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ANALYSIS OF HUMAN PERFORMANCE IMPROVEMENT FACTORS BETWEEN FRONTLINE HOTEL SERVICES

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Abstract:

Tourism makes a significant contribution to Indonesia's economic growth. The hospitality industry provides significant support to the tourism industry. The hospitality industry services is an industry engaged in services and has high competitiveness. One of the supporting factors in the hospitality industry is the role of human resources. Human resources that support the continuity of service activities in the hotel. Hotel management, especially in the city of Surakarta, Central Java, Indonesia continues to develop strategies for the management of services to consumers. One of them improves the performance of employees on the front line. Improvements in the reward system, task commitment, career development, and role ambiguity, will affect motivation and empowerment to improve front-line hotel employees' performance in Surakarta City.

Keywords: employee performance, frontline hotel, hospitality, human resource management

1. Introduction

A. Background of the study

The tourism and hospitality industry is growing and has considerable potential to attract visitors to the sector and increase the multiplier effect of the industry (Gössling et al., 2021). Tourism contributes significantly to Indonesia's economic growth. Indonesia's tourism sector is projected to account for 15 percent of the gross domestic product (GDP) in 2019. Tourism supports economic growth in Indonesia. If the components of the tourism economy grow The contribution of the tourism industry, then, will be critical to Indonesia's economic growth. Indonesia's Gross Domestic Product is currently heavily influenced by the tourism sector.

Based on Central Statistics Agency data (BPS), foreign tourist visits (Wisman) continue to increase. In 2017, there were 14.04 million visitors. The increase is about 21.88 percent from 2016 which is estimated to reach 11.52 million foreign tourists. The contribution of Indonesia's tourism industry to increasing GDP will increase foreign exchange earnings (because each foreign tourist spends between \$1,100 and \$1,200 per visit) and will create job opportunities in specific communities (According to the most recent Central Bureau of Statistics data, the country's unemployment rate was 5.81 percent in February 2015).

The Ministry of Tourism and Creative Economy's "Wonderful Indonesia" campaign promotes Indonesia as a tourist destination for foreign visitors. Promotional campaigns must be implemented by the government as a way to spread Indonesia's positive image. The government's goal of welcoming 20 million foreign visitors by 2020, one of which is required by the country's hospitality industry, was met. According to data from the Ministry of Tourism and Creative Economy, the tourism industry earned Rp 280 trillion in foreign exchange. This is an increase from

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the achievement in 2018 of Rp 270 trillion. Tourism expansion has contributed to a 5.5 percent increase in national GDP. The sector has a workforce of 13 million people.

By the Tourism and Creative Economy Ministry, there will be 16.3 million foreign tourist visits in 2019. There are several obstacles obtained to increasing the number of tourists. In the future, not only fixated on increasing the target number of tourist visits. However, there are foreign exchange objectives in the tourism and creative industries. Tourism has the potential to generate US\$ 21 billion in foreign exchange in 2020, while the creative economy has the potential to generate US\$ 23 billion in foreign exchange. One of the organizations related to tourism is the hospitality industry. An industrial service that has a strategic role in the world of tourism is the hospitality industry. (www.solopos.com, November 21, 2018). The hospitality and accommodation industry in Surakarta City is an industry engaged in services and has high competitiveness.

Human resources are a critical supporting factor in the hospitality industry. Human resources contribute to the hotel's service continuity. The world was shocked in early 2020 by the coronavirus (Covid-19) outbreak, which infected nearly all countries. However, foreign exchange goals exist in the tourism and creative industries. In 2020, tourism has the potential to generate US\$ 21 billion in foreign exchange, while the creative economy has the potential to generate US\$ 23 billion (Rahma et al., 2020). One of the industries affected by the Covid-19 pandemic is tourism due to a decrease in demand for domestic and foreign tourists. Hotel occupancy dropped by 40%, threatening the hotel industry's survival. according to (Budiyanti, 2020) the tourism industry's response to the coronavirus outbreak in 2020.

In total, 1,139 Indonesian hotels have suspended their Covid-19 pandemic or Corona Virus operations. On the fifth of February, 2020 29 were closed down on February 10, 2021, because of a lack of visitors as well as other supporting businesses that were not operating normally (Diayudha, 2020). Hospitality businesses would rather close their business than stay open. The number of employees laid off is increasing in tandem with the corona outbreak. The number had risen to 2,189 as of May 12, 2020, with up to 65,594 employees laid off (Merdeka.com March 2020). The Covid-19 pandemic has wreaked havoc on the hotel industry in Indonesia. According to experts, the phenomenon of the Covid-19 outbreak since December 2019 should be an important learning for the global community as disease outbreaks and pandemics become more common (Hassan et al., 2020). Tourism is a highly vulnerable industry to potential crises caused by a variety of factors.

