



STATUS OF IMPLEMENTATION AND AWARENESS OF HACCP IN FOOD OUTLETS OF FIVE STAR HOTELS IN REFERENCE TO DELHI-NCR

¹Sushil Kumar, ²Dr.Sunil K. Kabia, ³Dr. Sanjay Nibhoria

¹Research Scholar, Bundelkhand University Jhansi (U.P.)

²Professor, Bundelkhand University Jhansi (U.P.)

³Assistant Professor, ITHM, Bundelkhand University Jhansi (U.P.)

ABSTRACT

This paper attempts to investigate and analyze the status of hygiene practices in the Food outlets of five star hotels in Delhi-NCR. The Food outlets business sector experienced significant growth in the last decade due to rapid urbanization and foreign business enterprises showing keen interest in the Indian markets. Despite the economic benefits of the sector, it has been recognized as a potential hazard to public health when food handlers, both preparing and serving are not adhering to the hygienic practices. The concept of Hazard Analysis and Critical Control Points (HACCP) is a preventive system to guarantee the safety of food for the consumer. It focuses on the prevention of physical, chemical and biological hazards rather than on carrying out inspection of the finished products. Systematic random sampling was used. Data for the study was obtained from a random sample of 30 Food outlets in five star hotels of the national capital region. The current study adopted a structured survey questionnaire to collect data on awareness and practice of hygiene standards in the Food outlets business and opinion of the staff on the desirability of introducing a HACCP system in thirty Food outlets. Independent variables used included age, literacy level, marital status, sex and designation of the respondent. Dependent variables included knowledge on HACCP, principles of HACCP application and the effects of these principles in the overall management of the Food outlets. In conclusion, this study clearly highlights a significant gap, which may be narrowed by increasing the HACCP awareness regarding the hygiene practice and to help organizations achieve their business goals.

Keywords: Food outlets, hygiene practices, HACCP, FSSAI and Hotels

INTRODUCTION

Food safety plays a significant role in the economic and health development of Nations by safe guarding the nation's health, enhancing tourism and hospitality industry, the production, distribution and consumption of safe food. Despite the importance of food safety, there seem to be few quality control systems to guard against food-related illnesses, in developing countries like India, some of which may be fatal while others can lead to expensive medical care. The magnitude of food borne diseases is illustrated by various statistics. Illnesses from food related diseases outnumber illness from all other environmental factors combined. Majority of food-borne illnesses are caused by bacterial pathogens. The concept of Hazard Analysis and Critical Control Points (HACCP) is a preventive system to guarantee the safety of food for the consumer. It focuses on the prevention of



physical, chemical and biological hazards rather than on carrying out inspection of the finished products.

The hotel industry is the largest and rapidly growing industry in India, employing over 25 million people, accounting for 8.5% of the total workforce, and generating over 4% of GNP (Ministry of Tourism 2015). The Indian hotel industry is confronted with considerable challenges imposed by the turbulent and rapidly changing external environment that it operates in. This increased competition has forced many hotels to find ways to retain current customers and attract competitor's customers, one of the major factors in this is hygiene and food safety.

The government of India has established a separate body FSSAI for ensuring food safety in hotels and is working to formulate and implement policies and plans for a rapid development of hotel industry. These bodies aim primarily at improving the infrastructure, upgrading the technology and enforcing quality standards for the food. Moreover, efforts to promote service quality and food quality must therefore be based on a professional approach to management of operations, particularly in the area of food and beverage operations. The hotel industry produces a diverse range of products and services both for domestic and foreign tourists. Being such a dominant sector makes the industry a useful research site for this investigation. In light of the above, our decision to target the Indian star hotels reflects our desire to add exploratory data to the emerging picture of the application of HACCP techniques in a relatively unsearched industry sector of great significance to Indian economy.

