An Analysis of U.S. Hotel and Restaurant Reviews on Travel Blogs to Determine the Frequency of Pests and Their Impact on Guest Loyalty

May 29, 2009

John C. Crotts, Ph.D.
College of Charleston

Peyton Mason, Ph.D.
Linguistic Insights, Inc.

An Analysis of U.S. Hotel and Restaurant Reviews on Travel Blogs to Determine the Frequency of Pests and Their Impact on Guest Loyalty

Often illustrated as the 10-10-10 rule, a hotel's owners spend $10 million purchasing and renovating a hotel (or restaurant group) to attract customers at a profit. In 10 minutes, the customer is driven away with a bad service experience, and you wait 10 months or 10 years for another chance to win them back (Crotts and Ford 2008). Make no mistake about it, the hospitality industry is competitive and service excellence, or failure, predicts a firm's future sales and profitability.

Consider for a moment the average family of four will spend returning to their favorite hotels and resorts in a 10 year period. Given that the typical upper-middle income family will take a one-week vacation and two to three short get away trips in a typical year, the average including lodging, and food and beverage *can* be $3,800 per year or $38,000 over ten years. We say "can be" because a bad experience can instantly stop that revenue stream. One bad experience can end the lifetime customer value before it comes anywhere near its true potential. Profitability depends on maximizing the lifetime value of your customers, and that value is fully assured only when you earn the customer's loyalty. We define customer loyalty as: high return frequency and/or high likelihood to recommend to others. Building loyalty starts with a commitment to delivering excellence at every moment of truth and must extend from upper management to every frontline employee.

Guest experiences are complex phenomena. They involve a diverse array of amenities and service encounters; all influenced by the guests' high expectations. In today's competitive business environment, the ability to meet and exceed customers' expectations is a key determinant of guest satisfaction. In turn, guest satisfaction has a direct and positive impact on the economic viability of any hospitality organization. Thus, all firms should strive to meet and exceed visitor expectations in every aspect. Recognizing, however, that all hospitality managers have limited resources, each manager needs to make sure that his or her primary focus and highest priorities are on its key drivers – guest satisfaction (Ford and Heaton 1999; Crotts, Pan and Raschid 2008).

Therefore, the objectives of the astute hotel or restaurant manager are threefold:
- How satisfied are my guests?
- What are they telling others about their experiences?
- How is my property performing in areas where my guests have zero tolerance for mistakes?

Central to all of these objectives is the means to accurately and reliably measure guest satisfaction and loyalty. This study applies a research technique that we contend greatly enhances the value of qualitative data in exploring deeper into the consumer's mindset, and to identify those features of products and services which guests truly value. Stance-shift analysis has gone through a rigorous review process in a variety of settings (Crotts, Mason and Davis 2009; Lord, Davis and Mason 2008; Mason and Davis 2007; Maclagan

and Mason 2005; Mason, Davis and Bosley 2005). We employ the research method to identify the frequency of pests encountered by hotel, resort and restaurant guests and the impact of those encounters on their loyalty (e.g., willingness to repeat purchase and recommend to others).

BACKGROUND

There are three areas of research which have influenced this research study. They are the research on customer satisfaction, service failure and recovery, and the emergence and importance of internet travel blogs.

Guest Satisfaction
Consumer, or guest, satisfaction is one of the most enduring and well-researched areas in consumer behavior and tourism fields (Pizam, Neumann and Reichel 1978; Parasurman, Zeithaml and Berry 1988; Pizam and Ellis 1999). Guest satisfaction has been defined as a post-consumption, evaluative judgment of a consumer concerning a specific product or service (Gundersen, Heide and Olsson 1996). It is an elusive and indistinct construct that is based upon an individual's pre-purchase expectations and post-purchase quality perceptions (Parasurman, Zeithaml, and Berry 1985).

The factors that define guest satisfaction can be classified into three types, each having a different impact on guest satisfaction (Fuch and Weiermair 2003, 2004). They are factors that can increase a guest's overall satisfaction, those that only prevent the guest from feeling dissatisfied; and those factors that can work both ways. Matzler and Sauerwein (2002; pp. 318-319) define these types of factors influencing guest satisfaction as follows:

- Basic factors – guests regard these factors as being guaranteed by the service provider, with no need to request them specifically. If they are not fulfilled they lead to a high level of dissatisfaction although they do not increase satisfaction if they are fulfilled. Cleanliness and hygiene, safety, and tranquility are known examples of basic factors.

- Performance factors – these are factors that increase satisfaction levels if they are fulfilled and reduce them if they are not. Climate, cuisine, and the availability of recreational amenities and their quality are examples.

- Excitement factors – these are factors that increase guest satisfaction if they are fulfilled but do not cause dissatisfaction if they are not. Examples include: An interesting town or city in which the hotel resides, chance to get to know other guests, and the little things hotel and restaurant employees do to create service surprise.

In tight economic times, it is the basic and performance factors that a manager must get right. The presence of pests (e.g., cockroaches, bugs, spiders) is a basic factor that communicates to guests poor cleanliness or sanitation that can lead to health and safety

concerns; all understandably leading to dissatisfaction. The purpose of this study is to determine the presence of certain types of pests on guests' repeat purchase intent and willingness to recommend.

Service Failure and Recovery

Estimates are that businesses typically lose about 50% of their customers every five years for a variety of reasons (Mack, Mueller, Crotts and Broderick 2000). Service quality seminars are often introduced with statistics regarding the extensive negative word of mouth resulting from dissatisfied customers compared to many fewer positive referrals from those who are satisfied. The message is "Do everything we can to create delighted customers". While customer delight is the ideal, most organizations fail to realize 100% satisfaction. The multi-dimensional nature of the service encounter creates an environment where failure may often be the norm, not the exception.

A focus on service quality improvement is essential for firms to be competitive (Stevens, Knutson and Patton 1995, Parasuraman, Berry and Zeithaml 1991). In order to balance the need for defect-free service and the inevitability of failure, organizations must be pro-active in anticipating likely areas of failures/complaints as well as anticipating the appropriate responses for recovery. They must be swift in their response and must train and empower their employees to respond as well. While this is a large task, the opportunity cost is the risk of losing customers and generating negative word of mouth. Some of the questions to be asked are: What critical encounters/service failures cause a customer to leave a familiar hotel/resort and seek new ones? Which failures can be recovered from and which cannot? What are the costs involved?

Several studies have dealt with categorizing service failures as well as recovery strategies (Mack, Mueller, Crotts and Broderick 2000, Hoffman and Chung 1999, Hoffman et al 1995 and Kelly et al 1993). Using the incident/failure categories of Bitner et al (1990), Hoffman et al (1995) indicated a higher level of customer satisfaction with successful recovery. However, some failures have been shown to be too severe to retain a customer. In these cases, the effort management gives to recovery is not to win back the loyalty of the guest but to reduce their impulse to share the failure with others. Research has shown that a delighted guest will tell on average 10 other people about their delightful experience; while a dissatisfied guest will tell an average of 18 others. Moreover the ability to vividly to recall to other service failures can linger for years (Mack, Mueller, Crotts and Broderick 2000). In the case of extreme failures, a terrorist can be born where one dissatisfied guest can influence hundreds sometime thousands of others what a bad hotel or restaurant experience.

Beware of the Internet

The popularity of travel blogs represent what Baker and Green (2005) describe as the most explosive outbreak of information the world has ever seen since the creation of the internet. Originally designed as a way for people to comment on web pages (aka, web logs, weblogs, or blogs), blogs have become a leading form of consumer to consumer (C2C) information source (Schmallegger and Carson 2008, Zhoa, Fang and Whinston 2006). All the major travel internet booking systems such as Orbitz,

Travelocity, and Hotels.com all have blogs where consumer's can read guest comments before they buy. In addition blogs such as Yelp.com and TripAdvisor.com are totally dedicated to such C2C communications. TripAdvisor in particular reports that their site routinely receives more than 20 million individual sessions per week by consumers planning their next trip and wishing to gain recommendations from recent visitors. By reviewing postings on any of these sites, one will readily see that many companies assign personnel to monitor and respond to any negative postings to their property, in order to control or limit the effects of negative postings on future visitations.