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B. Literature Review and Hypotheses Development

One of the strategic management functions implemented by hoteliers is the need for the management of human resources or personnel funds. Furthermore, because the number of workers has significantly decreased, the work schedule has been adjusted (Puspita et al., 2021). Customer satisfaction is the key to service in a hotel. This is done by increasing the professionalism of all hotel employees to achieve the goals employees in to maintain self-discipline and achieving success in their goals, the tourism and hospitality industries must be professional. Employee satisfaction and dedication can be increased by paying employees fairly for their human resources (Guliyev et al., 2019).

Hotel management must ensure professionalism among employees to achieve the desired success. Employee satisfaction and loyalty can be improved by adequately compensating their human resources (Guliyev et al., 2019) Pemberbayaan has the most influence in supporting the improvement of organizational performance, followed by organizational changes and work motivation variables. Test results from (Arini, 2020) provide an in-depth analysis of the professionalism of the hotel supervisor, which needs to be provided by the hotel manager with care, sustainable development, or supervisor through training in the context of customer orientation. Characteristic individuals have a positive relationship with employee career development, in this case, the personality of five-star hotel employees According to a study, Surabaya has a direct impact on career development. (Barbosa-mccoy 2016). The perception and attitude of employees affect employee performance, which affects the performance of the organization. Appearance is a primal-level concept; aspects of the performance process can be distinguished, i.e. behavioral involvement from expected results (Borman, &Motowidlo, 1993; Campbell et al., 1993; Roe, 1999).

The study looks at how the reward system affects employee performance in some Cameroonian manufacturing firms in the Littoral Region. The research found a link between the reward system and employee performance. System rewards boost employee motivation, especially for employees working in five-star hotels. Commitment to the task is centralized motivation (Renzulli, 2017). Task commitment is often associated with high motivation to achieve goals. Commitment to perform tasks in an organization is an important part of improving the achievements of organizational members. Based on the results of the research. It demonstrates the existence of a relationship between job satisfaction and work commitment.

The career progression process is the process of improving the individual's employability skills that can be achieved to achieve the expected career (Barnett & Bradley, 2007; Baruch, 2015). Career development is part of one's career success while providing sustainability in organizations and industries (Dawson dan Phillips, 2013: 478). The occurrence of the Covid-19 pandemic indirectly creates an ambiguity of roles for employees. According to the classic role model (Kahn et al., 1964), this defines that role ambiguity is due to inadequate information available to effectively carry out employee responsibilities. The theory of motivation underlying employee performance is Clayton Alderfer's theory (1969) stating the idea that humans have three types of core needs: Eksistensi, Relatedness, and Growth. Additional empirical studies back up the ERG theory (Robbins and Judge, 2008; Schneider and Alderfer, 1973). One of the core human needs

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according to ERG theory is the growth achieved through empowerment. Empowerment, participation, or participatory management is a classic term in business administration. (Wilkinson, 2015). Empowerment can be part of the language of daily administration (Collins, 1994; Cunningham et al., 1996; Hennestad, 1998; Wilkinson, 1998). Employee empowerment is a recommended approach to service sector management (Sternberg, 1996; Lockwood, 2007).

2. Research Method

- **a.** The research design used is the Literature review method. The use of this method is associated with the Covid-19 pandemic, which limits the ability of researchers to retrieve data. A literature review is a type of research conducted by researchers that entails the gathering of some books and magazine articles related to the problem and research objectives.
- **b.** This technique is used to uncover various theories as reference material in the discussion of research findings, it should be relevant to the problem being addressed/researched.
- **c.** A review of literature sources can include national and international journals, as well as theories relevant to this research study, namely variable variables that affect employee performance.
- **d.** Some of the related variables include human resource management, employee performance, reward system, task commitment, career development, role ambiguity, motivation, and empowerment.
- e. Collection of the literature review is used in several stages including the search for articles based on outline topics, a grouping of articles based on the topic's relevance and years of research last the sorting of explanatory structures, and the comparison of interconnected data.

