

Factors Affecting Employees' Productivity in Food and Beverage Department in Mercure Hotels Chain in Egypt

Oncy H. Shaheen Mohamed A. Morsy Omar Qoura Karam Gomaa
Faculty of Tourism and Hotels, Fayoum University

Abstract

The major aim of this research is to find the productivity in the food and beverage department in Mercure chain hotels in Egypt using the linear programming technique, stochastic frontier analysis (SFA) by using panel data for ten years results from year (2007) – (2016) from case study hotels. This study uses a parametric approach to measure the productivity especially in the last years. However, productivity management is a big challenge to organizations especially when the product is in the form of a service. This study aims at measure the food and beverage productivity. Design/ methodology/ approach. 1-The first phase empirical data was collected via a structured questionnaire from line staff and managers of Mercure hotels in Egypt 2-The second phase data was collected from the annual profit and loss statement of the above-mentioned hotels. Findings: this research accepted 2 factors which were (x_1 =external factors and x_4 =management related factors and their hypothesis were then accepted, however the others factors were refuted in this empirical data which might let the door open to further research to find out why this factor were not significant; Research limitations/implications – Based on the research findings and their discussions, this study provides recommendations for future research in this area to examine the non-significant factors in anther hotels and in anther departments.

Keywords: Employees productivity, Data envelopment analysis, (DEA), efficiency, labor productivity, Partial productivity, Mercure hotels, Food and Beverage, Performance (SFA) stochastic frontier analysis.

Introduction

Productivity in the hotels industry is becoming increasingly remarkable as labor costs rise since the hotel industry is labor demanding, as its profitability relies on the success achieved in super productivity employees Introduction. One might have reflected in how productivity is measured. And how staff is trained to meet strictly set performance standards. Hence, the reality has been completely different for the majority of the hotels. Employee productivity can easily have measured in the Manufacturing sector in terms of financial measures. But due to the special characteristics of the hotel sector it shows difficulties for measuring EP such as Intangibility, Perishability, Heterogeneity, Inseparability, Simultaneously and Instantons.

Researchers have claimed that main purpose of EP measures is the ability to better meet customer demand, Revenue, Sales and added value of other financial measures may properties interesting dimensions of EP. It is easy to monitor and measure the physical items related to a guest's stay, service, quality, attitudes but many sides cannot be easily measured because they are intangible. A common problem of productivity definition, it is still defined according to every one views and perceptions from reviewing productivity in the literature in general and EP in particular, it is found that EP is not well-defined in relation to the hotel industry. The close relationship between EP and the core of the industry – its employees- and the scarcity literature on EP in hotels. Confirms a gap in the literature on how hotels measure and control EP. Without productive employees, there might be limited opportunities for growth. Thus, it is important that hotels select appropriate EP measurements to help them identify them weakness and monitor EP properly. Therefore, the main contribution of this study is to fill the gap between conceptual and

practical views Productivity might be viewed as a simple concept as many authors defined it in an economic equation as a relationship between outputs and inputs.

The current study seeks to contribute the literature in hospitality business from two aspects of purposes:

- (1) To measure the EP of the food and beverage department in Mercure Hotels chain in Egypt.
- (2) To determine the factors affecting the productivity in Mercure Hotels chain in Egypt.

Literature Review

This literature review discusses the concept and the measurement of EP in the hotel industry; Zaki et al., (2014) argued that productivity is a multidimensional construct. they added the quality variable to the measurement of productivity based on the Egyptian 5-stars hotels .as well. Gujarathi, (2016) aimed at analyzing the Productivity Management System adopted and implemented by the hospitality industry with an objective to identify the challenges in measuring productivity in the hotels and to identify various methods adopted by them to measure employee productivity and concluded that, the major reasons contributing to the ineffectiveness of the system are lack of management will, lack of Common parameters of productivity measurement and intangible nature of the product of the industry i.e. "Service". In the same context Joppel and Li (2016) used time-series techniques to estimate the long -run relationship between actual wages and labour productivity. The result shows that the average labour productivity depends positively on actual salary, and causes labour productivity. Additionally, the impulse-response function displays that a positive act in actual salaries produces a little negative effect in productivity for two years followed by a positive One. also, Witt, (2010) discussed problems of measuring productivity, together with specific reasons for low productivity in the hotel sector. It is suggested that increased usage of operations management techniques by hotel management is likely to result in improved productivity, and various examples are presented of situations in which these techniques can be successfully employed. Meantime, the paper reviews the concept of productivity and the issues relating to its measurement, before reviewing previous studies of productivity in the hotel sector. The paper concludes that there are no significant differences in productivity levels according to the size, location, demand variability or age of the hotel, thereby refuting evidence from some prior studies. While Karatepe, (2008) examined the effects of negative affectivity (NA) and positive affectivity (PA) on work – family conflict and family –work conflict and the effects of both directions of conflict on marital satisfaction and turnover intentions. The findings of the study indicated that family–work conflict has a detrimental impact on marital satisfaction. However, this study provided no empirical support for the relationship between work–family conflict and marital satisfaction. Accordingly, Chen, (2011) analyzed the cost efficiency of Taiwan's international tourist hotel sector. A stochastic cost frontier function with three inputs (i.e. labor, food and beverage, and materials) and one output as the total revenue is specified and used to estimate hotel efficiency. The results reveal that hotels in Taiwan are on average operating at 80% efficiency. Sanjeev, (2007) provided exploratory insights on measurement of efficiency of the hotel and restaurant companies operating in India. The study also explores whether there is a relationship between the efficiency and size of the hotel and restaurant companies. The study identifies the top performers in this sector. Also, managers get important insights for their strategic and operational decisions to improve performance. Regarding to Barros, (2010) debates, by means of data envelopment analysis, the efficiency of each hotel belonging to owned chain, by identifying the efficient hotels in a model, the slacks in inputs and the peer group of efficient

