

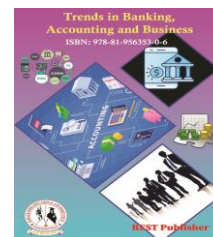


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A Study on Transforming Retail Stores with AI Real Time Video Analytics to Nextbrain Technologies at Bangalore

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Abstract: Key The integration of AI real-time video analytics software is revolutionizing the retail industry, providing unprecedented capabilities to enhance store operations, customer experience, and security. This paper delves into the transformative effects of deploying AI-driven video analytics in retail settings. By utilizing advanced machine learning algorithms and computer vision, AI video analytics software can process and analyze live video feeds from in-store cameras, delivering actionable insights and real-time alerts. Applications of this technology include customer behavior analysis, inventory management, and loss prevention. AI video analytics enables retailers to track and interpret customer movements and interactions, offering valuable data on shopping patterns, dwell times, and product engagement. This information supports data-driven decisions to optimize store layouts, product placements, and marketing strategies, ultimately improving customer satisfaction and sale. Furthermore, the software enhances security by detecting and alerting staff to suspicious activities and potential thefts, thereby reducing losses and increasing store safety. The implementation of AI real-time video analytics also raises important challenges and ethical considerations, such as ensuring customer privacy, securing data, and maintaining transparent AI processes. Addressing these concerns is crucial for gaining consumer trust and regulatory compliance. Additionally, this paper explores future trends, including the integration of AI video analytics with Internet of Things devices and augmented reality to create more engaging and efficient retail environments.in the next brain technologies in Bangalore branch .A structured questionnaire was used together the primary data from 60 employees and clients from nextbrain technologies Bengaluru. The statistical tools used for data analyzing is chi-square, one way anova and the pearson correlation coefficient with the use of SPSS and vision facts AI analytics software.

Keywords: security, retail growth, human detection, AI video analytics.

1. INTRODUCTION

In the rapidly evolving landscape of retail, the integration of cutting-edge technologies has become imperative for businesses to stay ahead of the curve. Among these technologies, real-time AI video analytics software stands out as a powerful tool for transforming traditional retail stores into dynamic, data-driven hubs of innovation and customer engagement. By harnessing the capabilities of AI and video analytics, retailers can gain invaluable insights into customer behavior, optimize operational efficiency, and create personalized shopping experiences that drive growth and loyalty. Real-time AI video analytics software revolutionizes the way retailers understand and interact with their customers. Through advanced computer vision algorithms, this software can analyze live video feeds from in-store cameras to extract a wealth of actionable data in real-time. From foot traffic patterns and dwell times to demographic information and customer interactions with products, the software provides retailers with a comprehensive understanding of how their stores are performing and how customers are engaging with their brand. One of the most significant advantages of real-time AI video analytics software is its ability to enable personalized and targeted marketing strategies. By recognizing individual customers as they enter the store, the software can deliver personalized recommendations and promotions based on their past purchase history, preferences, and browsing behavior. This hyper-targeted approach not only enhances the customer experience but also increases the likelihood of conversion and upsell opportunities.

2. OBJECTIVES OF STUDY

To study the transforming retail stores with the help of AI video analytics software
To identify the various measures provided to the customer.
To know their satisfaction towards the security.
To understand how measures improve the growth of the company.
To find out employees preference regarding welfare measures which they like to have in future.
Improve productivity and efficiency of employees at workplace.

3. SCOPE OF THE STUDY

The study has been conducted to analyze the factors which influence the AI video analytics preference towards the welfare measures followed in retail stores. This study analyses certain parameters like cleanliness around the work-place, removal of dust and wastage, adequate lighting, quality drinking water and food, good rest-rooms, adequate medical facilities, good toilet facilities, Sufficient first aid boxes, adequate security instruments like mask, shoes, helmet etc., This will be helpful to know about the various levels of welfare schemes and the organization's benefits extended to the employees present study has been undertaken to study find out effectiveness of employee welfare measures in transforming retail stores to find out the practical difficulties involved in welfare measures that can be evaluated through this study. The study can be used to bring out the solution for the problem faced by the employees availing the welfare measures.

4. LITERATURE REVIEW

Anthony C. Caputo 2010: The core foundation of DVS is the convergence of digital technologies and its software interface. Thanks to that software interface, DVS can become more intelligent simply by programming it to be smarter or adding programs to make it smarter. In Chapters 2 and 3, I analyzed facial and license plate recognition software, but those applications are only the tip of the iceberg. Even if the current VMS system doesn't provide better video analytical intelligence, there are new software applications being developed that use existing video footage to improve business processes and protect people and property. Vlado Damjanovski, 2011: With the introduction of the IP CCTV and more intelligent software video analytics has become more powerful and more promising. Starting from the ubiquitous automatic face recognition, vehicle number plate recognition, and counting objects up to detecting loitering in an area and speed and direction of vehicles in motion. Clifton L. Smith, David J 2015: The digital enhancement of CCTV systems has provided a more effective and increased capability of surveillance imaging systems for security applications. The development of enhanced CCTV systems through automation and intelligence has converted these systems into powerful and responsive management tools (Garcia, 2008). Thus, the integration of computer processing and CCTV images has produced a powerful device for the detection of intruders. Pethuru Raj 2021: Brick-and-mortar retailing is facing tough competition from B2C e-commerce due to the pandemic situation prevailing across the globe. As the world is through the third wave, online e-commerce activity is gaining momentum. How to empower physical stores to compete with virtual stores is the challenge. Abderrezak Rached 2023: based e Health services such as remote monitoring, remote consultation, remote surgery requiring ultra-high-definition video quality and massive data transmission cannot be achieved without a smart Edge layer running IA/ML algorithms to enhance QoS provision. Nevertheless, Edge computing raises two main challenges. Firstly, the complexity of computational tasks is proportional to energy consumption.

