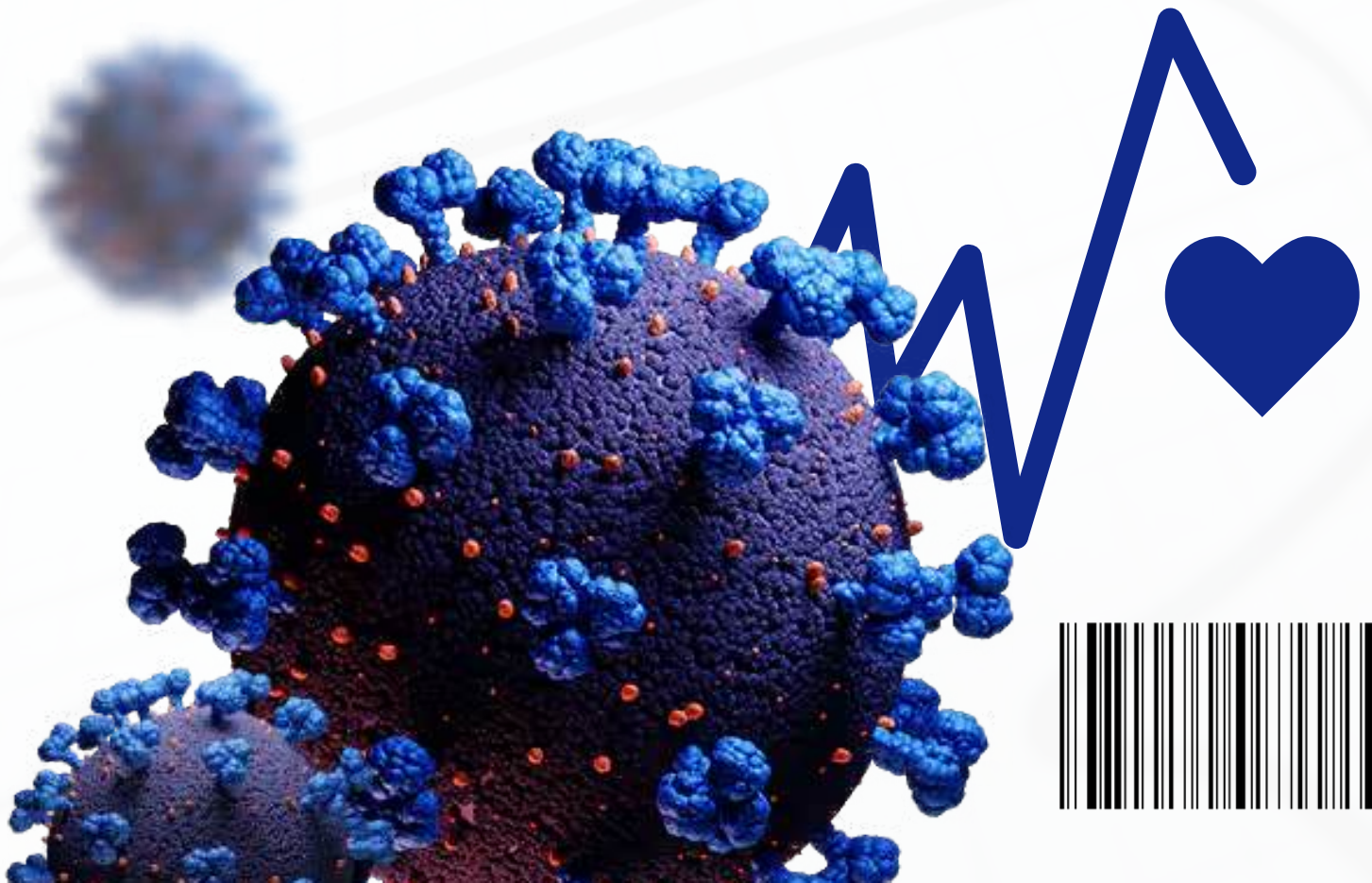


DIMEDICA

By Walter Andrés Paz Callizo

Data Analysis through
the usage of SQL,
Tableau and **More +**

COVID-19 and
its impact





Executive Summary

The COVID-19 pandemic had profound impacts on the job market, affecting industries worldwide. This report examines the shifts in job stress, security, and economic stability across several sectors, including **Information Technology (IT), Education, Health Care, and Retail**. Data from Hospital Databases (HD) and SQL-based segmentation techniques provide insights into how job stress and security varied across these sectors. Key findings highlight that **IT and Education sectors faced the most significant challenges**, with increased workload, adaptation to digital transformations, and shifts in work environments. Additionally, a notable increase in stress levels across high-stress and medium-stress job categories was observed, emphasizing the need for effective contingency planning for potential future pandemics.