hotels and outputs of the inefficient hotels, the data envelopment analysis stands out as one of the most advanced techniques to help the enhancement of efficiency. Managerial implications arising from this study are also considered. Consequently Kilic, (2005) testified on an experimental research study which examined the factors influencing productivity in hotels in Northern Cyprus. Agreeing to the research conclusions staff recruitment, meeting guest expectations, staff training, and service quality are the main productivity factors in hotels; during crises, information technology, marketing, and forecasting are ranked quite low. At meantime Johnston (2004) affords a structure for analyzing productivity in service industry by differentiating between operational and customer productivity. The researcher also recognized some of the problems in measuring productivity, especially in a service sector, and then uses a few examples to show the relationship between operational and customer productivity. In another hand Sigala, (2005) aimed to illustrate the value of stepwise data envelopment analysis (DEA) for measuring and benchmarking productivity. The issues and problems regarding productivity measurement as well as the advantages of using DEA in productivity measurement are examined. Six inputs and three outputs are recognized as the factors affecting rooms' division efficiency in three-star hotels. Hu, (2004) proposed Data Envelopment Analysis (DEA) as an effective tool to measure labor productivity of hotels. Using the data collected from the hotels in the State of California, the study applies DEA to calculate the labor productivity score of each sampled hotel.

Chashmi, (2014) reported that Efforts to improve the efficient use of different resources such as human force, capital, materials, energy and information, is the primary objective of all economic organizations. The existence of appropriate organizational structure, work procedures, healthy tools, balanced work environment as well as qualified and competent human force are required to achieve ideal productivity (Prescott and li 2009). Employee's participation in conscious and deliberate efforts with their work discipline influences on the productivity. The spirit of improving the productivity culture should be blown to the body of firms where the workforces form its core.

According to Chlivickas, (2014) found that in order to build effective public service, it is essential to systematically progress human resource system, through innovations since it could guarantee success in following objectives and priorities in the state management and for enhancement of public administration system

Astina and Ambarwati, (2015) Discovered that literature highlighted many indicators of labor productivity, such as (High absence rate, the rate of Yield, Quality produced, and The Error rate. Time required,)

Measuring Productivity

While finding an agreed definition of EP for the hotel industry is difficult, measuring. This section of the literature review will critically examine EP measurement methods used to analyze EP in hotels: first, the use of physical measures; second, financial measures; third, non- financial measures. Physical measures have been used widely for years (Houldsworth and Jirasinghe, 2006) their main aim is to give a productivity ratio in which managers physically measure every piece of work of one or more employees. For example,

Clark and Kirk (1997) used the total number of meals produced by each chef. Jones and Siag (2009) Revealed that there are fundamentally three difficulties in measuring productivity in services in general and tourism in particular:

- (1) Identifying appropriate inputs and outputs,
- (2) Defining appropriate measures of those inputs and outputs,

(3) Establishing appropriate ways of measuring the relationship between inputs and outputs as (Anderson 2003) cited that Selection of suitable measures of productivity depends on the purpose of the productivity measurement and/or data availability. Finally, all sides—inputs, intermediate products (materials, components, supplies, energy, and services all other expenses), and output—require acceptable measures that can be compared across units, sectors, and countries. Many of the tangible elements used in the production of experiences are less important than they might be in manufacturing.

Inputs: Capturing Labor Productivity and Changes in Quality

The total inputs of the factors of production consist of labor and capital, including natural resources, structures, equipment, and inventories. However, not all of these are tangible elements. For instance, service culture is an important intangible element for service sector production, but it is extremely challenging to quantify its value (Sánchez, 2012). Labor input is generally measured in terms of hours worked by all persons engaged in production such a measurement is not accurate since differences in workers' educational attainment, skills, and experience must also be considered (Diewert 2008) Furthermore, the tourism industry in particular is heavily reliant on self-employed as well as unpaid family workers, neither of which is captured by available labor force statistics. To solve these problems, some analysts' weight labor hours by the average hourly compensation by industry, occupation, and other significant classification including levels of education and experience high proportion of certain outputs of the tourism industry are used as intermediate inputs.

