Barriers**	Shopping with much large lots that demand may increase variability Long lead time extends to resupply Long lead time extends to resupply Inventories too high can cause financial problems Saving based on batch size can magnify problems	They confirm that use of own resource to support the customer (Average score 3.7). Demonstrate facilities to solve problems (Average 4.2) Demonstrate facilities to solve problems (Average 4.2) They know is necessary for good attendance and hospitality
Price **Barriers**	Promotions can result in anticipated purchase	Because create good hospitality (Average score 4.0) Many companies demonstrated at the open question Many companies demonstrated at the open question they bay, not for hospitality, but because seasonality
Behaoviral **Barriers**	Vision and/or local concern only Trust in employees	Companies are concerned with the whole, Demonstrating the importance of customer and the hospitality process (Average score 4.5) The companies show that the employees engage and demonstrate concern with the hospitality Process (Average score 3.9)

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Figure 2: Adapted barriers of Chopra and Meindl (2003) versus the position of respondents

The results were very favorable regarding the incentive barriers, because the companies demonstrate that they do not work with incentives and their justifications are very close to the possible problems. The companies that do not work with incentives show an interest, but the respondents stressed that the incentives must be for everyone, and should not be individual, which could be a barrier to the implementation of a hospitality program.

The companies have very valuable experience in their businesses, which tends to help in some decisions. This was easily found on items covering aspects relating to historical sales, and when they were asked if they are stocked when a customer cancels an order. In this case, companies are prepared to demonstrate that they do not suffer from operational barriers. Referring to price barriers, knitwear and clothing firms, as representatives of the cluster, could benefit more by joining an integrated hospitality program. However, they obtain better prices and terms for reasons such as: competition, cash purchases, necessity, seasonality and opting for advance purchases to cut costs and fearing possible shortages of raw materials in their hospitality programs. However, they constantly discuss all of those reasons with their suppliers.

Finally, the behavioral barriers were satisfactory; the agreement, with an above average score of 3.8, shows that companies are prepared for possible integration, as they demonstrated that they are not only are concerned with particular functions or activities, but with the whole.

One limitation of this research, which was conducted only in the city of Socorro/SP, is that it does not reflect a broad view of a cluster. Thus, further research of other clusters in other cities, a comparison of the differences between the cities to ascertain if there is any correlation, a comparison of the clusters, and an extension of this research to other segments are recommended.

REFERENCES

BALLOU, R. H. (2001). **Supply chain management**: planning, organization and logistics business, Porto Alegre: Campos.

CHOPRA, S.; MEINDL, P. (2003). **Managing the supply chain**, New York: Pearson Prentice.

CHATHOTH, P. (2007). The impact of information technology on hotel operations, service management and transaction costs: A conceptual framework for full-service hotel firms. **International Journal of Hospitality Management**, v. 26, n. 2, p. 395–408

CRANG, P. (2005) **Hospitality, the city, and cafe´ culture**: Cosmopolitanism, conviviality and contemplation in Chueca, Madrid. Conference Abstracts, Mobilising Hospitality:The Ethics of Social Relations in a Mobile World. Lancaster: Lancaster University.

FANG, C.; PENG, P. P.; PAN, W. (2011). Does an a la carte or combo menu affect the performance of a teppanyaki-style restaurant? **International Journal of Contemporany Hospitality Management**, v. 25, n. 4.

FONSECA, J. S.; MARTINS, G. A. (1996). **Statistics course**. Sao Paulo: Atlas, p. 320.

FUCHS, M.; WITTING, C.; HÖPKEN, W. (2009). **eBusiness Readiness, Intensity and Impact**: An Austrian Hotel Study. In: HÖPKEN, W.; GRETZEL, U.; LAW, U. (Eds.), Information and Communication Technologies in Tourism. New York, Springer, p. 431-442.

GUIMARÃES, T.; BRANDON, B.; GUIMARÃES, E. R. (2010). Empirically testing some major factors for bank innovation success. **Journal of Performance Management**, v. 23, n. 2, p. 34. Retrieved from http://search.proquest.com/docview/856125539?accountid=34749. Acessed on em: 16 may, 2012.