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Introduction

The global pandemic of the 2020's reshaped employment across industries, intensifying challenges in job security, workload, and financial stability. This report investigates the lasting changes in job impact and sector-specific stresses, particularly in **IT, Education, Health Care, and Retail**. With insights from hospital databases (HD), the study presents hypothetical scenarios for preparedness in case of future global health crises. **SQL-based segmentation** was utilized to analyze industry data, identifying patterns in job stress levels, job security, and health issues.





Introduction

Findings

Sectoral Stress and Salary Changes

The **IT sector** experienced the highest job stress levels, with Education, Health Care, and Retail following closely. Salary changes (SC) across industries indicated notable shifts: **IT (26.59%), Education (25.36%), Health Care (24.59%), and Retail (23.46%).**

Job Security Across Stress Levels

Job Security (JS) varied by stress level across sectors, with 984 workers in high-stress, 1,633 in medium-stress, and 648 in low-stress categories.



Introduction



Workers in medium-stress positions were the most affected, with 4,956 impacted by COVID-19, 1,465 facing health issues, and 921 workers in high-stress roles.

Industry-Specific Adaptations

IT and Education sectors required significant restructuring to transition into digital models, focusing on remote work and digital learning.

Health Care and Retail faced constant demands for in-person roles and high exposure levels, though both sectors maintained essential service delivery.





Introduction

Operational Segmentation via SQL

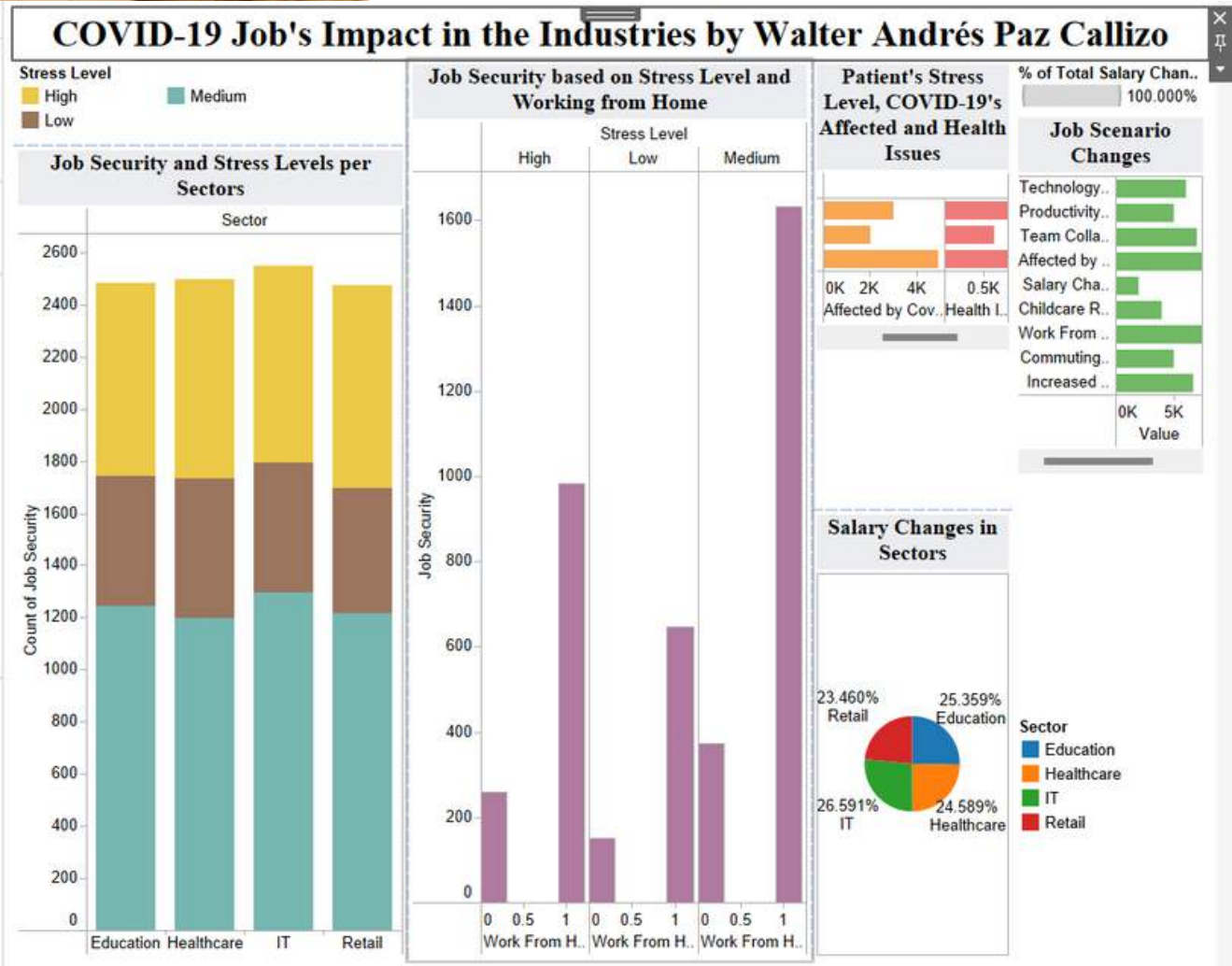
SQL proved useful for segmenting and managing medical service data, improving readiness for customer support and preparation in health care settings.