Given that all blogging activities are created and consumed by bloggers, the two basic behavioral orientations are that of social interaction and information search (Kurashima, Tezuka and Tanaka 2005). In regard to why former guests contribute to blogs, Nardi, Schiano, Gumbrecht and Swartz (2005) found five basic motivations. They are to: document their life experiences; provide commentary and opinions; express deeply felt emotions; articulate ideas through writing; and to form and maintain community forums. While Huang et. al. (2007) believe these motivations can be intertwined with one another, none rise to the level of being consider unethical or slanderous especially on professionally managed travel blogs. In regard to consumers who seek and consume information from blogs, research has shown that these consumers consider travel blogs as credible as traditional word of mouth (Mack, Blose and Pan 2008).

Moreover, this form of digitized word-of-mouth communication is gaining in popularity. Perseus (2005) reported that there are 31.6 million blogs on the internet, growing by an estimated 40,000 per day (Huang, Shen, Lin and Chang 2007), receiving 1.6 million postings daily (Perseus 2005).

Using blog postings as measures of guest satisfaction has limitations not unlike other guest feedback methods. Guest comment cards are commonly completed by 1% -3% of guests. Often they are completed by either highly satisfied or highly dissatisfied guests.

In addition, the percentage of guests who complete and return guest satisfaction surveys can be low as well. Though the results must be treated with some reservation as to their ability to describe the average guest experience, they are an important feedback tool in gauging customer satisfaction.

PURPOSE OF THE STUDY

The purpose of this research was to identify the frequency of guests reporting the presence of pests encountered in 2008 at hotels, resorts and restaurants in the USA and the impact of those encounters on their loyalty (e.g., willingness to repeat purchase and recommend to others). In addition, the frequency of types of pests is isolated as well as what type of properties they are encountered is analyzed.

METHOD

The blog search function of Google.com (http://blogsearch.google.com) was employed for the needed data. These blogs were raked aided by software of 3,200,497 blog postings in 2008 that contained key words hotel, motel, resort, and restaurant limited to locations in the U.S. Next these blog postings were keyword searched for each type of pest including all word deviations (e.g., bed bug, bedbug, bed bugs). This procedure allowed for an assessment of the relative frequency of pests in the database.

Next, 500 blog narratives were randomly selected from those narratives containing each type of pest for language analysis (Crotts, Mason, Davis 2009). This procedure allowed the researchers to analyze how the type of pest would be correlated with loyalty intent (e.g., repeat patronage, willingness to recommend). In addition, for every narrative where a pest was encountered, a separate narrative on the same property was collected from the previous day, week or month where no pest was recorded to be able to isolate the unique effects on guest loyalty.

RESULTS

Hotels, Motels and Resorts

Some 85,210 of the 2.89 million individual blog postings contained at least one of twelve types of pests yielding an incidence rate of 1.47 percent. Approached from another perspective, greater than 1 in 100 blog postings evaluating U.S. hotels and resorts contained a pest in the narrative. Table 1 reveals the ratio of pests to total hotel/resort evaluations while figure 1 reveals the frequency of each pest type across 11 categories of pests. Though not all the categories are mutually exclusive with one another (vermin, pests, and insects) collectively they capture the encounters known guests had with pests.

The mention of bugs contributed most to the overall incident rate at greater than 1 in 100 (1.24%) of all blogs posted. More descriptive terms to describe the pest were a fraction of one percent. Nevertheless, the mention of more specific terms of flies represented 1 in 250 of all postings, followed by roaches and fleas at 1 in 500 postings (See Appendix Table 1). These findings should not be interpreted that 1 in 100 hotel guests encountered a bug in 2008. Instead 1 in 100 individual blog postings that rated a lodging property reported an encounter with a pest.

Figure 1: Frequency of Pests in Hotels
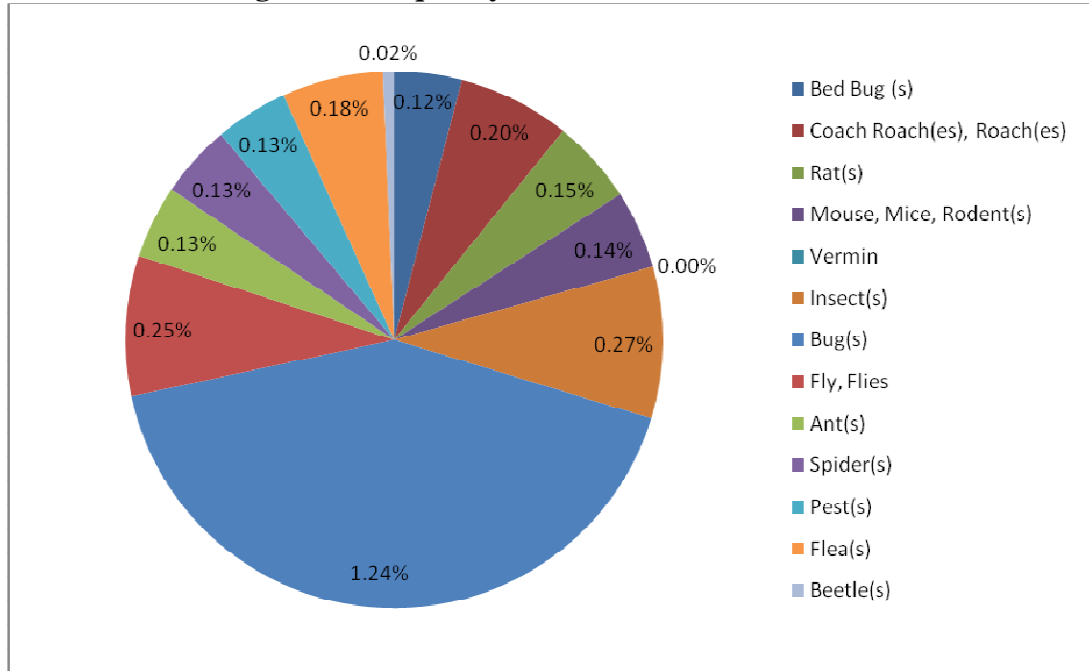
Analysis of the subsample of hotel and resorts revealed that 61.5% of pest mentions were at the unrated to one to two diamond/star properties, 27.3% at three diamond/star properties, and 11.1% at four to five diamond/star properties (Figure 2). Inferring from the subsample to the entire hotel/resort ratings blogsphere, 52,418 pests mentions occurred at unrated to two diamond/star properties, 23,327 at three diamond/star properties, and 9,465 at 4 diamond/star properties.