3. Results and Discussion

3.1. Results

Human resource management (HRM) plays a role in organizational development, employee resources, learning and performance improvement, and providing services in optimizing employee welfare. The initial understanding of Human Resources comes from Graham's opinion (1987, Hiltrop, 1996). Research on the development of HRM explains that a distinctive HRM trait is how performance improvement is achieved through people in the organization. Employee performance theory is a work attitude theory that gives results to a particular job to a company's employees (Hackman & Oldham, 1975, 1980). According to SET when employees are in the environment, organizations must be creative and rewarded with empowerment and training, responsive to environmental changes (Andrew &Sofian, 2012). This study's findings reveal a significant difference between work engagement and organization. Employee empowerment is important because indirectly brings a change in an organization. A study resulting in a link between the tendencies of service recovery performance will aid managers in the identification and analysis of factors, thereby contributing to the creation of a loyal base of satisfied clients The performance of hotel employees to choose from is due to the thriving tourism industry, which the hotel industry is thought to be the largest contributor (Rozana, Mohd, and Aziz 2011).

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One of the variables that can influence employee performance of the reward system can influence the service process in service companies. Employee performance will be influenced by the reward system. A system of rewards can motivate hotel employees (Kassahun, 2019). These findings indicate a strong positive relationship between the reward system and employee motivation at work Employee motivation is improved by the reward system, particularly for new employees who work in star hotels. Gifts can motivate hotel employees (Kassahun, 2019). These findings indicate a strong and positive relationship between the incentive system and employee motivation at work Employee performance is influenced by the reward system, which is a human resource discipline and a strategic partner with company management (Yang, 2018). Employee motivation is boosted by the reward system (Jehanzeb, 2012). Gift management is part of the main function in the HRM system that is familiarly applied to modern organizations, and is frequently used to attract, retain, and motivate employees (Milkovich and Newman, 2005 quoted in Yu, Ying Ying, and Angeles, 2011, pp 2).

3.2. Discussion

The reward system is widely applied in various business organizations and industries, one of which is business in star hotels. Star hotels ought to be able to reconsider successfully aligning their reward strategy with new realities to increase employee motivation and retention. The findings indicate that there is a positive and statistically significant relationship between the reward system and employee work motivation (Kassahun, 2019). Advertising, acknowledgment, advantages, job content, and working conditions. All pay does not affect employee work motivation.

In addition to the reward system, commitment to tasks also affects the performance of employees in the company. Commitment to the task is centralized motivation (Renzulli, 2017). A person who is committed to completing the task for which he is responsible means that he has made himself able to perform his duties (Dirwan, n.d.). The description of task commitment is an important part of the actions and deeds of talented people. The results of research aimed at employees in hospitality show a preference for hiring employees who are loyal and committed and will use all of their abilities to complete the work (Sohail et al., 2014). Worker empowerment implies ensuring that workers have the skill sets, competence, and independence to make jobrelated decisions (Kruja &Ha, 2016). Workers are satisfied when they participate in decision-making, receive proper job training and employee incentive programs, and work for effective managers.

Task commitment is often associated with high motivation to achieve goals. Research for employees in the hospitality field shows the choice of hiring staff who have loyalty and commitment, some of these employees will require the use of all of their skills to complete the work (Deepa et al., 2014). Career development is a component of human resource management in the tourism industry. Proses career development by enhancing the employability skills that individuals can achieve to achieve an expected career (Barnett & Bradley, 2007; Baruch, 2015), so career development can be a boon for companies and employees (Creed & Hood, 2015). Career development becomes part of individual career success while providing sustainability in organizations and industries (Dawson and Phillips, 2012:478) and being distinct from traditional career approaches. Career development is important with an impact on retaining employees who perform in weak organizations of the current generation (Dessler et al., n.d.).

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Career development becomes part of individual career success while providing sustainability in organizations and industries (Dawson and Phillips, 2012:478). Career development is part of a person's career success while providing sustainability in organizations and industries (Dawson and Phillips, 2012:478). The career development stage includes human resource planning, training, and development, performance assessment. The career development process will indirectly reduce the ambiguity of the role. When an employee or worker has ambiguity the role will affect improving performance. The point is ambiguity role as a concept of work responsibility and the level of authority that employees have is not clear. Role squabbles and confusion are frequently associated with negative outcomes for personal members and organizations as a whole. They can result in dissatisfaction with one's role and disrupted realities (Rizzo et al., 1970), declining satisfaction, decreased organizational effectiveness (Home and Rizzo, 1972), anxiety, decreased commitment, and decreased productivity. (Jackson and Schuler, 1985; Tubre and Collins, 2000).