Work Hours

Education saw the most extended working hours, followed by IT, Retail, and Health Care. Increased meetings and hours were common across these industries.



Results from Procedure



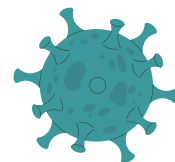
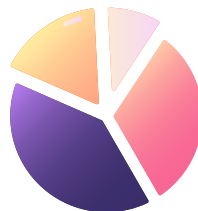


Results from Procedure

Dashboard's Link

Paz Callizo, W.A. (2024). *COVID-19's Impact in the Job's Industries.*

<https://public.tableau.com/app/profile/walter.andr.s.paz.callizo/viz/COVID-19JobsImpactintheIndustriesbyWalterAndrsPazCallizo/Dashboard1?publish=yes>



Results from Procedure

What does the Medical Staff and Hospital's Team Need?

They want to know the substantial changes in job's impact for the many affected by **COVID-19** during the **2020's pandemic**. Additionally, they are looking forward to discover more about the sectors mainly affected put of the **Hospital's Databases (HD's)** into the hypothesis scenario of what would happen if another global pandemic stopped everything occurring for the growth of any consistent preparation.

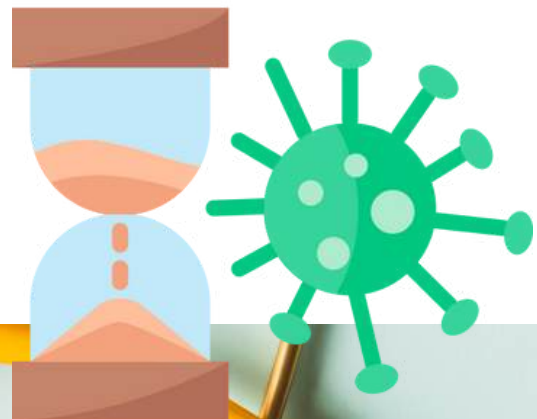
Although, the building of a trustworthy basis is essential for any **Health Care** involved organization while maintaining the potential records for any predictions among the possible management for the hospital and country.