Measuring service productivity

Bröchner, (2017) conducted that There is a consensus that the measurement of productivity in the service sector is more difficult than for manufacturing. As services are intangible, many of them also heterogeneous and have a production process that there are problems in measuring both outputs and inputs (Gallouj, 2013) In particular, quality changes in inputs as well as in outputs are often difficult to determine for services. Quantitative measures for service qualities can be estimated as inserted market prices for each quality, but data access is a problem; Schreyer (2002) discusses alternative methods for quality adjustment of output measures, with a focus on the even grander productivity measurement challenges related with health care, education and other non-market services.

Previous implemented Methods to measure employee productivity in Hotels

In an effort to track the productivity of its employees, hotels have adopted different methods of measuring the employee productivity. However, the fittingness and effectiveness of these methods needs to be tried. Coenen and von Felten, (2014) The following

1. Based on Generated Revenue

Total generated revenue per employee., Total generated food revenue per Food production staff., Total food & beverage generated revenue per Food & Beverage service staff. Total generated room revenue per Front Office staff.

2. Based on Time frame

Average number of covers served per worked hours. (Food Production & F & B Service staff),
Average number of check-ins / check-outs handled per worked hours (Front office staff),
Average number of rooms cleaned per worked hours (Housekeeping staff)

3. Based on guest satisfaction

Average number of guest satisfaction points generated per department., Number of guest praises / positive feedbacks received per department / person., Number of guest complaints / negative feedbacks received per department / person.

4. Based on repeated guests

Percentage of repeat guests generated.

The fact that, frontier techniques are considered the best quantitative productivity measures in the hospitality industry. However, we have noticed that the majority of these studies hide an important part of measurement that tells the hoteliers about factors to concentrate in case of poor productivity. It is also noted that every statistical method concerns the goals at a whole, not provides the ways that helping to reach these goals. The proof of this declaration is the availability of more margins in every application (Chen et al.,2011) from this perspective, the researcher adopted that the use of non-financial measures is more suitable to the hotel industry.

But in this paper, the researcher measures the EP in the food and beverage department using the (SFA) technique and will find the statistical significant between the results and the independent variables as follow:

Stage 1:

Using (SFA) technique within Stata 13 software to find out the productivity of food and beverage for each hotel:

The first and very crucial step in conducting a (SFA) is the determination of inputs and outputs. The main essential point in this process is that the input-output variables should be selected in harmony with the type of productivity being assessed (Sherman and Rupert, 2006). The Efficiency in SFA is not confined to a traditional sense of operating efficiency; it can be comprehensive to be relative evaluation of performance in any performance dimension if the inputs and outputs are identified according to the performance dimension deliberated by Mandhachitara,. (2017) As the researcher interested in measuring the productivity for the above-mentioned hotels

Step 1: Collecting the data from concerning hotels in the case study by the documentation examining

Step 2: Entering the data to Stata 13 software (SFA)technique

Step 3: Interpretation of the results

This important stage aims to get an average score from all EP measures for the concerning hotels in the case study

The data were based on: inputs and outputs

- Inputs based on Total number of manpower + Total food and beverage cost (payroll, Related expenses, and Raw materials cost and other expenses such as electricity, water, fuel, and maintenance etc.....)
- Outputs based on Total generated food and beverage revenue + Total generated number of covers

Stage 2

Consequently in Table Pearson correlation will find out the statistical significance between the independent variables via Pearson correlation coefficient, and table (Pearson correlation) will reveal the relation between the independent variables and dependent variable (EP) the outcomes of SFA technique via manova, buy spss 22 technique

Methodology

The decision was made to collect data from Mercure hotels in Egypt. Three Five-star hotels located in Luxor & Hurghada and Cairo and one Four-star hotel located at Ismailia are agreed to participate in the research. Then first briefing about the research aims and the same person was interviewed about his/her views on productivity and how the hotel was trying to improve its productivity. The target of these interviews was to gain supplementary understanding about hotels productivity management practices to support the questionnaire building. The questionnaire was distributed to the managers and line staff in food and beverages department. A total of 256 questionnaires were received, of which 20 were unusable. The SPSS 22 was used to analyze the findings of the questionnaire. As presented, all of the respondents were managers and line staff namely

Data Collection Methods

Data is the most valuable information that collected by the researchers from the respondents and those of the data will be used to answer the hypotheses and research questions. In our research, we are using two types of the data which are primary data and secondary data to assist us for collecting the information. Indeed, both of the data has did a great job of assisting us to find out relevant information and shows there is a significant relationship between independent and dependent variables.

