The Relationship among Transformational Leadership Style, Marketing Resources & Capabilities & Performance for Intr. Tourist Hotels in Taiwan 3

"A STUDY OF FACTORS INFLUENCING INCREASING ATTRITION RATE IN HOTELS OF PUNE, ITS IMPACT ON THE ORGANIZATION AND MEASURES UNDERTAKEN BY THE HOTELS TO CURB THE ATTRITION RATE."

Milind A. Peshave Asst. Professor, AISSMS's College of HMCT, Pune E.mail: peshave.m@gmail.com

Dr. Rajashree Gujarathi

Professor, Sinhgad Institute of Business anagement, Mumbai E.mail: rajashreegujarathi@gmail.com

ABSTRACT

The hotel industry of Pune has been evolving since long. The competition in the industry is fierce and every brand is putting their best foot forward by providing "Service par Excellence" to their guests to increase their market share and this is where the hospitality sector differentiates itself from others. Hotel industry is a part of Service industry and is characterized by the intangible nature of its product i.e. "Service". Unlike the tangible products produced by other industries, the quality of "Service" cannot be standardized through machines because there is a Human factor that is involved in producing & consuming of service. Thus, in the hotel industry the human element is of utmost importance. The industry aims at channelizing their human resources towards attainment of their objectives and the major challenge faced by the industry today, is the raising attrition rate of its employees.

This study is aimed at analyzing the facts pertaining to the issue of increasing attrition rate in the hotels of Pune city. In an effort to do so, a survey in the form of a questionnaire and interviews was conducted from the sample comprising of employees of hotels in Pune to understand their views on the subject. The responses received were represented graphically and analyzed using basic percentage and chi square tools.

The findings of his research suggests that: Long working hours and low salaries are the major factors that affect the attrition rate in hotels which has a great impact on customer satisfaction and reputation of the hotel. The Although the hotel industry is concerned with the increasing attrition rate in the industry and have designed various policies to curb the same, they are not found to be sufficiently effective in dealing with the problem.

INTRODUCTION

The hotel industry of Pune has been evolving since long. The situation was very different in the earlier days when Pune had just one or two five star hotels and a few budget hotels. The clientele in those days was restricted to major business tycoons who utilized the services of these hotels to entertain their corporate guests. However, today the city is flooded with hotels and almost all major Hotel brands have their presence in the city and their clientele is quite diverse in nature. With the evolution from the city's "conservative and culture bonded" image to a more "sophisticated and

industrialized" image of today, plenty of industries flourished in the city. This made way for the emergence of a full-fledged hotel industry in Pune. The competition in the industry is fierce and every brand is putting their best foot forward by providing "Service par Excellence" to their guests to increase their market share and this is where the hotel sector differentiates itself from others. Hotel industry is a part of Service industry and is characterized by the intangible nature of its product i.e. "Service". Unlike the tangible products produced by other industries, the quality of "Service" cannot be standardized through machines because there is a Human factor that is involved in producing & consuming of service. Thus, in the hotel industry the human element is of utmost importance. The industry aims at channelizing their human resources towards attainment of their objectives and the major challenge faced by the industry today, is the raising attrition rate of its employees.

"Attrition rate, in its broadest sense, is a measure of the number of individuals or items moving out of a collective over a specific period of time. It is one of two primary factors that determine the steady-state level of customers a business will support."*

Attrition rate (%) = Number of employees resigned for the month/ (Total number of employees at the start of the month + Number of employees joined for that month - Number of employees resigned) x 100* (*Source: Wikipedia)

The industry has become quiet responsive to this challenge of Attrition and the Human Resource Department of the hotels are taking conscious efforts to curb the attrition rate.

LITERATURE REVIEW

Sunil Panwar, (2012) examined the reasons, why the employees are not able to cope up with the industry environment. A survey was conducted of different hotel employees and observed that most of the employees want to be work in other Service oriented industries such as Airlines, Tourism, Retail and Financial services. Monetary Compensation and long working hours are the two areas of dissatisfaction for the hotel employees. This study recommends few points for the Hotel Industry to retain its employees.

Dr. Kalyan Laghane, (2012) studied retention management in Indian hospitality industry. The findings of the study suggested that "Talent management integrates traditional talent-related functions that were considered as "administrative" functions into routine business processes. By "embedding" people management processes into standard business processes one can force line managers to think of recruiting, retention, development, etc. as essential activities that make a significant contribution to any manager's business results and success."