Results from Procedure

Key Observations

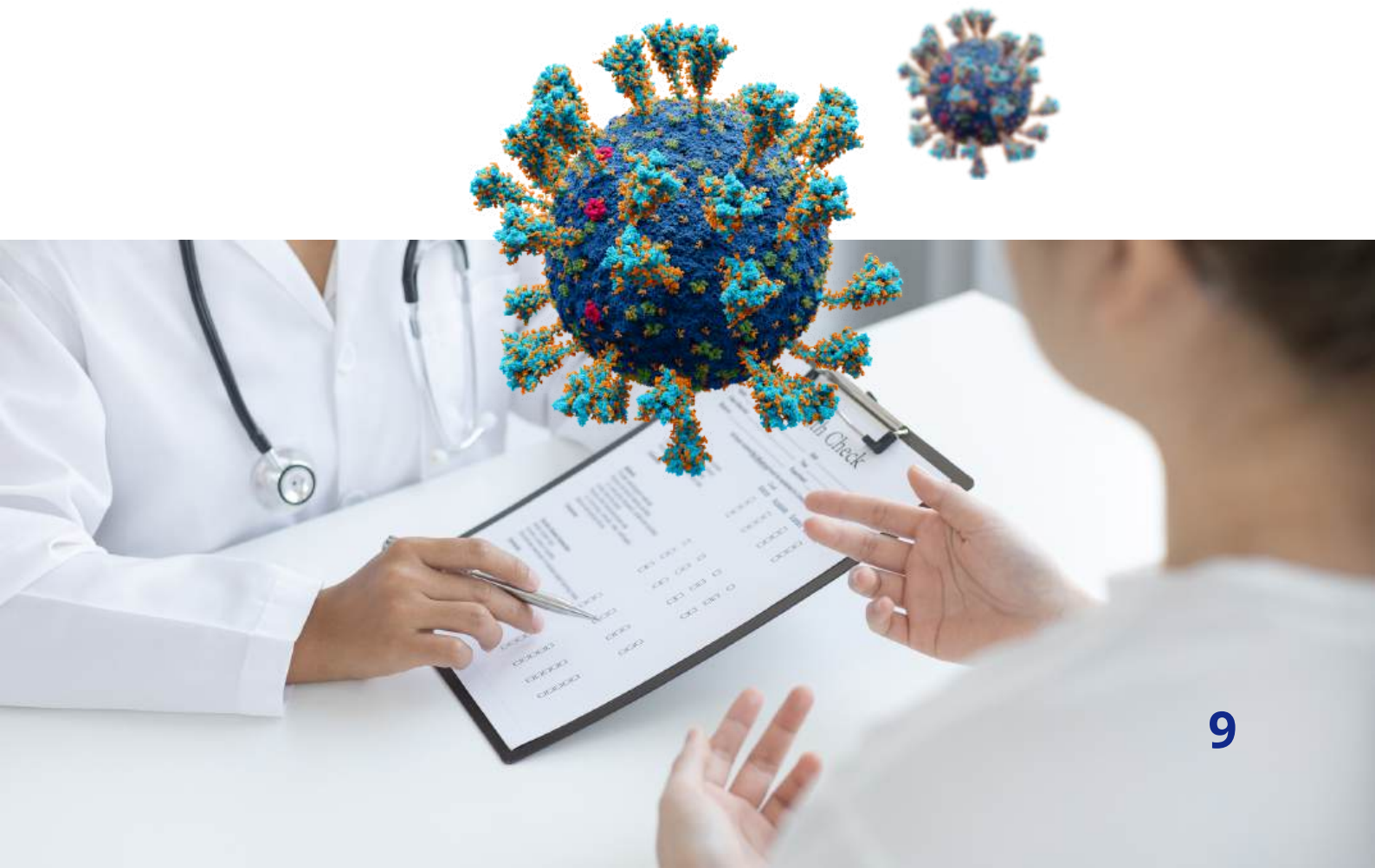
Some of the key observations is the fact that the Industries of **Information's Technology (IT)** has more higher and medium-leveled stress in measurements of the comparison with **IT, Education, Health Care (HC) and Retail's Industry**. Now in measurements of Salary Changes (SC) the **Information's Technology (IT's Industry)** 26.591 percentage, the 25.359 percentage in the **Education's Industry**, 24.589 percentage in the **Health Care Domain** and a 23.460 percentage inside of the **Retail's Industry (RI)**.



Results from Procedure

Key Observations

Additionally, the levels of stress have also influenced on who have a stable and financially optimal, **Job Security (JS)**, **health and efficiency in their jobs**. However, it is essential to have the consideration on how it is increasing its numbers. If we use the **Software SQL for Segmentation** we can observe it is notable in the example for the career of **Information's Technology (IT)** being the most crucial accompanied by the **Educational Sector, Retail (Business) and, surely, Health Care itself**.



Results from Procedure



The **Job Security (JS)** inside of these industries is the **High Stressed Level Job's Security** has at least 984 workers, **Medium Stressed Level Job's Security** has at least 1,633 workers and the **Low Stressed Level Job's Security** 648 workers. Also, the amount in general inside of the **Medium Stressed Level** there are 4,956 workers whom are affected by COVID-19, 1,465 with Health Issues (HI), High Stressed Level with 3,036 workers affected by COVID-19 and 921 workers with 3,036 affected by COVID-19 and Low Stress Leveled workers with 625 with Health Issues and 2,008 COVID-19's affected.