Collection data1

To estimate the production frontier, we used cross-sectional data for ten years from the year (2007) to (2016), and obtained the needed data from Mercure hotels chain in Egypt (Mercure le sphinx hotel, Mercure Hurghada, Mercure Ismailia, and Mercure Karnak Luxor) such as Total generated food & beverage revenue-Total number of employees –Total prime cost-Total generated number of covers to use it as inputs and outputs to find the EP via DEA technique to calculate the labor productivity score of each sampled hotel.

Collection data 2

A self-administered questionnaire was designed to collect the data from the f&b department employees and managers from the targeted hotels in Egypt. The questionnaire bearing straight forward and relevant questions was drafted and handed over to the sample to obtain their responses.

Questionnaire Survey

The survey method can be used for descriptive, exploratory, or explanatory researches, it is a detailed and qualified description of population depends on systematic collection of data by interview, questionnaire, or observation methods (Bhattacharjee, 2012). In the field study, the researcher used questionnaire survey to collect target data. The questionnaire instrument was selected to its known advantages of saving time, effort, and money as well as its efficiency as a

data collection tool in hospitality sector researches. One type of questions was used in the questionnaire:

□ A 5-point Likert scale (1 strongly disagree and 5 strongly agree) in order to quantify the collected data and assess the degree of respondents' agreement with phrases.

Questionnaire Design and Development:

The scientific rules that must be taken into consideration when generating the items of questionnaire from related literature, the questionnaire implemented in this study was adapted by Barcelos et al. (2015).

Data Collection Instrument Pre-testing and Piloting

The questionnaire's pre-testing and piloting involved the next steps:

1. Formulate the primary draft of the questionnaire according to literature review.
2. Present the primary draft to thesis supervisors to review it and take their comments and amendments.
3. Formulate the second draft, and present it with the study hypotheses to a panel of hotel studies academic staff to evaluate validity of the tool and its ability to examine the study hypotheses.
4. Distribute the final copy to managers and staff in food and beverage department to check the face validity which refers to whether an indicator seems to be a reasonable measure of its underlying construct "on its face" (Bhattacharjee, 2012). Then, do final modifications to the instrument.
5. Present the final questionnaire to thesis supervisors in order to take the distribution permit. While semi-structured interviews can allow issues to be explored in greater depth (Robson, 2002).

Variables of the Study

Variable is a term which can take on different quantitative values, it may be independent, dependent in its relation with other variables (Bhattacharjee, 2012). Two types of variables are used in current study as shown:

➤ Dependent Variable (DV.)

The dependent variable is food and beverage staff productivity in the hotel industry Employee's

➤ Independent Variable (IV.)

The independent variable is seven factors affect the Employee's in the food and beverage productivity :(Employees, management, customers, marketing, information technology, and work place environment).

The validity of the questionnaire was performed through academic professors and the thesis supervisors and colleagues to ensure that the questionnaire pages and words are correct and without any defaults.

Table 1: Response rate

| Hotel Name | No. of Distributed | No. of Invalid | No. of Valid Returned | Ratio |
|-------------------------|--------------------|----------------|-----------------------|--------|
| Mercure Cairo le sphinx | 62 | 3 | 59 | 95,2 % |
| Mercure Karnack Luxor | 91 | 5 | 86 | 94.5% |
| Mercure Ismailia | 83 | 6 | 77 | 92,7 % |
| Mercure Hurghada | 40 | 6 | 34 | 85% |
| Total | 276 | 20 | 256 | 93% |

Table 2: correlation among the independent factors

| | | x1 | x2 | x3 | X4 | X5 | X6 | X7 |
|----|---------------------|--------|--------|--------|--------|--------|--------|--------|
| x1 | Pearson Correlation | 1 | .385** | .353** | .279** | .165** | .216** | .227** |
| | Sig. (2-tailed) | | .000 | .000 | .000 | .008 | .001 | .000 |
| | N | 256 | 256 | 256 | 256 | 256 | 256 | 256 |
| x2 | Pearson Correlation | .385** | 1 | .606** | .541** | .514** | .445** | .477** |
| | Sig. (2-tailed) | .000 | | .000 | .000 | .000 | .000 | .000 |
| | N | 256 | 256 | 256 | 256 | 256 | 256 | 256 |
| x3 | Pearson Correlation | .353** | .606** | 1 | .740** | .596** | .399** | .495** |
| | Sig. (2-tailed) | .000 | .000 | | .000 | .000 | .000 | .000 |
| | N | 256 | 256 | 256 | 256 | 256 | 256 | 256 |
| X4 | Pearson Correlation | .279** | .541** | .740** | 1 | .646** | .454** | .608** |
| | Sig. (2-tailed) | .000 | .000 | .000 | | .000 | .000 | .000 |
| | N | 256 | 256 | 256 | 256 | 256 | 256 | 256 |
| X5 | Pearson Correlation | .165** | .514** | .596** | .646** | 1 | .505** | .559** |
| | Sig. (2-tailed) | .008 | .000 | .000 | .000 | | .000 | .000 |
| | N | 256 | 256 | 256 | 256 | 256 | 256 | 256 |
| X6 | Pearson Correlation | .216** | .445** | .399** | .454** | .505** | 1 | .628** |
| | Sig. (2-tailed) | .001 | .000 | .000 | .000 | .000 | | .000 |
| | N | 256 | 256 | 256 | 256 | 256 | 256 | 256 |
| X7 | Pearson Correlation | .227** | .477** | .495** | .608** | .559** | .628** | 1 |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | .000 | |
| | N | 256 | 256 | 256 | 256 | 256 | 256 | 256 |