5. RESEARCH METHODOLOGY

Meaning of Research Methodology as a scientific and systematic search for pertinent information on a specific topic. We can say research is an art of scientific investigation related to the topic. Typically, it encompasses concepts such as paradigm, theoretical model, phases and quantitative or qualitative techniques. Scientists have undertaken research on them and find their causes, solution, explanations and applications.

INTERPRETATION: The above table chart that 20% of the respondents are strongly agree respondents, 55% of the respondents are agree respondents, 17% of the respondents are neutral respondents and 8% of the respondents are disagree respondents. Thus the majority of the respondents are rate the agree on sitting arrangement of the organization.

6. DATA ANALYSIS

TABLE 1. Employee’s detection based on rate the AI analytics by the organization.

| CONVEYANCE | NO OF RESPONDEN | PERCENTAGE |
|-------------------|-----------------|-------------|
| Strongly agree | 15 | 25 |
| Agree | 30 | 50 |
| Neutral | 8 | 13.33333333 |
| Disagree | 6 | 10 |
| Strongly Disagree | 1 | 1.666666667 |
| TOTAL | 60 | 100 |

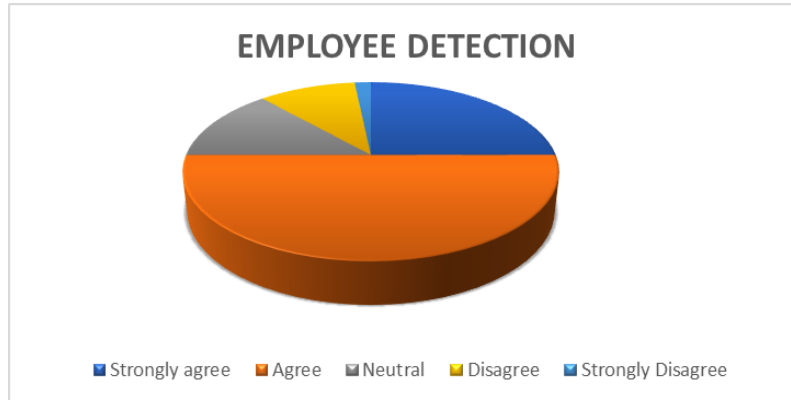


FIGURE 1

Chi-square test:

TABLE 2. Difference between Gender with respect to health and safety

| Chi-Square Tests | | | |
|-------------------------------------|--------------------|----|-----------------------------------|
| | Value | df | Asymptotic Significance (2-sided) |
| Pearson Chi-Square | 2.924 ^a | 4 | .571 |
| Likelihood Ratio | 3.204 | 4 | .524 |
| Linear-by-Linear Association | .002 | 1 | .960 |
| N of Valid Cases | 60 | | |

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is .84.

Interpretation: The above table chart that 0.571% of significance are human detection Chi-Square and 0.524% of significance are grouping detection ratio and 0.960% of significance Linear-by-Linear Association and the number of valid cases count is 60. The 50 % of expected count is less than 5. The minimum expected count is 60 in the Chi-Square test.

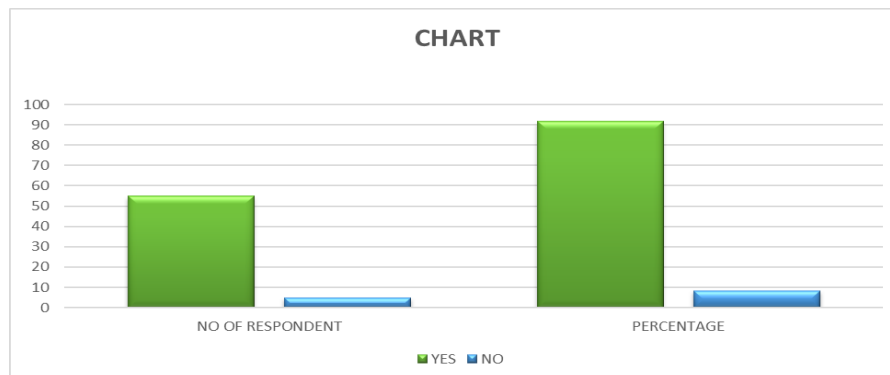


FIGURE 2. Difference between Gender with respect to Health and safety

7. FINDINGS

1. Majority of 58% of employees are male
2. It is found majority of employees are 18-32age
3. Most of the employees says that welfare measures help in solving problems faced by them
4. About 65% of the employees are agree with welfare facilities provided by the company
5. 65% of employees are less than 2 years experienced
6. Majority of 50% of employees are agree the working environment in the company
7. The AI video analytics is to developing software and 90% its completed
8. The office data is maintaining of safe and securely.
9. 90% clients are accepted the real time AI video analytics.

8. SUGGESTIONS

The Management has to improve the adequate items of the food which is one of the most important basic amenities and it helps to satisfy the employees. Rest room facility has to be sufficiently provided. The company should change the office atmosphere. The network facility is not good so need to improve the internet. New employee welcoming manner is not properly so the company should change the habit. The employees dose not wear the identity card so the employees should change the habit The proper communication does not give the new employees. Conduct more training sessions where the employee relaxation is improved. Employees are feeling that the work life balance is moderate and has to be improved.

9. CONCLUSION

The objective of the study was to know the various welfare measures adopted NEXTBRAIN TECHNOLOGIES (BANGLOURE BRANCH). of company and to know the effectiveness of real time AI video analytics in transforming retail stores measures in the company from this study we can understand that 90% of the clients and employees satisfied for security and performance. In future the retail stores are highly getting growth by AI real time video analytics software.

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