Mukta Kamplikar, (2011) explored the business model and the relevance of the service concept in the Indian context and consumer behavior, the marketing strategy, and communication strategy of Ginger Hotels. Challenges such as the use of outsourcing, learning and development, and attrition were also discussed

Mahajan, Sugandha, (2010), analyzed the impact of attrition rates in hospitality industry. The study majorly focuses on the increasing employee turnover, its

causes and impact. It looked at various methods to improve employee retention in an organization. Various human resource theories are used to analyze the employee behavior in an organization.

Lee, C., (2010), intended to identify employment characteristics that influenced employee satisfaction with work environments related to employment retention. Factors played different roles in measuring job satisfaction and employee retention according to individual employment characteristics, while factors related to the work environment (location, communication, accomplishment, and department) should be addressed regardless of employment characteristics. It is recommended that hoteliers provide a customized improvement agenda directed to and focused on individual groups according to that group's employment characteristics.

Indira Kandasamy, (2009), conducted a qualitative study in an attempt to identify Quality Work Life dimensions expected in the working environment of a hotel. The content analysis of the data yielded eight dimensions of QWL.

Seonghee Cho, (2009), examined whether the predictors that decrease employee intention to leave will also increase employees' intention to stay. The results suggest that perceived organizational support and organizational commitment decreased intent to leave while only perceived organizational support had a positive impact on intention to stay. Implications detail ways that hospitality organizations can focus on increasing their employees' commitment through perceived organizational support as a critical component of turnover culture.

Margaret Deery, (2008), examined the literature relating to retention of good employees and the role that work-life balance (WLB) issues have in an employee's decision to stay or leave an organization. The paper begins with a brief overview of the seminal material in the more generic management literature and then tailors the discussion to the hospitality and tourism industry using literature from the hospitality and tourism journals.

Mohinder Chand, (2007), indicated that hotel performance is positively associated with hotel category and type of hotel (chain or individual). Furthermore, hotel performance is positively related to the HRM systems of recruitment and selection, manpower planning, job design, training and development, quality circle, and pay systems. The study has a two-fold purpose: to investigate whether some specific characteristics of hotels affect organizational performance in the hotel industry in India; and to investigate whether some HRM systems affect organizational performance in the hotel industry in India.

Simons, Tony, (2003), examined the aggregation of justice perceptions to the departmental level and the business-unit level, the impact of these aggregate perceptions on business-unit-level outcomes, and the usefulness of the distinction between procedural and interpersonal justice at different levels of analysis. Businessunit-level analyses further demonstrate paths of association between aggregate justice perceptions, aggregate commitment levels, and the business-unit-level outcomes of employee turnover rates and customer satisfaction ratings. Robert A Brymer, (1991), examined managerial job stress and coping mechanisms in the hotel industry. Over 400 middle- and upper-level managers representing 23 different hotels were administered questionnaires. Findings suggest that perceptions of job Stressors lead to self-reported psychological, physiological, and behavioral strains. Personal or individual coping mechanisms did not appear to alleviate job strain. Due to managers' perceptions of the costs related to worker stress, several organizational strategies for stress reduction and prevention are offered.

Importance of The Study

Unlike the tangible products produced by other industries, the quality of "Service" cannot be standardized through machines because there is a Human factor that is involved in producing & consuming of service. Thus, in the hospitality industry the human element is of utmost importance. The industry aims at channelizing their human resources towards attainment of their objectives and the major challenge faced by the industry today, is the raising attrition rate of its employees. This study thus aims at analyzing the facts pertaining to this issue.

Objectives of The Study

- 1. To explore the reasons for high attrition rate in the Hotels of Pune city.
- 2. To identify the key factors that influences the attrition rate in hotels and to analyze the level of their influence.
- 3. To study the level impact seen on various areas in the hotels due to high attrition rate.
- 4. To analyze various measures taken by the hotels to curb the attrition rate and to check their effectiveness.

Research Methodology

Collection of Data:

The data required for the research was collected using the following techniques:

• Personal Interviews:

The researchers conducted personal interviews with the employees & the Human Recourse Managers of various hotels to understand their perception towards the increasing attrition rate in the industry & measures undertaken by the hotels to curb the attrition rate.