Correlation is significant at the 0.01 level (2-tailed).

From table (Pearson correlation), it was found highly correlation among the 7 predictors of employee's productivity since the significant value was less than, α

Table (3) (Manova)

| | | | Sum of Squares | Df | Mean Square | F | Sig. |
|------------|----------------|------------|----------------|----|-------------|-------|-------|
| Luxor * x1 | Between Groups | (Combined) | 3299.43 | 12 | 274.953 | 0.788 | 0.663 |

| | | | | | | | |
|---------------|----------------|------------|---------|-----|---------|-------|-------|
| | Within Groups | | 84813.6 | 243 | 349.027 | | |
| | Total | | 88113 | 255 | | | |
| Hurghada * x1 | Between Groups | (Combined) | 63729.5 | 12 | 5310.79 | 1.959 | 0.002 |
| | Within Groups | | 658821 | 243 | 2711.2 | | |
| | Total | | 722551 | 255 | | | |
| sphinx * x1 | Between Groups | (Combined) | 15776.2 | 12 | 1314.68 | 0.949 | 0.499 |
| | Within Groups | | 336594 | 243 | 1385.16 | | |
| | Total | | 352370 | 255 | | | |
| Ismailia * x1 | Between Groups | (Combined) | 756.924 | 12 | 63.077 | 1.184 | 0.295 |
| | Within Groups | | 12950.7 | 243 | 53.295 | | |
| | Total | | 13707.6 | 255 | | | |
| Luxor * x2 | Between Groups | (Combined) | 6449.04 | 20 | 322.452 | 0.928 | 0.552 |
| | Within Groups | | 81664 | 235 | 347.506 | | |
| | Total | | 88113 | 255 | | | |
| Hurghada * x2 | Between Groups | (Combined) | 61480 | 20 | 3074 | 1.093 | 0.358 |
| | Within Groups | | 661071 | 235 | 2813.07 | | |
| | Total | | 722551 | 255 | | | |
| sphinx * x2 | Between Groups | (Combined) | 13589.1 | 20 | 679.456 | 0.471 | 0.975 |
| | Within Groups | | 338781 | 235 | 1441.62 | | |
| | Total | | 352370 | 255 | | | |
| Ismailia * x2 | Between Groups | (Combined) | 677.733 | 20 | 33.887 | 0.611 | 0.903 |
| | Within Groups | | 13029.9 | 235 | 55.446 | | |
| | Total | | 13707.6 | 255 | | | |
| Luxor * x3 | Between Groups | (Combined) | 9548.43 | 31 | 308.014 | 0.878 | 0.656 |
| | Within Groups | | 78564.6 | 224 | 350.735 | | |
| | Total | | 88113 | 255 | | | |

| | | | | | | | |
|---------------|----------------|------------|---------|-----|---------|-------|-------|
| Hurghada * x3 | Between Groups | (Combined) | 105806 | 31 | 3413.09 | 1.24 | 0.189 |
| | Within Groups | | 616745 | 224 | 2753.32 | | |
| | Total | | 722551 | 255 | | | |
| sphinx * x3 | Between Groups | (Combined) | 25358.1 | 31 | 818.002 | 0.56 | 0.972 |
| | Within Groups | | 327012 | 224 | 1459.87 | | |
| | Total | | 352370 | 255 | | | |
| Ismailia * x3 | Between Groups | (Combined) | 1373.47 | 31 | 44.305 | 0.805 | 0.761 |
| | Within Groups | | 12334.1 | 224 | 55.063 | | |
| | Total | | 13707.6 | 255 | | | |
| Luxor * X4 | Between Groups | (Combined) | 7904.12 | 21 | 376.387 | 1.098 | 0.351 |
| | Within Groups | | 80208.9 | 234 | 342.773 | | |
| | Total | | 88113 | 255 | | | |
| Hurghada * X4 | Between Groups | (Combined) | 123777 | 21 | 5894.16 | 2.303 | 0.001 |
| | Within Groups | | 598773 | 234 | 2558.86 | | |
| | Total | | 722551 | 255 | | | |
| sphinx * X4 | Between Groups | (Combined) | 15131.4 | 21 | 720.542 | 0.5 | 0.969 |
| | Within Groups | | 337239 | 234 | 1441.19 | | |
| | Total | | 352370 | 255 | | | |
| Ismailia * X4 | Between Groups | (Combined) | 626.406 | 21 | 29.829 | 0.534 | 0.955 |
| | Within Groups | | 13081.2 | 234 | 55.903 | | |
| | Total | | 13707.6 | 255 | | | |
| Luxor * X5 | Between Groups | (Combined) | 3606.07 | 18 | 200.337 | 0.562 | 0.924 |
| | Within Groups | | 84507 | 237 | 356.569 | | |
| | Total | | 88113 | 255 | | | |
| Hurghada * X5 | Between Groups | (Combined) | 34357.2 | 18 | 1908.74 | 0.657 | 0.851 |
| | Within Groups | | 688193 | 237 | 2903.77 | | |