A Hazard Analysis and Critical Control Point (HACCP) approach is recommended wherever possible to enhance food safety. The HACCP approach is internationally recognized as being effective in ensuring the safety and suitability of food for consumption and in hotels. The HACCP System, as it applies to food safety management, uses the approach of controlling critical points in food handling to prevent food safety problems. Besides enhancing food safety, other benefits applying HACCP include effective use of resources and timely response to food safety problems. In addition, the application of the HACCP system can result in more focused risk management by food control regulatory authorities and can promote international trade by increasing buyer confidence in food safety.

The HACCP system identifies specific hazards and control measures to ensure the safety of food. A HACCP plan is specific to the particular food and processing application. The HACCP system is capable of accommodating changes such as advances in equipment design, new information concerning health hazards or risks, new processing procedures or technological developments.

HACCP is based on seven established principles, as defined by FAO:

Principle 1: Conduct a hazard analysis.

Principle 2: Identify critical control points.

Principle 3: Establish critical limits for each critical control point.

Principle 4: Establish requirements for monitoring critical control points.

Principle 5: Establish corrective actions.



Principle 6: Establish verification procedures.

Principle 7: Establish documentation and record keeping.

The hotel business scenario has changed world over especially after the WTO agreements came into effect. Codex Alimentarius Commission recommended standards and guidelines regarding various aspects of Food Service Industry. These requirements have become benchmark for international hospitality industry. HACCP System for food safety management has become global requirement of international hospitality as a measure of installing higher confidence in food safety. Government has an important role in facilitating systems that promote greater food safety and awareness.

The Codex Alimentarius General Principles of Food Hygiene lay a firm foundation for ensuring effective food control and food hygiene. The General Principles of food hygiene follow the food chain from primary production to the consumer, highlighting the key hygiene controls at each stage.

LITERATURE REVIEW

Flyers, 2008 expressed the various benefits of this system for all Food outlets owners and consumers alike to the government include among others improved public health, efficient food control, lowered public health cost, trade facilitation and increased confidence of the customers in the food industry .Various benefits for the industry will be increased consumer and government confidence, reduced legal and insurance cost, reduced production cost ,increased market access, improved staff management. To the consumer there will be reduced risk of food borne diseases ,increased awareness of basic hygiene, increased confidence in the food industry. **Amitava (2008)** found that how the Indian food industry is taking on the HACCP challenge. He mentions that there was plethora of safety codes advising on every aspect of food production all over the world. And the need for having them has been felt more acutely too. But the few codes have had such a wide impact on modern food production as HACCP. Several Indian companies are going for HACCP certification nowadays. Several hospitality majors like the Taj group have also taken the lead in earning the HACCP label. **According to Sperber (2005)**, HACCP system is one of the important tools used to ensure food safety against hazard infections . It was begun as a voluntary science-based system within the food industry .The application of HACCP systems ensures proper food handling, processing and service to consumers. The use of HACCP concept has increased in importance through its endorsement by Codex Alimentarius at the international level and by the European Union and the United States. More than forty countries are using the HACCP concept for the food handling. **P.K Sarkar & Parminder Bajaj (2005)** highlights that HACCP system is necessary to ensure that it is being implemented effectively and is suitable to achieve the organizations food safety objectives. It is an effective evaluation of a hotel's quality and food safety management system. HACCP audit brings out whether the documented system has adequate evidence to demonstrate the effectiveness of its implementation. A well conducted audit both as an in-house activity and a third party assessment provides an objective view of food operations of an organization. It reveals the strong and weak points and also the non-conformities in the documented system and in its implementation. An audit is therefore, a constant measure of achievement of food