• Questionnaire:

A questionnaire was drafted and circulated to the hotel employees with a view to obtain their response.

Sampling Techniques:

A random sample of 100 employees representing various segments of the Hotel industry of Pune was selected to conduct this study. These segments included Five Star, Three Star, Budget hotels & Serviced apartments.

Results & Discussions

Evolution of Hotel Attrition Rate in Pune

To analyze the problem of Employee Attrition in the hotel industry of Pune, it is important to understand the evolution of this industry in the city in the past two decades and the prevailing external environment then that influenced attrition. This evolution can be studied in three phases.

Phase I – (Year 1995 – 2000):

This was the phase when the industry witnessed very less competition and the city had very few hotel options available to the guest. The major clientele was the corporate sector which was growing at a steady pace in the city. The city was changing its face from a traditional look to a more contemporary one. The corporate sector from Mumbai and other major cities was looking at Pune as a major business destination. This may have been due the geographical advantage that the city had like favorable and predictable climatic conditions and accessibility. Thus soon Pune became a preferred destination for corporate conferences and business meetings. The biggest challenge at that time was to fulfill the corporate accommodation requirement which was increasing day by day. There was a grave need of additional hotel rooms and more hotel options to satisfy this requirement. This was a transition phase for the industry and for the city at a large. In such an external environment, even though the options were less, few of the hotel employees used to get attracted to the flourishing industry in other major cities especially Mumbai due to factors like better career growth and better salary. Thus the problem of attrition was prevalent and the industry was helpless about the same.

Phase II - (Year 2001 - 2010):

This was the time when Pune got its identity as an Industrial city. Automobile, Manufacturing and other small scale industries were at their peak. The city also witnessed a boom in the "Information Technology" sector with a lot of IT companies, BPOs and Call centers flocked in converting the city into a major IT hub. This revolution resulted into a lot international business delegates visiting the city on a frequent basis. Moreover, the end of this phase in 2008, the city had hosted "Commonwealth Games" which was a prestigious event and attracted sportsmen and sport lovers all over the world. The hotel sector was getting adapted to the changing needs of the market and gradually the hotel sector was getting a facelift. Small business hotels ventured into expansion and large hotel properties laid their foundation stones in the city. Major hotel brands both Indian & international proposed to enter the market. However, the global economic condition was on a decline and the corporate sector was in the midst of economic rescission. In response this situation, Hotel barons ventured into budget hotels and serviced apartments that offered decent accommodation at a reasonable price. With new properties mushrooming in the city, there was great demand for trained manpower. Moreover, with the entry of BPOs and Call Centers, the hotel

7

employees got an alternative career option. The middle management of the hotel industry was a perfect catch of such companies since they were well groomed in handling international clientele. At this point of time, the city hotel industry faced a major staff crunch. With a lot of options available for the employees the attrition rate was at its peak.

Phase III – (Year 2011 onwards):

This is the ongoing phase of the city's hotel industry. The industry is taking a conscious effort to stabilize its growth. Although the earlier phase witnessed the entry of major hotel barons in the city's market, they are still struggling to stabilize in the competition. Most of these brands have deferred their expansion plans and are reconciling their efforts in holding their roots in the market. The IT boom has taken a back seat and thus the industry is focusing its attention on the midmarket segment. The increasing attrition rate in the industry has forced the Industry to frame employee centric policies. The Human Resource Department in Hotels is actively involved in developing innovative employment practices to retain the employees. Moreover, with the entry of international brands, the employees are exposed to the international standards of employment and thus the entire industry is revamping their employment policies to bridge the gap. However, the employees have taken a stand of "Wait & Watch". Although, because of the conscious efforts of the industry to curb the attrition rate, the turnover has reduced but there is a long way to go.

Factors Affecting Attrition Rate in Hotel Industry

Attrition is an out come of the tendency of the employees to leave the organization. Thus in a situation when more and more employees are quitting the organization, the attrition rate is on a rise. To curb this attrition, it is primarily important to understand the root cause of he same or the factors that affect attrition. Once these factors are identified and analyzed, the organizations can design policies to counter the impact of these factors resulting into reduced attrition.