| | | | | | | | |
|----------------|----------------|------------|---------|-----|---------|-------|-------|
| | Total | | 722551 | 255 | | | |
| Le sphinx * X5 | Between Groups | (Combined) | 10793.4 | 18 | 599.635 | 0.416 | 0.984 |
| | Within Groups | | 341576 | 237 | 1441.25 | | |
| | Total | | 352370 | 255 | | | |
| Ismailia * X5 | Between Groups | (Combined) | 260.025 | 18 | 14.446 | 0.255 | 0.999 |
| | Within Groups | | 13447.6 | 237 | 56.741 | | |
| | Total | | 13707.6 | 255 | | | |
| Luxor * X6 | Between Groups | (Combined) | 2655.14 | 9 | 295.015 | 0.849 | 0.571 |
| | Within Groups | | 85457.9 | 246 | 347.39 | | |
| | Total | | 88113 | 255 | | | |
| Hurghada * X6 | Between Groups | (Combined) | 31740.4 | 9 | 3526.71 | 1.256 | 0.262 |
| | Within Groups | | 690810 | 246 | 2808.17 | | |
| | Total | | 722551 | 255 | | | |
| sphinx * X6 | Between Groups | (Combined) | 16144.9 | 9 | 1793.88 | 1.312 | 0.231 |
| | Within Groups | | 336225 | 246 | 1366.77 | | |
| | Total | | 352370 | 255 | | | |
| Ismailia * X6 | Between Groups | (Combined) | 304.474 | 9 | 33.83 | 0.621 | 0.779 |
| | Within Groups | | 13403.1 | 246 | 54.484 | | |
| | Total | | 13707.6 | 255 | | | |
| Luxor * X7 | Between Groups | (Combined) | 3774.62 | 12 | 314.552 | 0.906 | 0.541 |
| | Within Groups | | 84338.4 | 243 | 347.072 | | |
| | Total | | 88113 | 255 | | | |
| Hurghada * X7 | Between Groups | (Combined) | 66788.5 | 12 | 5565.71 | 2.062 | 0.02 |
| | Within Groups | | 655762 | 243 | 2698.61 | | |
| | Total | | 722551 | 255 | | | |
| sphinx * X7 | Between Groups | (Combined) | 13573.7 | 12 | 1131.14 | 0.811 | 0.639 |

| | | | | | | | |
|---------------|----------------|------------|---------|-----|---------|-------|-------|
| | Groups | | | | | | |
| | Within Groups | | 338796 | 243 | 1394.22 | | |
| | Total | | 352370 | 255 | | | |
| Ismailia * X7 | Between Groups | (Combined) | 218.163 | 12 | 18.18 | 0.328 | 0.984 |
| | Within Groups | | 13489.4 | 243 | 55.512 | | |
| | Total | | 13707.6 | 255 | | | |

It was decided to run the manova test at the final stage to find out the most effective factor in relation to EP.

Table (40) showed that first regarding to x1(external factors) were effected EP in case 4= (Mercure hurghada) (f=1.90, SIG=, 002).also management related factors were effected EP in case 4= (Mercure hurghada) (f=2.3, sig=, 001). And the rest of independent variables didn't show any significance with dependent variable EP

Results and Discussion

Findings

These findings completely disagreed with kilic and Okumus (2005) as they revealed that there is no effect of F&B employee's productivity by the external factors

X2 (work environment) was not significant with any case of EP. These findings totally agree with kilic & Okumus (2005) they revealed that the work environment doesn't affect the productivity of the f&b employees

X3 (employees) were not significant with any case of EP. These findings disagree with kilic & Okumus (2005) they proved that there is a relation between employees relate factors and the food and beverage employee's productivity like the employees training and employees recruitments as it shows significant with the productivity of the food and beverage employees

X4 (Management) was significant only with case 4= (Mercure Hurghada) (f=2.3, sig=001).

These results disagree with kilic & Okumus (2005) they discovered that there is no relation between management related factors and the fb employee's productivity

X4 (Management) didn't show significant with the other hotels. But showed significance with case four case 4= (Mercure Hurghada) (f=2.3, sig=001).