safety goals set out by the management in their quality policy. The management gets feedback based on facts, enabling it to make informed decisions towards improvement in food safety. **Seema Shukla (2005)** There are a number of food laws being implemented by various Ministries/Departments. They are primarily meant for two purposes, namely: Regulation of specific food items; and Regulation of hygienic conditions of food production. The Indian Standards on Food Hygiene System Guidelines for its application is technically equivalent to its counterpart Codex document. It is a proactive system for assuring safe production of food by emphasizing prevention rather than inspection, Addresses all types of hazards – microbiological, physical and chemical and reduces the risk of contamination. **Anita Eves & Panagiota Dervisi (2005)** has formulated 'Experiences of the implementation and operation HACCP in the food service sector' This study discussed experiences of implementation and operation of hazard analysis critical control points (HACCP) in food service sector through in depth interviews with seven food service outlets in the south-east of England. Experiences described a number of barriers to the successful implementation and operation of HACCP, and also perceived benefits. Barriers included difficulties of identifying hazards, inadequate knowledge, time constraints related to monitoring and recording, excessive documentation, convincing staff regarding the importance of the system, and increased costs. **Egan M.B & Dean M.S (2005)**, A review of food safety and hygiene training studies in the commercial sector discovered methods on the effectiveness of food safety and food hygiene training in the commercial sector of the food Industry. In particular it focuses on those studies that have tried to evaluate the effectiveness of such training. **Billy, (2002); Motarjemi & Mortimore, (2005)** In order to ensure food chain supply safety, a combination of HACCP implementation and other prerequisite programs is vital. The reasons for such an emphasis lie in the fact that the food industry is today not only responsible for ensuring the safety of food production through various measures aimed at safeguarding against its hazards, but it is also responsible for the development of further HACCP studies as a part of the food safety assurance system. **FAO/WHO (2003)** stresses that Food Manufacturers and servers like Hotels and Food outlets bear the ultimate responsibility for assuring the quality and safety of the foods they produce. The food must reach the customer in its intended form. They are under growing pressure from governments and buyers to demonstrate that they implement effective systems to meet basic Good Hygiene Practices and HACCP requirements for food safety. Initial responsibility for HACCP lies within the food industry, in particular with Hotel's management. **Taylor, (2001) Quintana and FAO, (2002)** discussed about Staff and business owners gain confidence and are better equipped for informed discussion on food safety measures with food inspectors, third party auditors, consultants, trading partners, consumers and others.. **Karl Ropkins ,(2000)** HACCP is a tool for the development, implementation and management of effective safety assurance procedures, as opposed to an actual safety assurance procedure. It was formulated for use by individual food producers, manufacturers, distributors and retailers as a protocol for the development of unique safety assurance procedures to meet their individual needs. The range and severity of hazards varies significantly. The preliminary steps of



HACCP implementation are an auditing exercise, where data is compiled for the exercise .HACCP implementation is a team exercise as no individual is likely to have all the practical, technical, theoretical and managerial expertise required. The selected HACCP team must have access to all relevant information, as well as the necessary range of expertise to identify all hazards, CCPs and critical limits associated with the product and process under consideration.**Mortimore and Wallace, (2000)** Before developing the HACCP team, commitment from upper management should be obtained. Without commitment from the entire plan, HACCP will not function properly. The HACCP team is established of individuals who will execute the duties of implementing and maintaining the HACCP plan. It is important to have enough members to avoid too much work delegated to one person, but not too many members, so that communication between them becomes difficult. A team consisting o four to six members is ideal, with one of them acting as team leader **Motarjemi and Kaferstein (1999)** HACCP plan is based on sound science and it prevent many outbreaks by improving hygienic quality of foods. HACCP has also improved the regulatory aspect of food safety by offering an opportunity for food control authorities to revisit their method of inspection. The HACCP system has increased the collaboration among scientists, which will essentially strengthen the abilities of food safety authorities in producing safe food.**Aramounii et. al. (1996)** According to his studies since HACCP implementation, there has been reduced microbial contamination on equipment surfaces tested in meat plants. Microbial results on meat grinders, knives and plastic plugs were all reduced. HACCP has also improved the regulatory aspect of food safety by offering an opportunity for food control authorities to revisit their method of inspection. **Mayes, (1994)**.states that HACCP training is a key ingredient in implementing and maintaining effective HACCP plans. Employees and trainers involved in implementing a HACCP plan, teaching a HACCP course or assessing a HACCP plan all need to be well educated on the HACCP concept. Without training, the full benefits of HACCP are not likely to be obtained To be properly trained employee must understand the practical implications of HACCP to food safety on a worldwide basis and gain practical skills and knowledge for HACCP implication, understand the continuous development and harmonization of HACCP.