The motivation used in this study is Erg Alderfer's motivational theory. This theory builds on Maslow's theory of motivational hierarchy in synchronization with empirical research. Claydton Alderfer (1969) states that humans have three types of core needs: Existence, Interconnection, and Growth. Based on empirical studies, Alderfer proposed the ERG theory to explain the relationship between satisfying human needs and desires. Additional empirical studies back up his theory (Robbins and Judge, 2008; Schneider and Alderfer, 1973). According to ERG theory, focusing on only one need at a time is insufficient to motivate. employees. Motivation can affect employee performance, incentives affect performance by affecting motivation levels, and positive performance is influenced by certain incentive media (Nurlina &Jumady, 2021). Hospitality businesses should be suitable for developing Employee engagement strategies that increase community involvement and improve employee-customer relationships to promote positive social change (Barbosa-mccoy, 2016).

Empowerment is the degree of autonomy and self-determination in people and communities. The goal is to encourage employees at every level to do something different and help employees to have the confidence and ability to make changes. Empowerment, participation, or participatory management is a classic term in business administration (Wilkinson, 2015). Some things related to individual attitudes and beliefs, both individually and as part of a group become a brief sense of empowerment (Collins, 2016). The results of another study proved that one study can be an important predictor of employee personal achievement, which can improve employees 'creativity and job satisfaction (Grobelna, 2020). Thus, the level of satisfaction in the corporate environment, and employees in the hospitality business need to have individual characteristics.

4. Conclusion

Human resource management (HRM) plays a role in organizational development, employee resources, learning and performance improvement, and providing services in optimizing employee welfare. Employee performance, as described, is the person's ability to carry out their job tasks. Workers can only be comfortable if they believe they are competent to do their job, which can be accomplished through a better training program.

According to one study, there is a link to the relationship between organizational commitment, job satisfaction, and job performance It was discovered that the commitment of the organization has a positive effect on job satisfaction and performance (Akhtar dan Durrani 2015).

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Frontline employees are usually the initial liaison between the company and its customers. The reward system will affect employee performance. Reward systems can motivate hotel employees (Kassahun, 2019). These findings suggest that there is a statistically significant positive relationship between the reward system and employee work motivation. The reward system, in particular, boosts employee motivation for employees who work in star hotels. Gifts can motivate hotel employees (Kassahun, 2019).

A person who is committed to completing the task for which he is responsible means he has made himself able to perform his basic duties (Dirwan, n.d.). Career development is part of one's career success while providing sustainability in organizations and industries (Dawson dan Phillips, 2013: 478). The career development stage includes human resource planning, training, and development, performance assessment. Role ambiguity is a concept of work responsibility and the level of authority that employees have but are unclear. Employees who experience role ambiguity feel unsure about which behavior is inappropriate. They can lead to job dissatisfaction, disrupted reality (Rizzo et al., 1970), lower satisfaction, lower organizational productivity (Home and Rizzo, 1972), lower commitment, and lower performance (Jackson and Schuler, 1985; Tubre and Collins, 2000).

Employee work motivation and the reward system have a positive and significant relationship. Employee motivation at work is significantly influenced by promotion, recognition, benefits, work content, and working conditions, whereas pay has a minimal impact (Kassahun 2019). Business-oriented organizational goals will not be achieved without employee motivation. (Zameer et al., 2014). Employee empowerment significantly encourages job enrichment and organizational commitment. Achieving a commitment between empowerment and satisfaction and organization (Ruiz-palomo et al., 2020).

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Reference

- Akhtar, A., & Durrani, A. B. (2015). The Impact of Organizational Commitment on Job Satisfaction and Job Performance: An Empirical Study from Pakistan. 17(6), 75–80. https://doi.org/10.9790/487X-17627580
- Andrew, O. C., & Sofian, S. (2012). Individual Factors and Work Outcomes of Employee Engagement. Procedia Social and Behavioral Sciences, 40, 498–508. https://doi.org/10.1016/j.sbspro.2012.03.222
- Arini, D. E. (2020). The Influence of Training, Customer Orientation and Work Engagement on The Hotel Supervisor Professionalism. 4(2), 114–124.
- Barbosa-mccoy, V. L. (2016). Hotel Managers 'Motivational Strategies for Enhancing Employee Performance. Budiyanti, E. (2020). Dampak Virus Corona Terhadap Sektor Perdagangan Dan. 2015. Collins, D. (2016). Empowerment in Organizations The Disempowering Logic of

Peer Reviewed - International Journal

Vol-3, Issue-4, 2019 (IJEBAR)