X5 (Customers), were not significant with any cases. these findings disagree with kilic & Okumus (2005) as they found that the guest satisfaction strongly affected the food and beverage employee's productivity

x6 = (Marketing and demand) were not significant with any cases x7= (Information technology) were not significant with any cases and these findings totally agreed with kilic and Okumus 2005 as they discovered that there is no relation between marketing related factors and food and beverage employee's productivity

So, this research accepted 2 factors which were x 1= (External factors) and x4 = (Management related factors) and their hypothesis were then accepted. however, the others factors were refuted in this empirical data which might let the door open to further research to find out why those factors were not significant with the food and beverage employees productivity in Mercure chains hotel In Egypt.

Recommendations

The researcher suggests set of recommendations based on study results, these recommendations introduced to hotel managers of Mercure hotels chain in Egypt, food and beverage managers and the scholars as follow:

Recommendations for general managers and food and beverage managers of the concerned hotels

Based on the research findings and the above conclusions, many recommendations can be put forward for hotels and to be addressed.

- 1- The study provides the following recommendations to the hotel's general managers and food & beverage managers in the case study, to increase the employee's productivity
- 2- Using the ratio of the EP of the food and beverage in each hotel's general managers and food & beverage managers to guide them to better productivity.
- 3- The appropriate management style should be adopted by the general managers and food & beverage managers to increase the employee's productivity as the management (x4) showed a significance with case 4 (Mercure hurghada).
- 4- Adopting appropriate strategy during the political crises to avoid the effect of the external factors of the employee's productivity as the external factors showed a significance with case 4 (Mercure hurghada).
- 5- The researcher observed that there is an employment diversity in case 1 (elders – female – disable cases -etc.....) it is a leading example but should be implemented in the rest of the hotels in the case study.
- 6- Fair remuneration system should be implemented based on regular system to obtain better productivity.
- 7- Motivation plans should be implemented in regular basis.
- 8- Good Work environment it might improve the workers productivity.
- 9- Job security the most important issue for the workers in the hotels sector for that should be always in consideration of the general managers towards the workers.
- 10- Continuous training program as a part of sustainable development should be adopted by the general managers and food and beverage managers to enhance the employee's productivity.
- 11- Elder workers are an added value to the hotel due to their experience and their loyalty towards the hotel. the management should recognize them and reward them from time to time
- 12- Workers retention should be a top priority for the HR managers and the management
- 13- The management of the above-mentioned hotels in the case study shall concentrate on the Workers engagement.
- 14- HR managers to ensure the awareness of Workers recruitment way to choose the best in the employment market and to reduce the workers turnover.
- 15- More Delegation for the employees in the food and beverage employees.
- 16- More Empowerment for the employees in the food and beverage department specially the women's.
- 17- Every hotel has to conducts an internal survey with the employees and managers in the food and beverage department asking them how can they improve the productivity of the department.
- 18- Decentralization system should be implemented as management approach to facilitate the mission of employees to boost their productivity.

- 19- The management of hotels should be sharper on the implementation of the “Productivity Management System” by acquiring the necessary knowledge on the same and should hire experts to develop and implement the system for better results.
- 20- Productivity management system should be implemented in each hotel.

The study provides the following recommendations to the researchers:

1. The researchers should examine the factors which didn't show any significance with the dependent variable (EP) like x2= (work environment) x3=employees x5=(customers) x6=(marketing and demand) x7= (information technology) in another hotel and in another destination.
2. To measure the employee's productivity in other (DMU's) hotels and other departments such as front office.
3. The researchers should measure the productivity by another sophisticated measurement technique (SMT's) such as (DEA) data envelopment analysis.
4. The future researchers should examine other factors can affect the employee's productivity in the food and beverage department.