Figure 2: Frequency of Pest by Hotel Rating
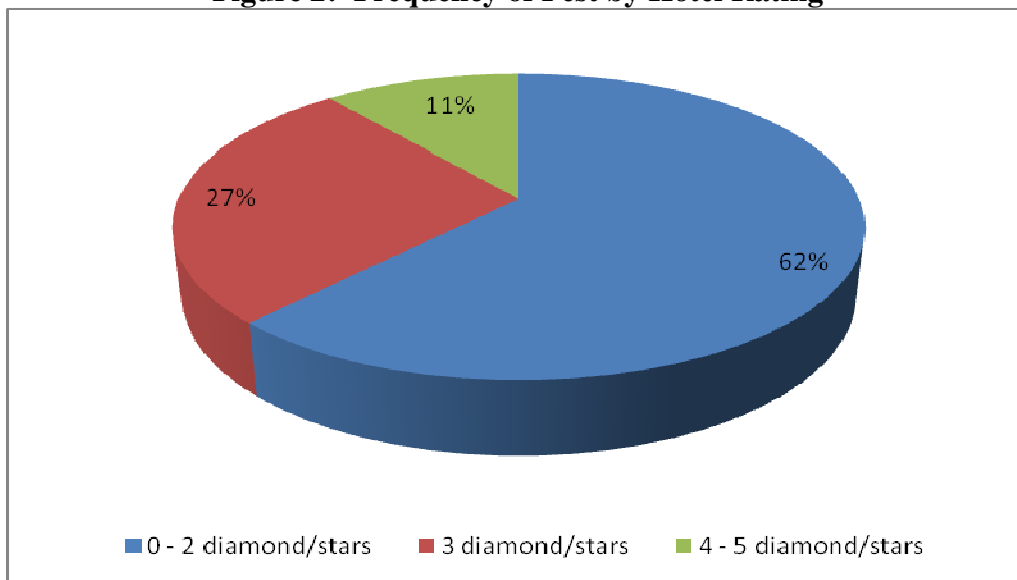
Though the data clearly reveals that no type of property is immune to infestations, the differences can be explained in two ways. First, the economy sector is the most prevalent type of hotels/motels in the US, followed by mid level and upscale, so one should expect a higher concentration in economy properties due to their sheer numbers. Secondly, close inspection of the narratives revealed that economy properties can be in need of renovations more so than mid to upscale properties. By virtue of AAA and Mobile Club quality standards, properties in need of extensive renovations will have difficulty holding on to their 3 to 5 diamond/star ratings.

Impact of Pest Infestations on Hotels/Resorts' Guest Loyalty

A closer inspection of these 400 narratives revealed that guests who posted blogs were not mentioning a single ant, beetle or fly suggesting that most guests are guests have a reasonable tolerance for pests. Ants, flies, insects and fleas were all plural suggesting some level of infestation. However the presence of a single cockroach, bed bug, rat, mouse, or spider garnered the same negative reaction as multiple pests indicating low tolerances for these pests. Rat or mouse excrement evoked the same negative reactions as well. Virtually all of these infestations were reported being indoors – in the guest rooms, hotel common areas, or food and beverage areas.

These same narratives were analyzed for language features to determine the willingness of the guest to stay again (repeat purchase) and/or recommend to others. A series of cross tabulations were performed on the infestation type on these loyalty measures (See Figure 3). In all but one case, guests reported zero tolerance for all pests. In this one case, the blogger noted a high outbreak of flies at a river front 3 diamond hotel that negatively impact the guests from taking walks and lounging at the pool, but considered the incident was outside the control of management and that it would not impact their decision to come again.

The strong measurable effect of any pest regardless of hotel type is significant and without counterparts in the service failure and recovery literature. In these cases, the infestations were virtually all reported to management and still the recovery strategy (e.g., apology, switching the guest to another room, discount, refund) had no effect on their loyalty. Unlike a rude employee, a meal served cold, or a broken air conditioner, observing a pest was deemed a failure that management could not overcome. The presence of pests in a single room casts a shadow over an entire property that the entire facility is unclean or unhealthy.

Figure 3: Impact of Infestation of Guest Loyalty:
Will stay again or recommend to others
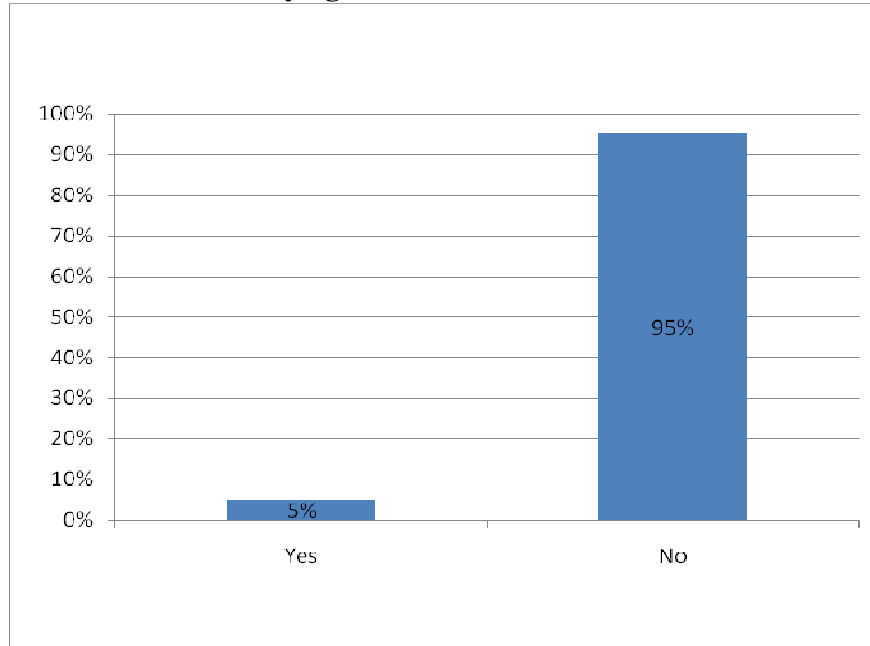
As planned a second narrative from each property was drawn from the available blogs to determine if the presence or lack of a pest sighting was the sole cause of the poor loyalty measures. Care was taken to select a blog posting on each property that pre-dated by a day, week or month the blog posting where a pest was found to limit the potential of a hotel's management posting a deceptive evaluation to counter the negative evaluation. The analysis of these cases was conducted by the type of hotel or resort.

Among blog contributors who reported no pests while staying at the same 4 to 5 diamond/star hotel and resorts, a high 92.7% were characterized as loyal (e.g., either strong repeat purchase intent and/or willingness to recommend). This provides evidence that these upscale properties deliver an excellent guest experience, but one whose ability to drive loyalty is dependent on maintaining a pest free environment.

Similar but less robust results were produced from the analysis of three diamond/star properties. Without the presence of pests, these properties garnered loyalty from 74.7% of their guests; with the presence of pests the loyalty measure was reduced to less than 1%.

Regarding the unrated to 1 to 2 diamond/star properties; the results indicated that these properties have much room for improvement. In the cases without pests, the loyalty measures were 48.4%. Nevertheless, where pests were reported loyalty was reduced to an absolute 0%.
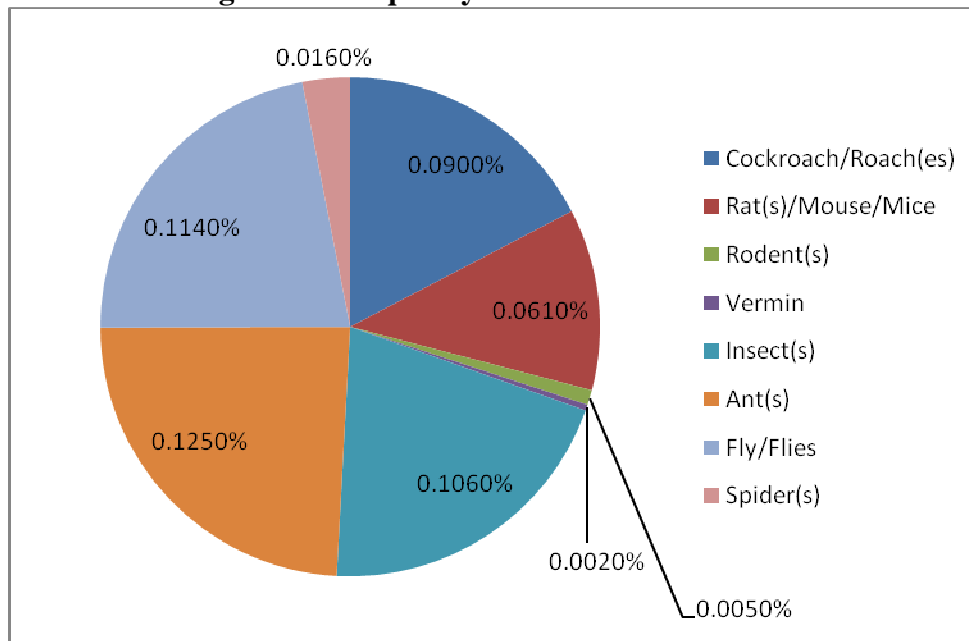
Restaurants

An analysis of 302,499 blog narratives on U.S. restaurants revealed the incidence rate of individual blog postings of pests in restaurants was lower than lodging establishments. In all, 5 in 1,000 (.005%) of restaurant postings contained encounters with one of eight types of pests, which is approximately three times lower (.0147%) than that of lodging establishments (see Appendix Table 2).