Salary & Wages:

It is known fact that the hotel industry is a Poor Pay Master. The employees working in hotels are compensated very less as compared to the time and efforts that they put in their job. Students graduated in Hotel Education are absorbed at the entry level with a payment in the range of Rs. 5000/- to 10,000/- per month depending upon the property & nature of work and the salaries at all the levels are much less as compared to any other profession. This factor is the most prominent in affecting the attrition rate. Most of the employees leave the hotels in search of better pay packages and a few of them are on a lookout of jobs in metro cities like Mumbai or explore possibilities outside the country.

Long working hours:

The industry is characterized with long hours of work. The employees are expected to work for a minimum of 12 hours and may be extended to more on busy days

without any additional monetary compensation. Moreover due to continuous costumer contact, the stress level of the employees is very high. Frustrated and tired with this situation, employees quit hotel jobs and lookout for options in allied industries.

Nature of work:

The industry demands their employees to be active at all times. The job demands continuous attention to the guests and the employees are on their feet for their entire shift. Moreover, the break timings are not fixed and at times the employees are expected to work without any break. During busy days getting a weekly off is supposed to be a luxury. The job thus becomes more tiresome and stressful.

Poor Work Life balance:

The biggest challenge in working in hotel industry is sacrificing social life. The work-life balance of the employees at all levels of hierarchy is very poor. After the lengthy hard working hours when the employee returns home, he is dead tired and spends whatever time he gets in relaxing so that he becomes fresh foe the next shift. Moreover, due the odd shifts that the employees are expected to work in, he hardly manages time for his family or socializing. During festive days, it is a busy season for the hotels and thus the employees are putting in maximum hours at work and has to sacrifice his happiness of being with his family for enjoying then festival. This is one of the major reasons that force the employee especially female employees to quit the industry and take up jobs that have a better work-life balance.

Improper employment policies:

The employment policies followed by hotels are not employee friendly. The HR department of hotels is busy with regular activities of recruitment and wage administration. Employee welfare and development is an area which is less explored by the department. Moreover the policies designed are more job centric that employee centric. Thus the key issues of employees like long working hours, compensation, work-life balance, facilities are overlooked. This raises discontent amongst the employees and they are left with no option but to thing of an alternative job option.

Low Job profile:

The primary job of a hotel employee is to satisfy the demands of the guests. In doing so, at times the employee has to sacrifice his self-respect. Moreover, in the Indian scenario where there is a lack of dignity of labor, hotel employees are treated with disrespect by the guests thereby creating a complex in the minds of the employees. The industry, being a part of service industry is characterized with jobs that are not considered to be dignified or glorified cleaning of rooms, serving the guest, housekeeping etc are a few to name. Over a period of time, the employees want to get rid of these low profile jobs and thus explore other career options.

Competition:

In the recent past, the city has seen a remarkable growth in the hotel industry. A lot of hotels brands Indian as well are international have there presence in the city. This situation has led to a fierce competition in attracting employees leading to poaching of employees between hotels. The employees thus have plenty of career options to select from thereby leading to increased employee turnover in the industry.

Impact of High Attrition Rate on The Organization:

Customer Satisfaction:

Hotel industry is a part of service industry where personalized service is provided to the guests by the employees. When this industry faces employee's turnover, it has an impact on customer satisfaction since newer employees do not have the same rapport with the guest, moreover they are less confident and lack the ability to satisfy the guest especially the repeat guests.

Loss of Sale:

The dissatisfied customers due to turnover of employees may look for alternative options and thus the hotel may loose its sale. At times the employees build us a good rapport with the guest and when these employees move to some other hotel, there is a possibility that the guest may switch to the hotel where the employee has moved.

Increased cost of turnover:

Employee turnover involves churning of the employees who incurs a lot of cost like cost of recruiting new employees and expenditure towards training of these newly recruited employees.

Loss of Reputation:

When an employee leaves a particular hotel, he passes a negative message about the hotel. This hampers the reputation of the hotel. Moreover, when a hotel faces high employee turnover, people are reluctant and skeptical to take up jobs in such hotels thereby resulting into loss of reputation of the hotel

Reduced quality of workforce:

The moral of the employees is down when they see their co employees leaving the organization one by one. The resultant is that the efficiency of the existing employees reduces and thus the general quality of workforce of the organization is on the decline.

