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Exploring the Influence of Music on Work Performance Among IT Sector Employees

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Abstract:
Employees are the cornerstone of an organization's progress and prosperity. Today, businesses recognize them not just as contributors to productivity, but as essential partners and stakeholders crucial for achieving long-term objectives. Music serves as a powerful tool for enhancing mood and reducing stress, making it a significant aid in restoring focus and momentum at work. Our experiment delves into the effects of music on the work performance of young employees aged 20-25, shedding light on its potential benefits in optimizing productivity and well-being
.

Keywords: Music, work performance, employees, stress

I. INTRODUCTION

Employees represent the core strength of any company, propelling sales growth and driving business success. Their motivation and productivity are key to achieving optimal performance. To cultivate a high-performing workforce, companies prioritize creating an engaging environment through initiatives like flexible work hours, recreational spaces, and team-building activities. Music emerges as a crucial component in this effort, serving as a stress reliever and mood enhancer that inspires employees to excel. Despite its perceived benefits, there's a lack of concrete research or data-driven experiments in this area within the Indian context. The paper aims to fill this gap by exploring the impact of music on employee performance, offering valuable insights for organizations seeking to maximize their human capital.

II. OBJECTIVES

- The purpose of the study is to explore and analyze the impact of music on the work performance of the employees.
- The type of organization that we are focusing on is IT sector in Indian culture.
- The paper focuses on employees typically working in closed cubicles.
- The collected data from the paper can be used to get a basic overview of how music affects the day-to-day life of people.
- The experiment focuses mainly on employees in the age group of 20-25 years.

III. PROPOSED METHODOLOGY

- For this we conducted experiments on some selected volunteers.
- The test consisted of :

1. 10 mathematical aptitude questions
2. 10 logical reasoning questions

- The question papers were divided into 4 sets, each set having 20 questions each of equal difficulty.
- The test was of 15 minutes.
- All volunteers were required to wear heart rate monitoring bands during the tests.
- The heart rate of the volunteers were measured at 4 minute interval during the test.
- The volunteers' score and heart rate were monitored.
- They took their tests with different genres of music playing in the background:

1. Soft
2. Pop
3. Metal/Rock
4. EDM.

- The result was derived from the above given factors.

IV. HARDWARE AND SOFTWARE REQUIREMENTS

These are the minimum system requirements for the smooth functioning of the project:

- System with Bluetooth connectivity and any operating system for playing music.
- Speakers to play music.
- Health band with heart rate monitoring facility.
- Stopwatch

V. IMPLEMENTATION DETAILS

Following are the steps that were implemented during the course of development of this project:

Step 1: Preparing Questionnaire.

In this step we made four sets of question paper A, B, C, D respectively. Each set consisted of 20 questions of equal difficulty, out of which 10 were of mathematical aptitude and 10 were of logical reasoning.

Step 2: Preparing for the Experiment.

In this step we selected music of all the four different genres i.e. soft, pop, EDM and rock/metal. We then set the stopwatch for 15 minutes. Then the volunteers were asked to wear the health bands.

Step 3: Conducting the Experiment.

After the preparation of the experiment we started conducting our experiments. Then the music was turned on and the volunteers were asked to start solving the paper.

Meanwhile the heart rate of the volunteers was simultaneously monitored on mobile application connected with the health bands.

Step 4: Analyzing the results.

Eventually, after the completion of the test, the answer of the volunteers were checked and the heart rate along with the marks of each volunteer was recorded.

VI. RESULT

The following observations were made after conducting the experiments on 10 candidates:

- The highest performance, considering both score and heartbeat, of candidates was observed in case of soft music.
- The lowest performance, considering both score and heartbeat, of candidates was observed in case of

rock/metal music.

- In case of EDM and pop music the performance of candidates, considering both score and heartbeat, was intermediate between soft and rock/metal music with pop showing a little better results.