The incidence of restaurants may seem low except that:
- Pests in restaurants are more often found in the back of the house where they are not always visible to guests; and
- Restaurants by law are required to pass health and sanitation inspections that are focused on pests and the contamination hazards, heading off such problems often before they become visible to restaurant patrons in the front of the house.

Ants (.0013%), flies (.001%) and insects (.001%) were the most frequently encountered pests and tend to trace to dining outdoors (See Figure 4). In these situations customers were not complaining about a single ant or fly, but an infestation of pests from their perspective are out of control.

Figure 4: Frequency of Pests in Restaurants

**Impact of Pest Infestations on Guest Loyalty to Restaurant**

When a pest is encountered by a restaurant guest, the overwhelming majority (87%) would not dine again nor recommend the restaurant to others. This rejection for pests is 62% greater than if no pest was detected (See Figure 5).

Figure 5: Impact of Infestation on Guest Loyalty: Will dine again or recommend restaurant after encountering a pest
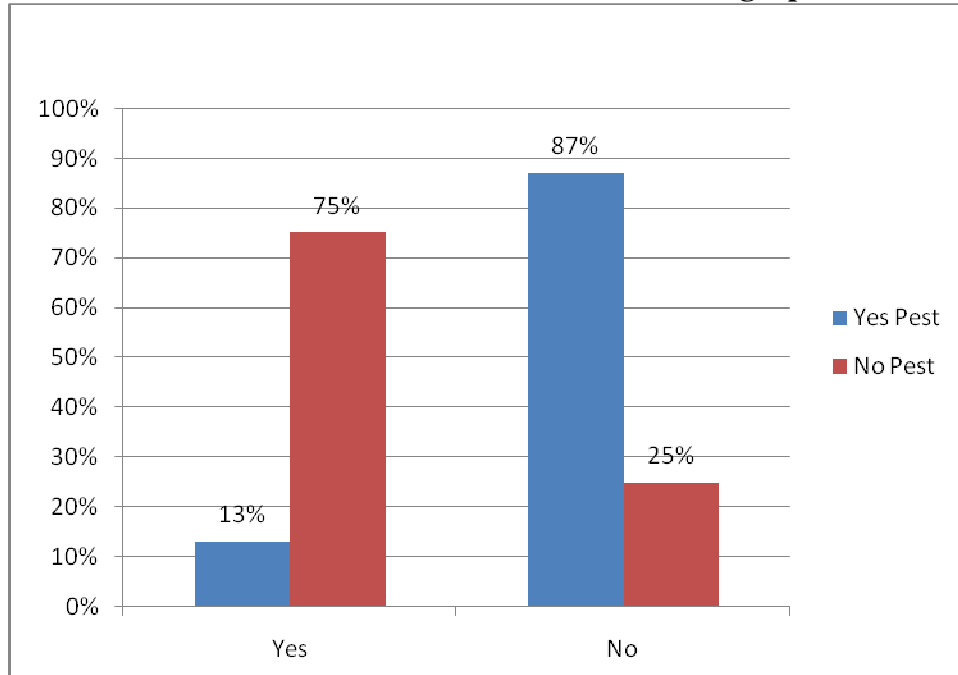

For those guests that went on to recommend a restaurant after reporting a pest (13% of the sample); observing a roach (43%) or ants (36%) did not deter their willingness to dine again or recommend (See Figure 6). Anecdotally, if the pests are not in close proximity to the guest's table or in unavoidable direct view (i.e., on the wall), then they were forgiving. That is, if the restaurant was outstanding in other areas such as food, service, ambiance, the service failure was recoverable.

**Figure 6: Loyalty to Restaurant after Encountering Pest by Type**
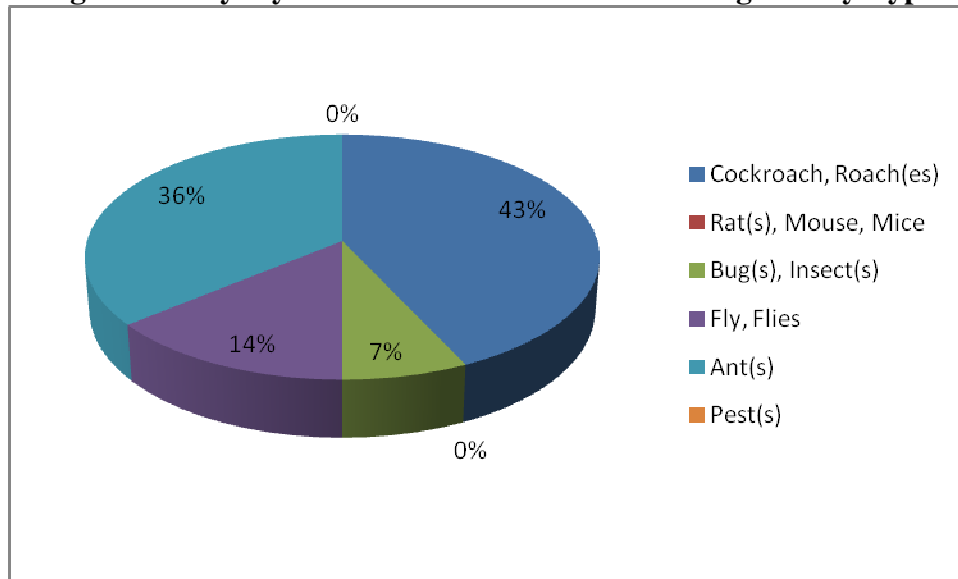
Regardless of the expensiveness of the restaurant, when a pest is present the potential for a positive recommendation was severely diminished. Interestingly, while not statistically significant, guests dining at the most expensive restaurants appear to be a little more tolerant than those eating at the lesser ones (See Figure 7). Again, this tolerance may stem from the exceptional food, service and ambience that are emphasized by the fine dining restaurants, and that, at times, will help them recover from a single critical incident (e.g., encounter with a pest).

Figure 7: Guest Restaurant Loyalty: Would recommend by expensiveness after encountering a pest
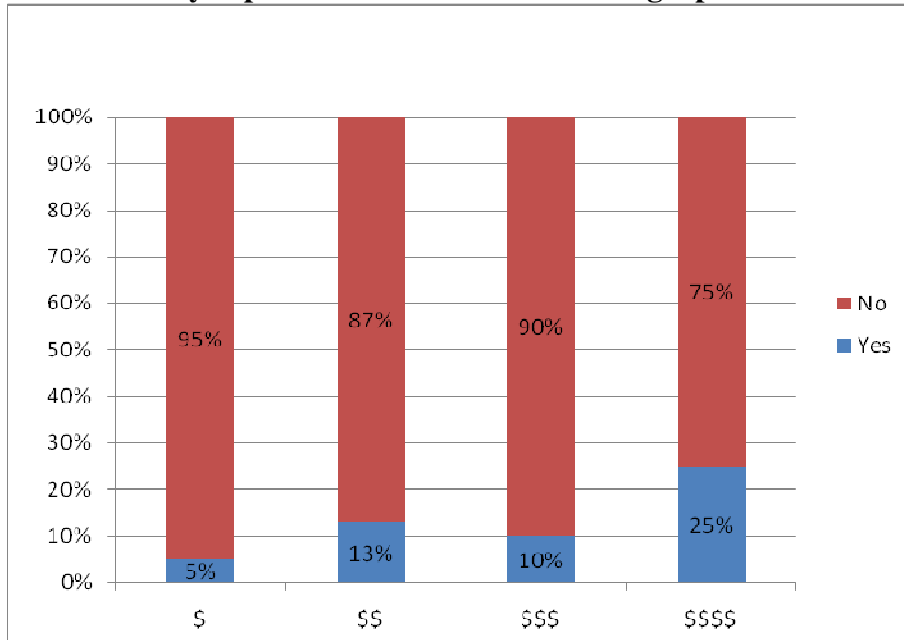
Nevertheless, when a pest is encountered, the willingness of a restaurant patron to dine again and recommend to others is diminished by more than 50 percent regardless of the quality of the food, service, and surroundings (Compare Figure 7 and 8).