Increased workload of existing employees:

The hotel operations are service oriented in nature and requires a lot of manpower. The industry is characterized by shortage of manpower. Moreover hotels do not want to have a high inventory of employees so as to reduce the labor costs and to sustain during the off peak season. Thus the employee strength in any hotel is below the optimum mark. In such a situation, when some of the employees leave the hotel, their workload has to be obviously taken over by the existing employees till the time somebody is appointed in their place and has been trained enough to take up the job responsibilities.

Reduced morale of existing employees:

The situation is definitely not welcomed by the employees and the resultant is that gradually the morale of the employees reduces.

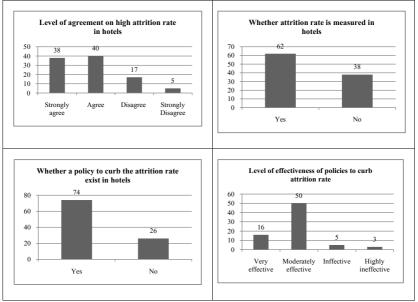
Poaching of employees:

Attrition leads to cut throat competition amongst the hotels to employ and retain employees. This situation at times leads to malpractices like poaching of employees resulting into unhealthy competition.

measures taken	Impact
by hotels to curb	
attrition rate:	
Improved Salary structure	• Provision of a competitive salary structure reduces employee turnover.
	• Employees will not look for alternative career options offering better salaries if their existing salaries match with their expectations.
Incentives / Recognition of employees for their contribution	• Recognition of employees makes them feel that the hotel is acknowledging their efforts and thus increases his morale.
	Employees are motivated to be more productive this createsa healthy competition amongst them to achieve such recognitions.
Reduced work timing	• Hotel employees are working for long hours and thus have a poor work-life balance. Reduced working hours help them to socialize and spend time with their families.
	• This helps in reducing stress levels of the employees
Emphasis of employee welfare / facilities	• Provision facilities go along in retaining employees. Since employees spend most of their time in the hotel, it is a good practice to provide facilities like, relaxation rooms, recreation clubs, late night pick up & drops etc so as to make them comfortable at the workplace.
	• Additional welfare facilities like accommodation, education allowance for children, medical facilities, family insurance, spouse clubs etc are appreciated by the employees and may result in curbing the attrition.
Counseling of employees to cope up with challenges	• The employees of hotels go through a lot of stress. It is thus a good practice to counsel them by experts to cope up with the professional challenges and help is reducing their frustrations which may help in retaining the talent.

Effective training & development initiatives	• Efficient training & development initiatives equip the employees with the necessary skill sets to handle professional stress & challenges thereby increasing their morale. Thus the employees are satisfied with their employment and do not look for alternate career options.
Provision of better work environment	• Efforts should be taken to provide safe and healthy work environment to facilitate the employees pun in their best.
Clarity in promotional & growth policies	• The hotels should have a well defined policy for employee promotion and career growth. By doing so the employees are able to plan their career with the hotel thereby avoiding any conflicts and misunderstandings.
Enhanced Employee relations	• An employee relation is matter of great significance in any industry. Hotels should develop a healthy work atmosphere with amicable employee relations that results in enhanced employee morale and retention.
Conduct of Exit interviews for better understanding of the root cause of employee turnover	 In a situation where an employee has decided to quit the hotel, the management should conduct an exit interview for better understanding of the root cause of the employee's decision to quit. Policy of conducting Exit interviews also gives a feel to the existing employees that they are of great importance to the hotel and the hotel is keen to resolve any employment issues.

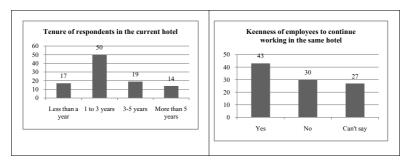
Factors Influencing Increasing Attrition Rate in Hotels and Measures Undertaken by Hotels to Curb Attrition Rate.