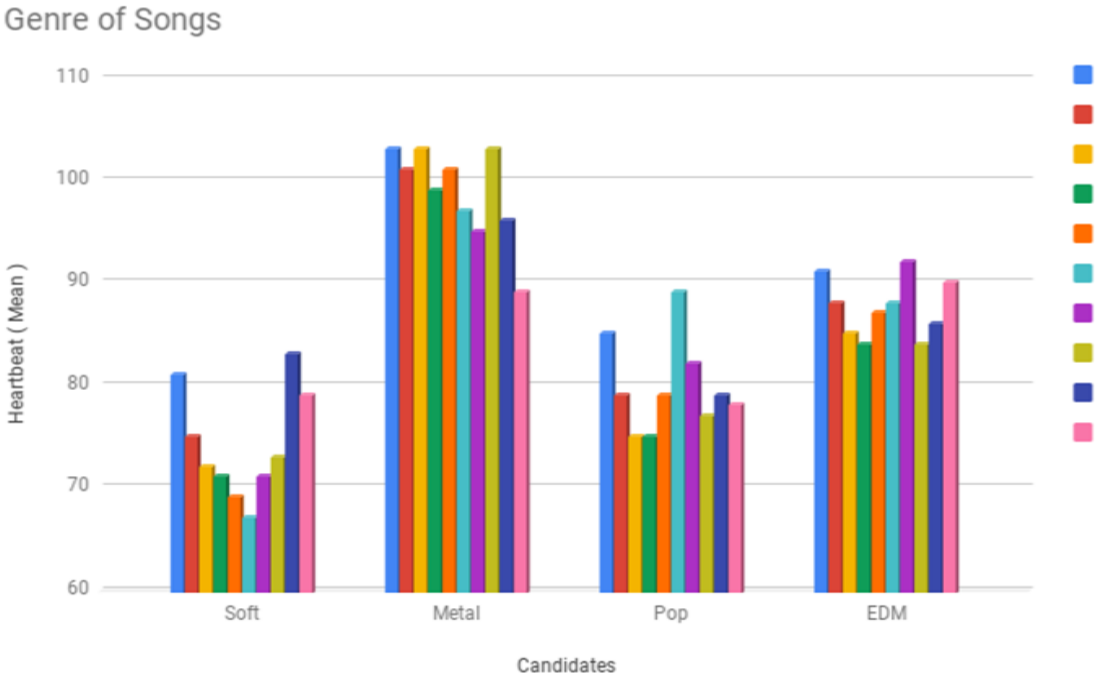

Fig 1. Screenshot of heartbeats of one of the candidates during the test

Fig 2. Graph showing Music vs. Heartbeat of 10 candidates for each music genre separately

- The heart rate of the volunteers was measured at 4 minute intervals during the test.
- The heartbeat data used in results for each candidate is the mean of all the heartbeat values in one

test.