Figure 8: Customer Restaurant Loyalty: Would recommend by expensiveness when no pest is encountered
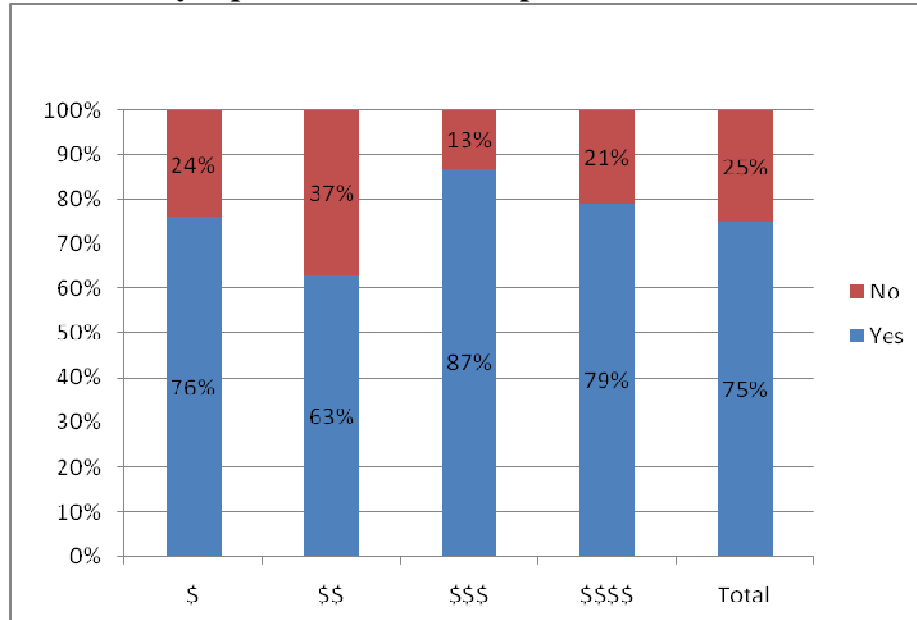
UNDER THE NUMBERS LOOKING AT STANCE AND SEMANTICS

Stance is the continuous, emotional or evaluative use of language, keyed to the patterning of value-laden words and arrangements of different parts-of-speech. Stance analysis allows us to identify writers/speakers' affect, intensity, and certainty toward a topic; *their stance signals their emotional reaction to content being discussed.* Stance analysis methodology charts the ways speakers or writers shift their stance on issues by taking responsibility for their opinions, "owning" their feelings, and giving personal reasons for their opinions and intended actions.

We add a second step by analyzing semantic concepts in those segments of the reviews in which the writer expressed a high degree of stance. This step categorizes words into key concepts to isolate salient reviewer thoughts toward the hotel or restaurant under review. The approach identifies the larger, overall important themes in the narratives.

The analysis –pest versus no pest
Bloggers who posted evaluations of hotels and restaurants without pests were significantly more likely to mention dining, meals, and specific foods, as well as significantly more likely to use praise- and delight-words *(great, terrific, good)*. Those that were impacted by pests referred to disease, to what diners/vacationers saw – waste, garbage, living creatures (insects, vermin) moving about where they should not have been, and their immediate dislike.

Blog entries about both hotels and restaurants without pests were also significantly more likely to use personal names, generally pinpointing locations, and the pronoun *"you."*

Generally *"you"* serves the purpose, either to mark an opinion by the writer or to draw increased attention to a situation or experience by personalizing it to the reader. The significance of "*you*": when people say things like 'you've gotta get this' or 'you're gonna want this for sure' they mean a weak form of *I* as providing an opinion in that *I* want this or *I*'m hoping to get this. This form of "*you*" was significantly more frequently used by reviewers about hotels and restaurants without pests.

When the reviewers of hotels and restaurants with pests used "*you*" in their narratives, it was to more specifically accentuate the encounter with the pests and vermin. In short, they were not providing opinions as much as dramatically highlighting information; the presence of a pest.

An example from hotels with pests:
> *It's not a visit to NYC unless you run into some ghastly bugs or vermin*

An example from restaurants with pests:
> *Something crawling from the kitchen. You guessed it, it's a rat!*

While praise-words are typically used to tell a generic story of pleasure, the words in entries mentioning pests and vermin are used to tell a specific story of blame and disgust involving flies, rats, insects, bugs, and most frequently, roaches.

Disgust is not too strong a word to characterize writer reactions: the stance of an emotional response or affect takes on a much stronger and proportionately more frequent role in distinguishing writings about hotels and restaurants with pests, from those which are vermin-free, using words such as *awful, dirty, disgusted, sh***y, disgusting* and *horrible/horribly.* Such words generally lead into statements such as:

> *Doesn't matter though, I'm never going back. And I'd warn you not to even bother.*

Customers reported that they were slightly mollified by efforts of hoteliers and restaurateurs, who apologized, changed tables, brought free food, but were still reluctant to eat the food or to return; customers in situations where the management denied the presence of an insect wrote repetitive, angry sentences, emphasizing their affect for the reader.

What about the ways the stances shifted in the two sets of blogs, those about places with pests and those about places without them? How does the story change?

- Blog entries for restaurants <u>without</u> pests spend their energy on giving elaboration to explain their opinions: X has a "charming atmosphere," Y used to have great burritos but now the menu has changed. An emotional response or affect is seldom invoked, and when the stance does change from giving opinions and rationales to signaling affect, it is in the spillover from reporting the restaurant as a high point in a wonderful day as a tourist – weather, destinations, and events were all great, and the meal topped it off.

- Blog entries for hotels <u>without</u> pests again spend their energy on giving elaboration to explain their opinions, but they are more critical: at the outset of the trip, the décor sets a tone; at the end of the day, the writer is tired, and ready to sink into palatial comfort which is not always at the expected level.
- Blog entries for restaurants <u>with</u> pests show a great deal of emotion and are highly specific in explaining their reaction, which is on a scale ranging from negative concern to outright revulsion. The entries also become quite specific, as they focus on details that would have enticed the pests or vermin: floors, tabletops, grease, food-handling procedures are all cited: the writer wants the reader to understand and feel the same affect and shun the eatery.
- Blog entries for hotels <u>with</u> pests not only show a great deal of affect, they move to urgency more than any of the other kinds of entries, to make promises that the writers will never return and will do their best to warn potential customers, with frequent use of exclamation marks and all-caps Letters (i.e. the writers splutter their anger and dismay).

While they are strongly repelled by bugs near food, and outraged by protests or denials from management, there is some natural connection between the two, and in general, customers are even more appalled by pests and vermin in sleeping quarters, because that situation is, in their opinion, something that could be taken care of by regular housekeeping maintenance.

Hotels

Figure 9 shows concepts that were mentioned in the reviews in which there is a significant difference between guests who encountered a pest and those that did not have the same experience. The pest encounters lead to a narrative that pinpoints where they encountered the pest and their immediate reaction to it, including their physical reaction which describes bites on arms and legs, illness and the general fear of the pest returning after the lights are turned off. Guests typically imply they will not return in the future and, in many instances, pointedly state they will not come back and warn others not to consider the hotel as well. With respect to cost and price, the discussion then focuses on refunds or discounts stemming from the pest incident.