References

- Chashmi, S.A., Emani, A., Hossien Zadeh, M., Rezaei Kalantari, B. and Servin Baghi, A.A.A., 2014. Analysis and comparison of the effective factors on implementation of knowledge management (Case study: Customs supervision office of Mazandaran Province). *European Online Journal of Natural and Social Sciences: Proceedings*, 2(3 (s)), pp. Pp-1354.
- Barros, C. P., Assaf, A., & Josiassen, A. (2010). Hotel efficiency: A bootstrapped metafrontier approach. *International Journal of Hospitality Management*, 29(3), 468-475.
- Anderson, M.C., Banker, R.D. and Ravindran, S., (2003). The new productivity paradox. *Communications of the ACM*, 46(3), pp.91-94.8.
- Ambarwati, D. & Astina, I. N. G., (2015). Effect of Intrinsic and Extrinsic Motivation on Employee Productivity: Case of Le Grand Hotel Pecatu. *Journal of Business on Hospitality and Tourism*, 1 (1),12.
- Barcelos, E. M. B., de Paula Baptista, P., Maffezzoli, E. C. F., da Silva, W. V., Zancan, R., & Marchetti, C. P. D. V. (2015). Relationship Between an
- Bhattacharjee, A., Limayem, M., & Cheung, C. M. (2012). User
- Bröchner, J., (2017). Measuring the productivity of facilities management. *Journal of Facilities Management*, 15 (3).
- Chen T-H (2011) Performance measurement in a small Taiwanese hotel Chain. *Cornell Hospitality Quarterly* 52: 354–362.
- Chlivickas, E. (2014). International cooperation and innovations for developing human resources system. *Procedia-Social and Behavioral Sciences*, 110, 276-283.
- Clark J, Kirk D (1997) Relationships between labor productivity and factors of production in hospital and hotel foodservice departments-empirical evidence of a typology of food production systems. *Foodservice Research International* 10: 23-39.
- Felten, D., Coenen, C. von. Böhm, M., and Meier, G., (2014). Identity and Image of FM: two sides of a coin to promote productivity in FM. *ING IN*, p.64.
- Schreyer, P. & Colecchia, A., (2002). ICT investment and economic growth in the 1990s: is the United States a unique case? a comparative study of nine OECD countries. *Review of Economic Dynamics*, 5(2), 408-442.
- Diewert, E., (2008). What Is to Be Done for Better Productivity

- Gallouj, F. & Djellal, F., (2013). The productivity challenge in services: measurement and strategic perspectives. *The Service Industries Journal*, 33(3-4), 282-299 factors. *Journal of Research in Marketing and Entrepreneurship*, 19(2), 161-181.
- Houldsworth, E. and Jirasinghe, D., (2006). *Managing and measuring employee performance*. Kogan Page Publishers
- Hu, B. A., & Cai, L. A. (2004). Hotel labor productivity assessment: A data envelopment analysis. *Journal of Travel & Tourism Marketing*, 16(2-3), 27-38.
- Johnston, R., & Jones, P. (2004). Service productivity: Towards understanding the relationship between operational and customer productivity. *International Journal of Productivity and Performance Management*, 53(3), 201-213.
- Joppe, M., & Li, X. P. (2016). Productivity measurement in tourism: The need for better tools. *Journal of Travel Research*, 55(2), 139 -
- Karatepe, O. M. Yavas, U., & Babakus, E., (2008). The effects of job demand, job resources and intrinsic motivation on emotional exhaustion and turnover intentions: A study in the Turkish hotel industry. *International Journal of Hospitality & Tourism Administration*, 9(4), 384-404.
- Kilic, H., & Okumus, F. (2005). Factors influencing productivity in small island hotels: evidence from Northern Cyprus. *International Journal of Contemporary Hospitality Management*, 17(4), 315-331.
- Mandhachitara, R., Mandhachitara, R., Allapach, S., & Allapach, S. (2017). Small business performance in Thailand: key success
- Sánchez, A. (2012). Productivity in the services sector: conventional and current explanations. *The Service Industries Journal*, 32(5), 719-746.aaMeasurement? *International Productivity Monitor*, (16).
- Gujarathi, R. Peshave, J., Peshave, M., & Gupta, K., (2016) An Analysis of the Challenges Faced by Hospitality Educators While Pursuing Ph. D.
- Prescott, D., and Li, X. (2009). *Measuring productivity in the service sector*. Guelph, Ontario, Canada: Canadian Tourism Human Research Council and University of Guelph.
- Sigala, M., Jones, P., Lockwood, A. and Airey, D., (2005). Productivity in hotels: a stepwise data envelopment analysis of hotels' rooms division processes. *The Service Industries Journal*, 25(1), pp.61-81.
- Sanjeev, G. M. (2007). Measuring efficiency of the hotel and restaurant sector: the case of India. *International Journal of Contemporary Hospitality Management*, 19(5), 378-387.
- Sherman, H.D. and Zhu, J., (2006). *Service productivity management: Improving service performance using data envelopment analysis (DEA)*. Springer Science & Business Media.
- Jones, P. and Siag, A., (2009). A re-examination of the factors that influence productivity in hotels: Studies of the housekeeping function. *Tourism and Hospitality Research*, 9(3), pp.224-234.
- Witt, S. F., Song, H., Li, G., & Fei, B. (2010). Tourism demand modelling and forecasting: how should demand be measured? *Tourism Economics*, 16(1), 63-81.
- Zaki, K.G.M., Jones, E., Abdel Wahab Morsy, M. and Abdelmabood, A. E. (2014), "Using the Delphi technique to develop a conceptual model for employee productivity in the Egyptian hotel industry", *Tourism Research & Hospitality*, available at: http://www.scitechnol.com/using-the-Delphi-techniq-to-develop-a-conceptual-model-for-employee-productivity-in-the-Egyptian-hotel-industry-ktIG.php?article_id=1588 (accessed 16 April).