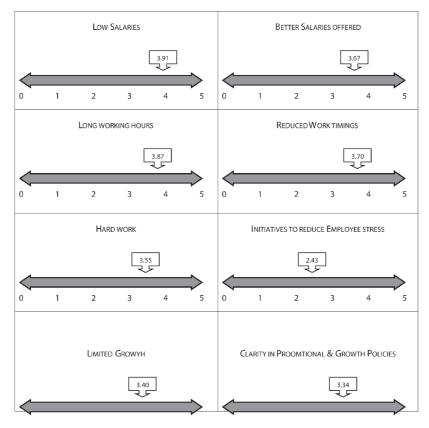
Department of Hotel Management, BIT-Mesra, Ranchi-835215

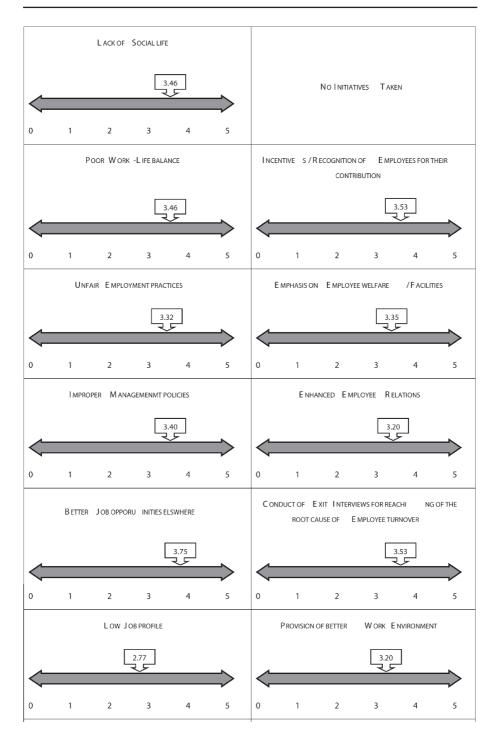
Double Blind Refereed Papers

The Relationship among Transformational Leadership Style, Marketing Resources & Capabilities & Performance for Intr. Tourist Hotels in Taiwan 13



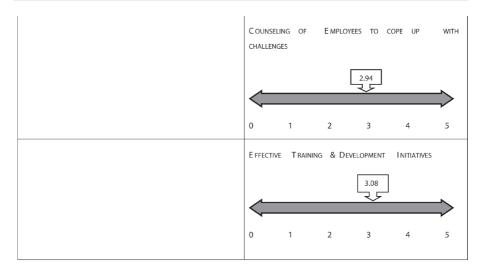
Factors influencing the Attrition Rate	Measures undertaken by hotels to curb
in Hotels & average points awarded to	Attrition rate & average points awarded
them as per their importance	to them based on their effectiveness
	(Evaluated on a 5 point rating scale based on its effectiveness in curbing attrition rate in hotels
Where 1= Least important & 5= Most important)	Where 1= Least effective & 5= Most effective)





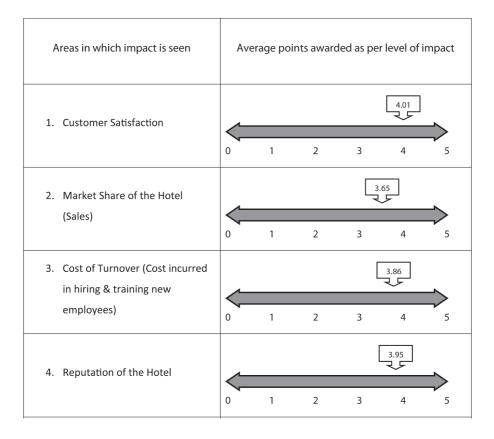
Department of Hotel Management, BIT-Mesra, Ranchi-835215

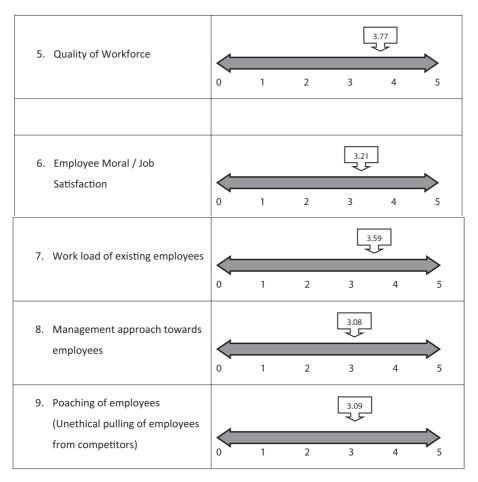
The Relationship among Transformational Leadership Style, Marketing Resources & Capabilities & Performance for Intr. Tourist Hotels in Taiwan 15



Impact of High Attrition Rate on Hotels

(Evaluated on a 5 point rating scale based on the level of impact seen on them)





(TABLE 3)

Conclusions

The findings of the research can be concluded as under:

- 1. Increasing Attrition rate is a major concern of Hotel industry of Pune city.
- 2. Most of the hotels do not have a system of measuring the attrition rate in their hotel.
- 3. Although hotels have designed policies to curb the attrition rate, they are not very effective.
- 4. Majority of the employees have tenure of less than 3 years in one hotel.
- 5. Although most of the employees wish to continue with their current employment, there are about 30 % of the employees who are not keen on the same and 27% of the employees are not sure about it.