Figure 9: Hotel reviewer themes by pest encounter
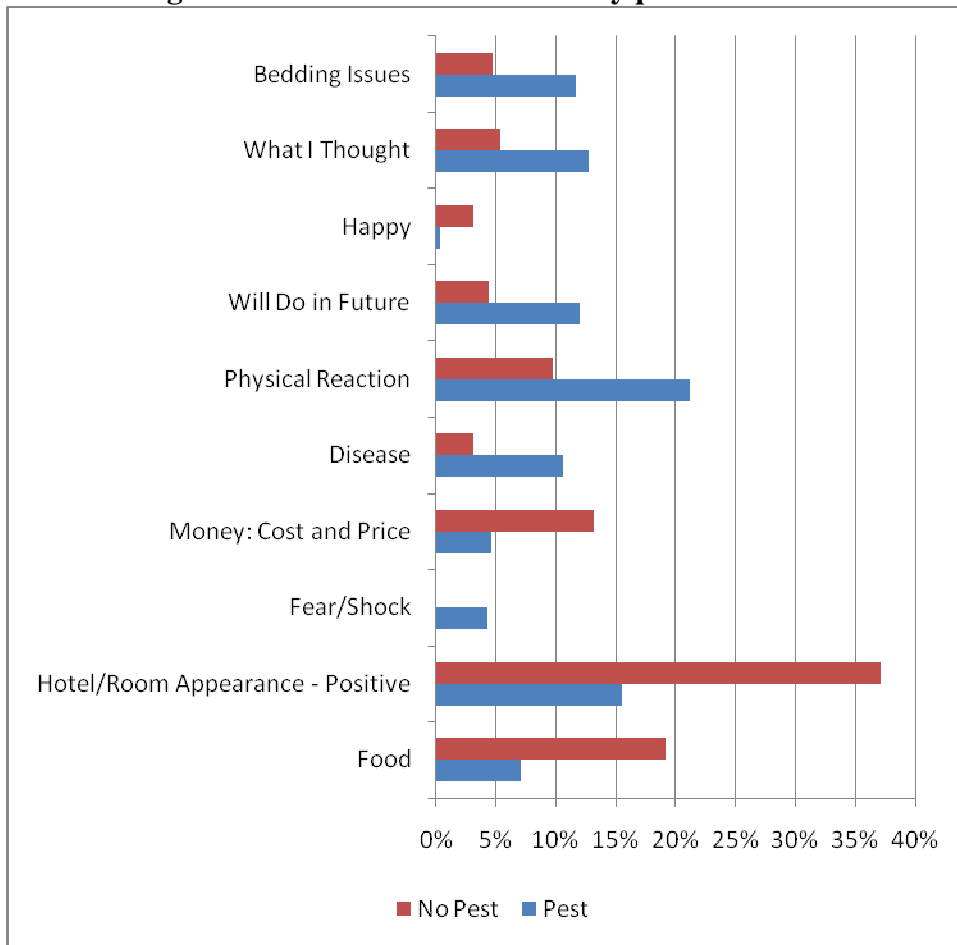
Those guests who did not encounter a pest at the same hotel were more likely to have a positive impression of the property and the their room. Additionally, they speak about the restaurant and food service facilities that are part of the hotel. Unlike their counterparts that focuss mainly on the pest incident which colors their whole experience. Price and cost emerge from these reviews with respect to whether the hotel met their expectations for the amount the guest paid.

Figure 10 shows those reviewers who did not encounter a pest exhibited greater opinions in their more frequentuse of the 1st and 2nd person pronouns of *"I"* and *"you"*. Those that did have a pest incident, through the use of 3rd person pronouns, i.e., *"they", "it",* etc. focussed on what spoiled their experience with more explanation and less opinion.

Figure 10: Hotel reviewer opinion strength by pest encounter
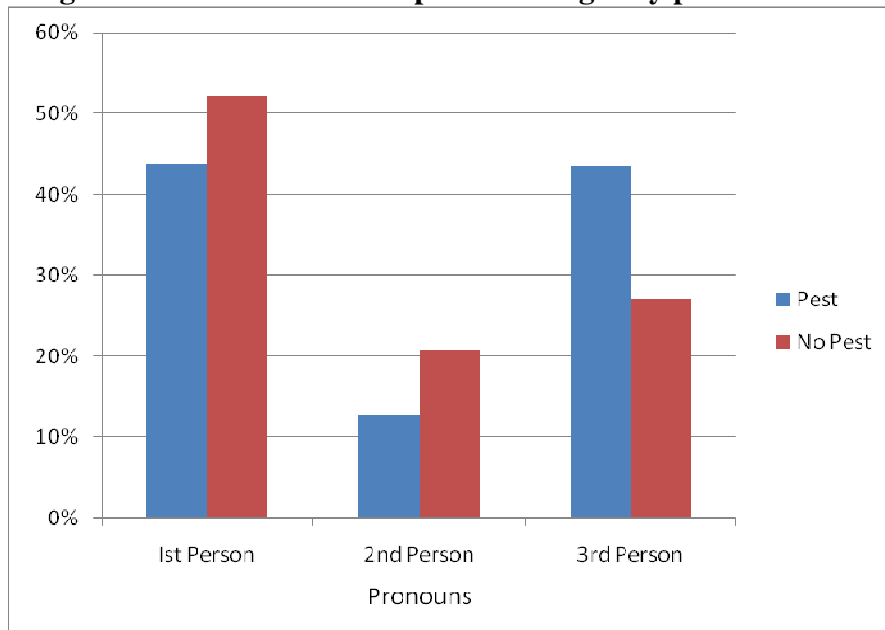

Restaurants

    The diners that encountered a pest at a restaurant described its phyiscal movement, i.e., crawl, scurry, etc., in extreme terms and its appearance (Figure 11). Typically the restaurant personnel became involved with the incident. However, in a few cases, the reviewer gave a positive review minimizing the impact of the pest. This situation appears to ocurr when the insect is not in close proximity to the diner, at high-end establishments and in which otherwise the experience was well beyond expectations.

Figure 11: Restaurant reviewer themes by pest encounter
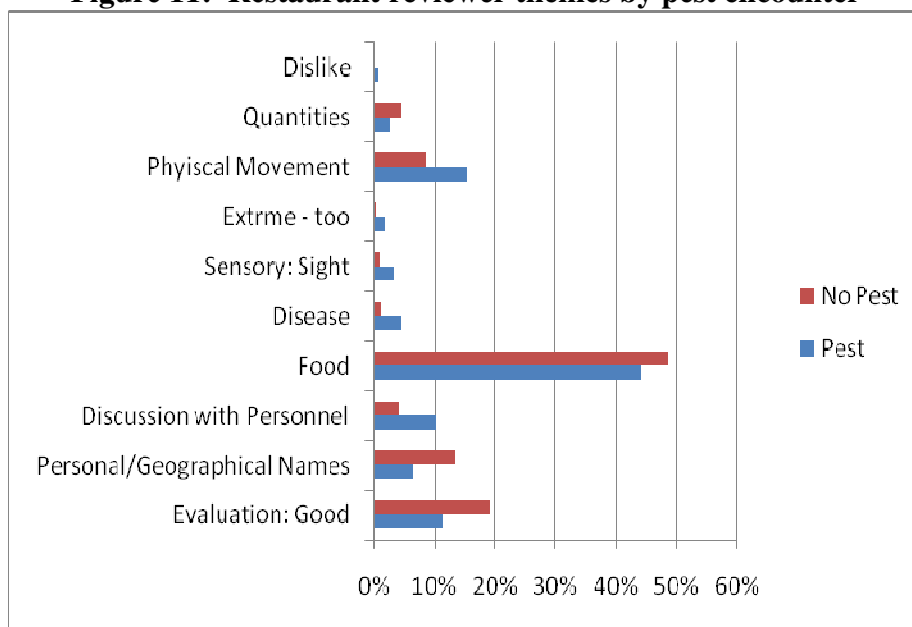
Those customers that did not come across a pest, had more to say about the meal and more likely to provide a positive evaluation of their dinning experience (Figure 12). As noted earlier, those diners not describing a pest incident are providing a more engaged opinion about the meal in their use of the 2nd person pronoun *"you."* Unlike the hotel guests, those confronted by a pest take a greater personalization of the situation as reflected in the 1st person pronoun *"I"* and fingerpointing with 3rd person *"they."*