The study provides two hypotheses in order to study and analyse the implementation and importance of HACCP practices in Food outlets in Delhi National Capital Region.

H1: There is a set of HACCP practices which is most significant in hotel industry.

H2: There is a significant relationship between the importance and uses of HACCP model.

RESEARCH METHODOLOGY

Sample and Data Collection

For the present study both primary and secondary data were used. Primary data were collected with the help of questionnaire from the selected Food outlets, located in Delhi and NCR. They will represent a mix of industry, size, operation, and technology. Respondents consisted of Food outlets managers, captains, servers and kitchen food handling staff. A structured questionnaire developed

consisting of various questions such as demographic profile of respondents, HACCP variables. The secondary data were obtained from previous works in the field of study, Books, journals, and case studies. Sample of Food outlets were taken randomly from Delhi National Capital Region (Delhi, Gurugram, Ghaziabad and Noida)

Data were collected using questionnaires during the period of June-September 2019. The questionnaires were addressed to Food outlets Managers, two staff each from Service and Kitchen of 30 Food outlets organizations (having licenses of FSSAI) i.e. five questionnaires per Food outlets, a total of 150 questionnaires of which 68.67 % returned the questionnaires.

Total number of filled questionnaires received 103. The Data were analysed using SPSS. The questionnaire was tested for reliability and internal consistency using Cronbach α . This test calculates the reliability coefficient (α). The test helps determine the set of variables with high reliability based on the coefficient (α) above 0.77.

Measures : We used existence of HACCP practices measured on a Likert-type 5-point scale ranging from 1=strongly disagree to 5=strongly agree.

Profile of the Respondents		Frequency
Age	Below 20	10
	20-30	37
	30-40	28
	40-50	16
	50 and Above	12
Education Qualification	10+2	21
	Diploma	27
	Graduation	44
	Post Graduation	11
Marital Status	Single	30
	Married	73
Gender	Male	67
	Female	36
Designation in the Organisation	Manager	20
	Supervisor/Captain	18
	Table Server	29
	Food Handler (Cook)	21
	Kitchen Steward	15
Work Experience in Food Industry Jobs	0-2 Years	31
	2-4 Years	46
	5 Years and Above	26
Years of Working With Same Food outlets	1 Years	25
	2 Years	33
	3 Years	18
	4 Years	15
	5 Year and Above	12
Type of Food outlets	Individual	11



RESULTS

To find out the extent to which Food outlets applied HACCP practices, respondent were asked to indicate importance and usage of HACCP practices. The respondent strongly believed that HACCP practices are vital for an organization. There are a number of reasons cited in the survey as to why HACCP practices are important. The study found that HACCP system is essentially a management tool and the increased level of process control can result in product consistency and improvements in traceability, with beneficial cost implications for organizations as access to some markets is increased and more customers are attracted. The development of a HACCP system can be a valuable team-building exercise for an Organization, it can lead to improved education and awareness of staff

CONCLUSIONS AND RECOMMENDATIONS

The study contributed to the current knowledge in HACCP practices in Food outlets business. It has provided additional insights into area relating to factors influencing the adoption of best HACCP practices. This study found significant differences in the usage and importance of HACCP practices among the Food outlets in Delhi NCR (National Capital Region). The result indicates that there is a positive relationship between HACCP practices variables and Food outlets types, however the result are somewhat different with regard to HACCP practices variables and Food outlet's operating years (age) and Food outlet's employees.

Future research should consider incorporating other important item that have not been considered or omitted from other studies and are likely to influences the adoption of HACCP practices in Food outlets such as management support, employee's satisfaction and attitudes, perceived benefits and problems in implementation and the cross-comparison.