- 6. Low salaries and long working hours are the most influential factors that affect attrition rate in hotels.
- 7. High attrition rate in hotels has a great impact on customer satisfaction and reputation of the hotel.
- 8. Out of the measures undertaken by the hotels to curb the attrition rate, offering better salaries and reducing the working hours are the most effective ones.

Suggestions & Recommendations

Based on the responses received by the employees of the hotel industry in Pune on the issues related to increasing attrition rate in hotels, the following suggestions & recommendations can be made:

- 1. Hotels should develop a mechanism to measure the attrition in their hotel so as to take timely measures to control the same.
- 2. The industry should be more proactive in dealing with the problem of attrition and should frame realistic policies to curb the attrition rate. These policies should be effectively implemented to achieve the desired results.
- 3. It has been observed that the most important factors affecting attrition are "Low salaries" & "Long working hours". The industry should concentrate on these areas and take measures to reduce employee dissatisfaction of the above aspects.
- 4. Hotels should develop a more employee centric approach while designing their employment policies with an aim towards holistic development of the employees.
- 5. Participation of employees should be encouraged in designing and implementing the employment policies.
- 6. Since the employees spend most of their time on the job, they should be provided with a comfortable and stress free work environment.
- 7. Hotels should be more sensitive about the employees leaving their organization and thus should take measures to understand the reasons and the root cause behind their decision. This can be done by conducting structures & confidential exit interviews of the departing employees. This would not only result in the employee changing his decision, but also pass a message amongst the existing employees that the hotel is concerned about them and is keen to reduce employee dissatisfaction.

Bibliography & References

1. Sunil Panwar, (2012), "High Staff Turn Over In Hotel Industry, Due To Low Remunerations and Extended Working Hours !!!", VSRD-IJBMR, Vol. 2 (3), 2012, Pages: 81-89.

- Dr. Kalyan Laghane, (2012), "A Study of Retention Management in Indian Hospitality Industry: A Practical Viewpoint", Excel Journal of Engineering Technology and Management Science (An International Multidisciplinary Journal) Vol. I No. 2 January - June 2012 (Online) ISSN 2277-3339
- 3. Mukta Kamplikar, (2011"Ginger Smart Basics™", Emerald Emerging Markets Case Studies Collection.
- 4. Mahajan, Sugandha, (2010), "Analyzing the impact of attrition rates in hospitality industry", dissertation submitted in partial fulfillment of requirements of the University of Chester for the degree of Masters of Business Administration.
- 5. Lee, C., (2010), "Individual employment characteristics of hotel employees that play a role in employee satisfaction and work retention", International Journal of Hospitality Management 2010 Vol. 29 No. 3 pp. 344-353.
- 6. Indira Kandasamy, (2009), "Hotel employees' expectations of QWL: A qualitative study", International Journal of Hospitality Management, Volume 28, Issue 3, September 2009, Pages 328–337.
- Seonghee Cho, (2009), "Employees intent to leave: A comparison of determinants of intent to leave versus intent to stay", International Journal of Hospitality Management, Volume 28, Issue 3, September 2009, Pages 374– 381.
- 8. Margaret Deery, (2008), "Talent management, work-life balance and retention strategies", "Emerald 20, (2008).
- 9. Mohinder Chand, (2007), "The impact of HRM practices on organizational performance in the Indian hotel industry", Emerald 29, (2007).
- 10. Simons, Tony, (2003), "Why managers should care about fairness: The effects of aggregate justice perceptions on organizational outcomes", Journal of Applied Psychology, Vol 88(3), Jun 2003, 432-443. DOI: 10.1037/0021-9010.88.3.432
- 11. Robert A Brymer, (1991), "Managerial job stress in the hotel industry", International Journal of Hospitality Management, Volume 10, Issue 1, 1991, Pages 47–58