Figure 12: Restaurant reviewer opinion strength by pest encounter
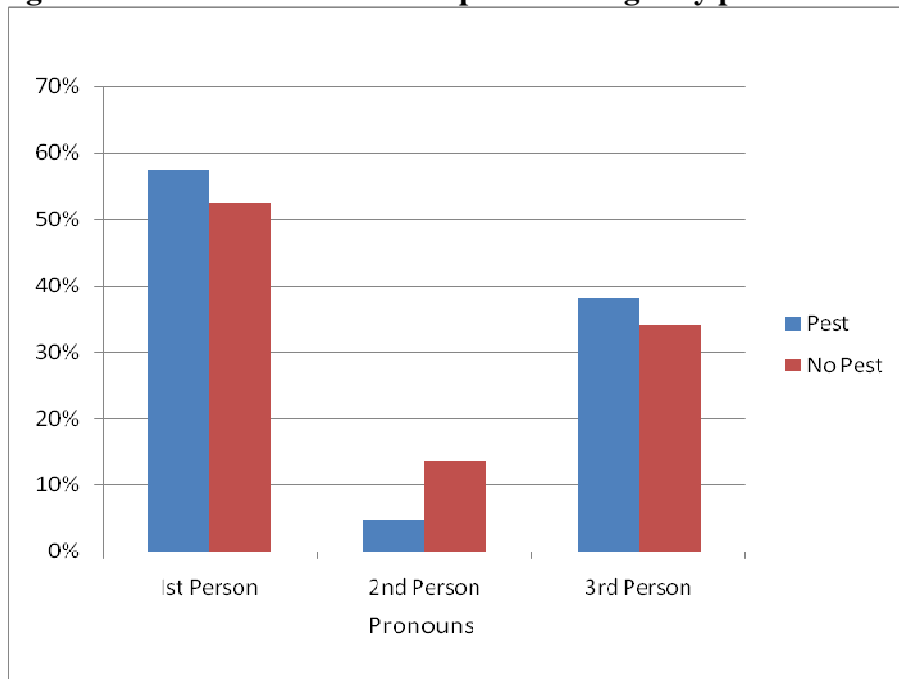
CONCLUSION

Most new businesses start with some great advantages in the marketplace. Those advantages might include bringing to the market a new product known to work in other location, a great price-quality value, a beautiful facility, and/or a great location. But can the organization create a guest experience that keeps customers coming back and recommending the hotel, resort or restaurant to their friends and relatives? That ultimately is what separates one's firm from the competition.

To earn guest loyalty management must perform well in the basic hygiene factors. Offering guests a pest free environment is a basic factor that will not improve guest satisfaction or loyalty. However failing to provide such an environment will have a significant and measurable negative effect that in nearly all cases cannot be recovered. Disgust is not too strong a word to characterize consumer reactions to a pest in a hotel, resort or restaurant. The best way to describe guest reaction to pests is zero-tolerance.

REFERNCES

Baker, S. and H. Green (2005). Blogs will change your business. *Business Week,* Vol 39 (31), 56-67.

Crotts, J., P. Mason and B. Davis (2009- in print). Measuring Guest Satisfaction and Competitive Position: An Application of Stance Shift Analysis of Blog Narratives. *Journal of Travel Research,* Vol 48(3).

Crotts, John and R. Ford (2008). Achieving service excellence by design: The organizational alignment audit. *Business Communications Quarterly*, Vol. 71 (2), 233-240.

Crotts, J., B. Pan and A. Raschid (2008). A survey method for identifying key drivers of customer delight. *International Journal of Contemporary Hospitality Management*, Vol. 20 (4), 462-470.

Fuch, M. and K. Weiermair (2004). Destination benchmarking: An indicator system potential for exploring guest satisfaction. *Journal of Travel Research*, Vol. 43(1), 212-225.

Fuch, M. and K. Weiermair (2003). New perspectives on satisfaction research in tourism destinations. *Tourism Review*, Vol. 58(3), 6-14., 2004

Gundersen, M. M. Heide and U. Olsson (1996). Hotel guest satisfaction among business travelers. *Cornell Hotel and Restaurant Administration Quarterly,* Vol. 37 (2,) 72-81.

Hoffman, K. D. and Chung, B.C. (1999), "Hospitality Recovery Strategies and Customer Preference Versus Firm Use," *Journal of Hospitality and Tourism Research*, Vol. 23(1), 71-84.

Hoffman, K. D. Kelley, S. W. and Rotalsky, H. M. (1995), "Tracking Service Failures and Employee Recovery Efforts," *Journal of Services Marketing*, Vol. 9 (2), 49-61.

Huang, C.Y., Y. Shen, H. Lin, and S. Chang, (2007). Bloggers' motivations to blog: A model. *Journal of Advertising Research*, Vol. 45 (4), 472-484.

Kurashima, T., T. Tezuka and K. Tanaka (2005). *Toward tighter integration of web search with a geographic information system.* Proceedings of the 15th international conference on World Wide Web, Edinburgh, Scotland. http://portal.acm.org/citation.cfm?id=1135777.1135821

Kelly, S. W., Hoffman, K. D., and Davis, M. A. (1993). A typology of retail failures and recoveries, *Journal of Retailing*, Vol. 69(4), 429-451.

Lord, V., B. Davis and P. Mason (2008). Stance-shifting in language used by sex offenders: Five case studies of assignment of responsibility. *Psychology, Crime and Law,* Vol. 14 (4).

Maclagan, M. and P. Mason (2005). Bad times and good times: lexical variation over time in Robbie Walters' speech. *Alzheimer Talk, Text and Context* , ed. Boyd Davis. NY: Palgrave Macmillan.

Mack, R., J. Blose, and B. Pan (2008). Believe it or not: Credibility of blogs in tourism. *Journal of Vacation Marketing,* Vol. 14 (2), 133-144.

Mack, R., R. Mueller, J. Crotts and A. Broderick (2000). Perceptions, corrections and defections: Implications for service recovery in the restaurant industry. *Managing Service Quality*, Vol 10 (5).

Mason, P. and B. Davis (2007). More than the words: Using stance-shift analysis to identify crucial opinions and attitudes in online focus groups. *Journal of Advertising Research,* Vol. 47 (4), 1-11.

Mason, P., B. Davis and D. Bosley. (2005). Stance Analysis: Social Cues and Attitudes in Online Interaction. *Innovations In E-Marketing* II, S. Krishnamurthy, ed. Hershey: PA: Idea Group.

Matzler, K. and E. Sauerwein (2002). The factor structure of customer satisfaction: An empirical test of the importance-performance grid and the penalty-reward-contrast-analysis. *International Journal of Service Industry Management*, Vol. 13(4), 314-332.

Nardi, B., D. Schiano, M. Gumbrecht and L. Swartz (2005). Why we blog. *Communications of the ACM,* Vol. 47(12), 41-46.

Parasuraman, A. Berry, L. L., and Zeithaml, A. (1991). Refinement and reassessment of the SERVQUAL scale. *Journal of Retailing*, Vol. 67 (4), pp. 420-50.

Parasurman, A., V. Zeithaml and L. Berry (1988). SERVQUAL: A multi-item scale for measuring consumer perceptions of service quality. *Journal of Retailing,* Vol. 64(1), 12-40.