IACONO, A.; NAGANO, M. S. (2009). Interaction and cooperation in local clusters: Identification and analysis of the inhibiting factors. **XII Symposium on production management, logistics and international operations**, São Paulo.

IP, C.; LEUNG, R.; LAW, R. (2011) Progress and Developmentof Information and Communication Technologies in Hospital-ity. **International Journal of Contemporary Hospitality Management**, v. 23, p. 533-51.

KATUNZI, T. M. (2011). Obstacles to Process Integration along the Supply Chain: Manufacturing Firms Perspective. **International Journal of Business and Management**, v. 6, n. 5, p. 105-113.

LASHLEY, C.; MORRISON, A. (2000) **In Search of Hospitality**: Theoretical Perspectives and Debates, Oxford: Butterworth-Heinemann.

LASHLEY, C.; ROWSON, B. (2005). Getting it Right: Exploring Information Technology in the Hospitality Curriculum. **International Journal of Contemporary Hospitality Management**, v. 17, n. 1, p. 94-105

LASHLEY, C.; LYNCH, P.; MORRISON, A. (2007) **Hospitality**: An introduction. In: LASHLEY, C.; LYNCH, P.; MORRISON, A. (Eds.), Hospitality: A Social Lens (Oxford: Elsevier).

LAUDON, K. C.; LAUDON, J. P. (2010). **Management Information Systems**: Managing the Digital Firm. 11th ed. Upper Saddle River, NJ: Pearson Prentice Hall.

LAW, R.; LEUNG, R.; BUHALIS, D. (2009). Information Technology Applications in Hospitality and Tourism: A Review of Publications from 2005 to 2007. **Journal of Travel & Tourism Marketing**, v. 26, n. 5/6, p. 599-633.

MALHOTRA, N. K (2006). **Marketing Research**: An Applied Orientation. Porto Alegre: Bookman.

MARTINS, R.; XAVIER, W. S.; SON, O. V. S.; MARTINS, G. S. (2011). Management Strategies logistics operations in industrial organizations of a local productive arrangement (APL). **Journal of Directors of UNIMEP**, v. 9, n. 1, p. 01-31.

MOLZ, J. G. (2005) **Cosmopolitans on the couch**: mobilising hospitality and the internet. Conference Abstracts, Mobilising Hospitality: The Ethics of Social Relations in a Mobile World. Lancaster: Lancaster University.

NOUWEN, H. (1975) **Reaching Out**: The Three Movements of the Spiritual Life. New York: Doubleday & Co.

OLAVE, M. E. L.; AMATO NETO, J. (2001). Productive Cooperation Networks: a strategy for survival and competitiveness of small and medium enterprises. **Magazine & Production Management**, v. 8, n. 3, p. 289-303.

OLIVEIRA, S. L. (1999). **Treaty of scientific methodology**. 3rd. ed., St. Paul: Pioneer.

PETTER, R. R.; RESENDE, L. M.; CERANTO, F. A. A. (2011). ; Maturity level of local production: A diagnosis of APL in caps Apucarana - PR. **Production Magazine Online**. v.11, n. 3, p. 803-822.

KIN, J.; CHRISTODOULIDOU, N.; BREWE, P. (2011). Impactof Individual Differences and Consumers' Readiness on Likelihood of Using Self-Service Technologies at Hospitality Settings. **Journal of Hospitality & Tourism Research**.

PORTER, M. E. (1998). **Clusters and the new economics of competition**. Harvard Business: Review.

POZO, H. (2010). **Management of material resources and heritage**: a logistic approach, São Paulo, Atlas.

SEBRAE-SP, (2009). **Rating Criteria and Concepts for Business**. São Paulo. Disponível in: http://sebrae.sp.gov.br. Accessed on: 27 January In 2012

SELWYN, T. (2000) **An anthropology of hospitality**. In: LASHLEY, C.; MORRISON, A. (E In Search of Hospitality: Theoretical Perspectives and Debates. Oxford: Butterworth-Heinemann.

ZACARELLI, S. B. (2005). **Strategies and success in business**, São Paulo, Saraiva.

ZACARELLI, S. B.; TELLES, R.; SIQUEIRA, J. P. L.; BOAVENTURA, J. M. G.; DONAIRE, D. (2008). **Clusters and business networks**: a vision for the management of business, São Paulo: Atlas.