REFERENCES:-

- (1) Andrews Sudhir (2000) Food& Beverage Management, Tata McGraw- Hill Publishing Co. Ltd. New Delhi.
- (2) Byran F.L., (1992): Hazard Analysis Critical Control Point Evaluation. A guide to identifying hazards and assessing risks associated with food preparation and storage-Geneva, 1211
- (3) Bryan, F.L. 'Hazard Analysis Critical Control Point Evaluations.' WHO, Geneva,1992.
- (4) Buchanan, R.L. HACCP: A Re-emerging Approach to Food Safety. Trends in Food Science & Technology. November. 104-106. 1990.
- (5) CAC (Codex Alimentarius Commission). 'Guidelines for the Application of the Hazard Analysis Critical Control Point (HACCP) system.' FAO. Rome. 1993
- (6) Caserani and Kintons; The Theory of Catering, 11th edition, Book Power, U.K
- (7) Chichy R.F. 'HACCP as a quality assurance tool in a commissary food service system(1982),International journal of Hospitality Management, volume 1, issue 2, pp.103-106.
- (8) Codex Recommended International Code of Practice, General Principles of Food Hygiene, CAC/ RCP 1-1969, Rev. 4- 2003, page 1-20.
- (9) Codex Recommended International Code of Practice, HACCP System and Guidelines for its Application, CAC/ RCP 1-1969, Rev. 4- 2003-Annex, page 21-31.
- (10) Egan M.B &Dean M.S (2005), A review of food safety and food hygiene training studies in the commercial sector ;consumer Behaviour & Health Research Centre, University of surrey, U.K.



- (11) Eves Anita & Dervisi Panagiota (2005) 'Experiences of the implementation and Operation hazard analysis critical control points in the food service sector, International journal of hospitality management, volume 24, issue1, , pp. 3-3-
Jauhri Anil (2008)
- (12) Food Codex Alimentarius Commission (1995). International Harmonization of Food Safety and Labeling Standards
- (13) IFTS (1991). Food and Drink: Good Manufacturing Practice, A guide to its Responsible Management. London: Institute of Food Science & Technology.
- (14) Jindal Navdeep, and Saxena D.C. (2008), Food safety and Quality assurance: Present Scenario, paper presented at National Seminar for Food Safety & Quality, Guru Jambheshwar University of Science & Technology, Hissar, India, 20-21 October 2008.
- (15) Khetarpaul Neelam (2008), Role of Accreditation in Food Sector, paper presented at National Seminar for Food Safety & Quality, Guru Jambheshwar University of Science & Technology Hissar, India, 20-21 October 2008. 179
- (16) Mayes, T. and Kilsby, D.C. (1989) 'Preface The Use of HAZOP Hazard Analysis to Identify Critical Control Points for the Microbiological Safety of Food' in Food Quality 1, 53-57
- (17) Mayes, T. (1992) 'Simple Users' Guide to the Hazard Analysis Critical Control Point Concept for the Control of Food Micro-biological Safety' in Food Control 3, 14-19
- (18) Noori, H., and R. Radford. Production and Operation Management, Total Quality and Responsiveness New York: McGraw-Hill, Inc.
- (19) Roday S. (1990) Food Hygiene and Sanitation, Tata McGraw- Hill Publishing Co. Ltd., New Delhi.
- (20) Sprenger . Richard A (1987) 'Hygiene for management –a text for food hygiene courses 2nd edition Highfield Publication, International Journal of Hospitality Management, volume 6, Issue1, pp. 61.
- (21) Swanson et al, (2000): Institutional Experience for the Implementation of Risk Analysis on Food Safety
- (22) Taylor, M.R. (1993) 'FDA's Plans for Food Safety and HACCP-Institutionalizing a Philosophy of Prevention', International Life Science Institution Symposium, Atlanta, USA
- (23) The Food Safety and Standards Act, 2006, No 34 of 2006, India.