Parasurman, A., V. Zeithaml and L. Berry (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing,* Vol. 49 (4), 41-50.

Perseus (2005). The blogging geyser. Retrieved November 1, 2005 www.perseus.com/blogsurvey/geyser.html

Pizam, A.and T. Ellis (1999). Customer satisfaction and its measurement in hospitality enterprises. *Internal Journal of Contemporary Hospitality Management,* Vol. 11 (7), 326-339.

Pizam, A., Y. Neumann and A. Reichel (1978). Dimensions of tourism satisfaction within a destination. *Annals of Tourism Research,* Vol. 5 (3), 314-322.

Schmallegger, D. and D. Carson (2008). Blogs in tourism: Changing approaches to information exchange. Journal of Vacation Marketing, Vol. 14 (2), 99-110.

Stevens, P., Knutson, B. and Patton, M. (1995). DINESERV: A tool for measuring service quality in restaurants. *The Cornell Hotel and Restaurant Administration Quarterly*, pp. 56-59.

Zhoa, X., F. Fang and A. Whinston (2006). Designing online mediation services for C2C markets. *International Journal of Electronic Commerce,* Vol. 10 (3), 71-93.

ABOUT THE RESEARCHERS

Peyton Mason, Ph.D., started Linguistic Insights, Inc. in 1999. The business premise is that capturing valuable insights gained directly from consumers' words is the key for successful development and marketing of products and services. He takes a quantitative approach to the analysis of consumers' language. This approach comes from over twenty years of market and new product research experience. He previously managed new product development and consumer research for Bank of America, Lipton (Unilever), Anheuser-Busch and Kellogg's. His formal educational background in sociological survey research has trained him well in the application of multivariate statistical techniques to marketing issues.

John Crotts, Ph.D., is a Professor of the Department of Hospitality and Tourism Management at the College of Charleston. Prior to this position, he lectured in the Advanced Business Programme on tourism subjects at Otago University, Dunedin, New Zealand and was Director of the Center for Tourism Research and Development at the University of Florida. His research encompasses the areas of economic psychology, tourism marketing and sales strategy, and management of cooperative alliances. In 2000 the Travel and Tourism Research Association recognized him as one of five stars in tourism research worldwide. In 2004 and 2007, John was ranked in the top 20 of scholars worldwide for his published research productivity. In addition to serving as the founding editor of the International Journal of Culture, Tourism & Hospitality Research and the International Journal of Hospitality and Tourism Administration, he also serves on the editorial board of the Journal of Travel Research, the Journal of Travel and Tourism Marketing, the Journal of Hospitality and Tourism, the Journal of Teaching Travel and Tourism and the Scandinavian Journal of Hospitality and Tourism Management.

APPENDIX I

Table 1: Frequency of Pests Mentioned In Blogs Rating Hotel and Resorts

Pest	# of Blog Narratives	% of Total 2,897,998 blogsphere	Frequency
Bed Bug (s)	3,651	.0012	Greater than 1 in a 1,000 blog postings reported bed bugs
Cockroach(es), Roach(es)	5,798	.0020	1 in 500
Rat(s)	4,597	.0015	1 in 750
Mouse, Mice, Rodent(s)	4,032	.0014	Greater than 1 in 1,000
Vermin	198	.0000	Less than 1 in 1,000
Insect(s)	7,849	.0027	Greater than 1 in 250
Bug(s)	36,002	.0124	Greater than 1 in 100
Fly, Flies	7,463	.0025	1 in 250
Ant(s)	4,026	.0013	Greater than 1 in 1,000
Spider(s)	3,977	.0013	Greater than 1 in 1,000
Pest(s)	1,855	.0013	Greater than 1 in 1,000
Flea(s)	5,202	.0018	Nearly 1 in 500
Beetle(s)	560	.0002	Less than 1 in 1,000
Total	85,210	.0147	Greater than 1 in 100

Table 2: Frequency of Pests Mentioned in Blogs Rating Restuarants

Pest	# of Blog Narratives	% of Total 302,499 Blogsphere	Frequency
Cockroach/Roach(es)	273	0.0009	Nearly 1 in 1,000
Rat(s)/Mouse/Mice	184	0.00061	6 in 10,000
Rodent(s)	15	0.00005	5 in 10,000
Vermin	7	0.00002	1 in 50,000
Insect(s)	320	0.00106	Greater than 1 in a 1,000
Ant(s)	379	0.00125	Greater than 1 in a 1,000
Fly/Flies	345	0.00114	Greater than 1 in a 1,000
Spider(s)	48	0.00016	Greater than 1 in 10,000
Total	1,571	0.0052	Greater than 5 in 1,000

Figure 1: Hotel Frequency of Pests

Pest	# of Blog Narratives	% of Total 2,897,998 blogsphere
Bed Bug (s)	3,651	.0012
Cockroach(es), Roach(es)	5,798	.0020
Rat(s)	4,597	.0015
Mouse, Mice, Rodent(s)	4,032	.0014
Vermin	198	.0000
Insect(s)	7,849	.0027
Bug(s)	36,002	.0124
Fly, Flies	7,463	.0025
Ant(s)	4,026	.0013
Spider(s)	3,977	.0013
Pest(s)	1,855	.0013
Flea(s)	5,202	.0018
Beetle(s)	560	.0002
Total	85,210	.0147

Figure 2: Frequency of Pest by Hotel Rating

Hotel Rating	Pest Presence Mentioned	%	Frequency of pests were in hotels/resorts in 2008 blogsphere
No to 2 diamond/stars	454	62	52,418
3 diamond/stars	202	27	23,327
4 diamond/stars	82	11	9,465
Total	738	100	85,210

Figure 3: Impact of Infestation on Hotel Guest Loyalty

Pest	Will stay again or recommend to others	Will not stay again or recommend to others
Bed Bug (s)	0%	100%
Cockroach(es), Roach(es)	0%	100%
Rat(s)	0%	100%
Mouse, Mice, Rodent(s)	0%	100%
Vermin	0%	100%
Insect(s)	0%	100%
Bug(s)	0%	100%
Fly, Flies	5%	95%
Ant(s)	0%	100%
Spider(s)	0%	100%
Pest(s)	0%	100%
Flea(s)	0%	100%
Beetle(s)	0%	100%
Total	0%	100%

Figure 4: U.S. Restaurant Pest Infestation Incidence

Pest	# of Blog Narratives	% of Total 302,499 Blogsphere
Cockroach/Roach(es)	273	0.0009
Rat(s)/Mouse/Mice	184	0.00061
Rodent(s)	15	0.00005
Vermin	7	0.00002
Insect(s)	320	0.00106
Ant(s)	379	0.00125
Fly/Flies	345	0.00114
Spider(s)	48	0.00016
Total	1,571	0.0052

Figure 5: Impact of Infestation on Restaurant Customer Loyalty

Recommend restaurant after encountering pest N=100

Pest Encounter	Yes	No	Total
Yes Pest	13%	87%	100%
No Pest	75%	25%*	100

    * Not recommended due to food, atmosphere, service, price, etc.

Figure 6: Loyalty to Restaurant After Encountering Pest by Type N=14

Pest	Yes
Cockroach, Roach(es)	43%
Rat(s), Mouse, Mice	0
Bug(s), Insect(s)	7
Fly, Flies	14
Ant(s)	36
Pest(s)	0
Total	100

Figure 7: Willingness to Dine Again and Recommend Restaurant by Expensiveness
After Encountering a Pest N=100

Expensiveness	Yes	No	Total
$	5%	95%	100%
$$	13	87	100
$$$	10	90	100
$$$$	25	75	100

Figure 8: Recommend Restaurant by Expensiveness
When No Pest is Encountered N=100

Expensiveness	Yes	No	Total
$	76%	24%	100%
$$	63	37	100
$$$	87	13	100
$$$$	79	21	100
Total	75	25	100