E-ISSN: 2614-1280 P-ISSN 2622-4771

https://jurnal.stie-aas.ac.id/index.php/IJEBAR

- Empowerment Article information: For Author Empowermentin Organizations
 The Disempowering Logic of Empowerment Article information: November.
- Dessler, G., Paulo, S., & Town, C. (n.d.). RESOURCE MANAGEMENT THIRTEENTH EDITION.
- Diayudha, L. (2020). Industri Perhotelan Di Indonesia Pada Masa Pandemi Covid-19: Analisis Deskriptif
- Indonesian Hospitality Industry in the Covid-19 Pandemic: Descriptive Analysis. 3(1).
- Dirwan, A. (n.d.). Kata Kunci: 379-391.
- Gössling, S., Scott, D., Hall, C. M., Gössling, S., Scott, D., & Pandemics, C. M. H. (2021). Pandemics, tourism and global change: a rapid assessment of COVID-19. Journal of Sustainable Tourism, 29(1), 1–20. https://doi.org/10.1080/09669582.2020.1758708
- Grobelna, A. (2020). Hotel Employees 'Individual Characteristics and their Service Outcomes: The Critical Role of Polychronicity. XXIV(2), 28–49.
- Guliyev, G., Avci, T., Öztüren, A., & ... (2019). Effects of professionalism on employee satisfaction and organizational commitment at five-star hotels in Baku. JEEMS Journal of East https://www.nomos-
- elibrary.de/10.5771/0949-6181-2019-3-423/effects-of-professionalism-on-employee-satisfaction-and-organizational-commitment-at-five-star-hotels-in-baku-volume-24-2019-issue-3
- Jehanzeb, K. (2012). Impact of Rewards and Motivation on Job Satisfaction in the Banking Sector of Saudi Arabia.
- 3(21), 272–278.
- Kassahun, B. (2019). Reward System and its Effect on Employees' Work Motivation in One and Two-Star Rated Hotels in Amhara Region, Ethiopia. 40, 30–42. https://doi.org/10.7176/JTHS
- Kruja, D., & Ha, H. (2016). Empowerment in the Hospitality Industry in the United States. January. https://doi.org/10.1080/19368623.2015.976696
- Nurlina, N., & Jumady, E. (2021). The Role of Motivation as Mediating Relationship Between Incentives and
- Employee Performance. Jurnal Economic Resource. http://jurnal.fe.umi.ac.id/ index.php/JER/article/view/732
- Puspita, N., Astawa, I. P., & ... (2021). Hotel Strategy in Facing the Covid-19 Pandemic (The Westin Resort Nusa Dua Experience). International Journal of. https://ejournal.catuspata.com/index.php/injogt/ article/
- download/38/33
- Rahma, V. S., Arvianti, G. F., & Tidar, U. (2020). The impacts of covid-19 pandemic in indonesia and china's hotel industry: how to overcome it? 2(1), 55–64.
- Renzulli, J. S. (2017). What Makes Giftedness: A Reexamination of the Definition. January 1979. Rozana, N., Mohd, N., & Aziz, Y. A. (2011). Potential Antecedents and Outcomes of Frontline Employees' Service Recovery Performance. 5(1), 114–139.
- Ruiz-palomo, D., León-gómez, A., & García-lopera, F. (2020). International Journal of Hospitality Management Disentangling organizational commitment in hospitality industry: The roles of empowerment, enrichment satisfaction and gender. International Journal of Hospitality Management, 90(June), 102637. https://doi.org/10.1016/j.ijhm.2020.102637

Peer Reviewed – International Journal

Vol-3, Issue-4, 2019 (IJEBAR)

E-ISSN: 2614-1280 P-ISSN 2622-4771

https://jurnal.stie-aas.ac.id/index.php/IJEBAR

- Sohail, B. A., Safdar, R., Saleem, S., Ansar, S., & Azeem, M. (2014). Effect of Work Motivation and Organizational Commitment on Job Satisfaction: (A Case of Education Industry in Pakistan). 14(6).
- Wilkinson, A. (2015). Empowerment: theory and practice. September. https://doi.org/10.1108/ 00483489810368549
- Yang, H. (2018). E ffi ciency Wages and Performance Pay. April 2008. https://doi.org/10.1111/j.1465-7295.2007.00069.x
- Zameer, H., Ali, S., & Amir, M. (2014). The Impact of the Motivation on the Employee's Performance in Beverage Industry of Pakistan. 4(1), 293–298. https://doi.org/10.6007/IJARAFMS/v4-i1/630