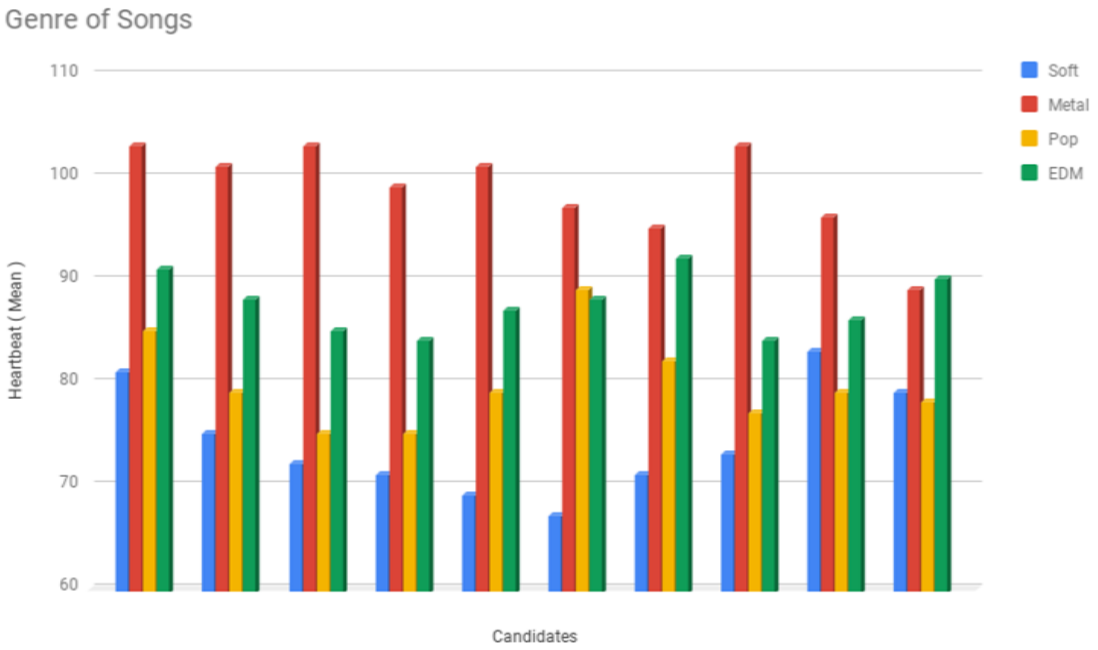

Fig 3. Graph showing Music vs. Heartbeat for individual candidate

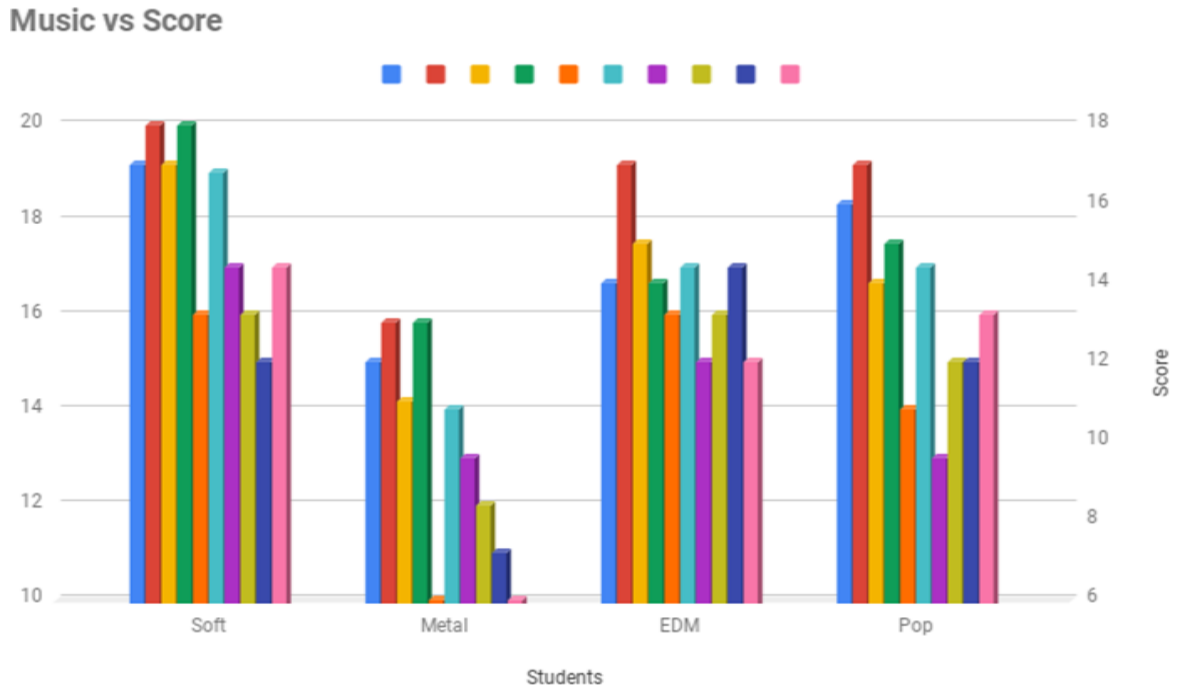

Fig 4: Graph showing Music vs. Score (out of 20) for all candidates for each music genre separately.

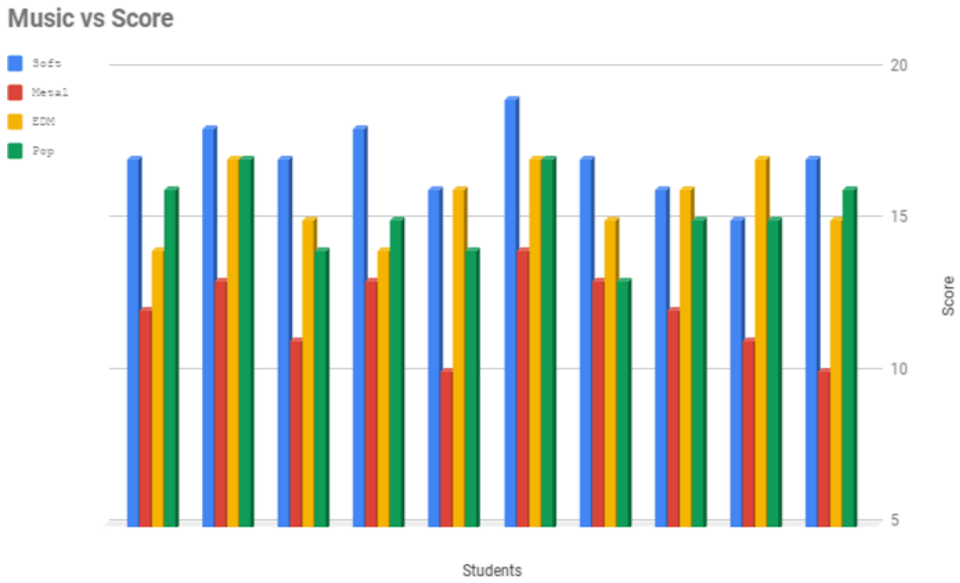

Fig 5: Graph showing Music vs. Score for individual candidate

VII. CONCLUSION

We observed the following conclusions after conducting our experiment:

- Work performance boosted up when volunteers heard soft/soothing music. The heart rate of such volunteers was rather calm or moderate when soft/soothing music was played.
- A decline in work performance was observed when volunteers heard rock/metal music. The heart rate of such volunteers increased when rock/metal music was played.
- In case of EDM and pop music the work performance of volunteers was intermediate between soft and rock/metal music.

VIII. CHALLENGES FACED

- The devices used to measure heart rate (MI health bands) were not very accurate and had some physical limitations.
- Faced problems in maintaining the similar difficulty of question paper sets.
- Faced some problems in perfectly creating close cubicle environment like in real offices.

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4. For EDM https://www.youtube.com/watch?v=2ZC3rM 2Y8jQ
5. For Rock/Metal Music https://www.youtube.com/watch?v=BxDiQh NO780