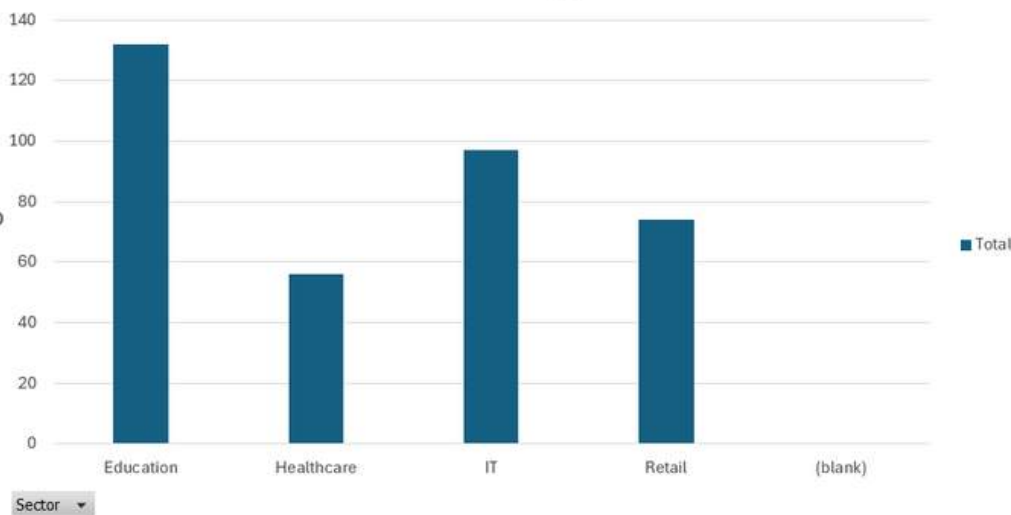


Results from Procedure

These are some of the outlines seen in the presented data flows. In the following operative segmentation there is a determinant influence among the seeking of what the hospitals had as clients with the **COVID-19's impact**.

Sum of Hours_Worked_Per_Day

Hours Worked Daily per Sector



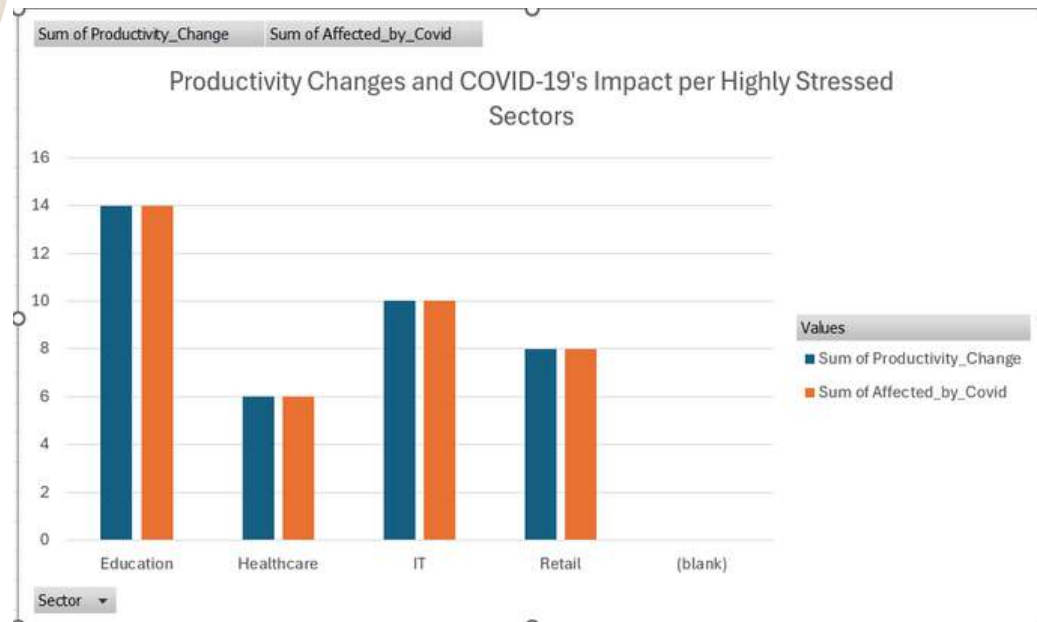
The most hours worked per day in sectors is for the **Educational Domain** followed by **IT, Retail and Medical Sector** according to the data.





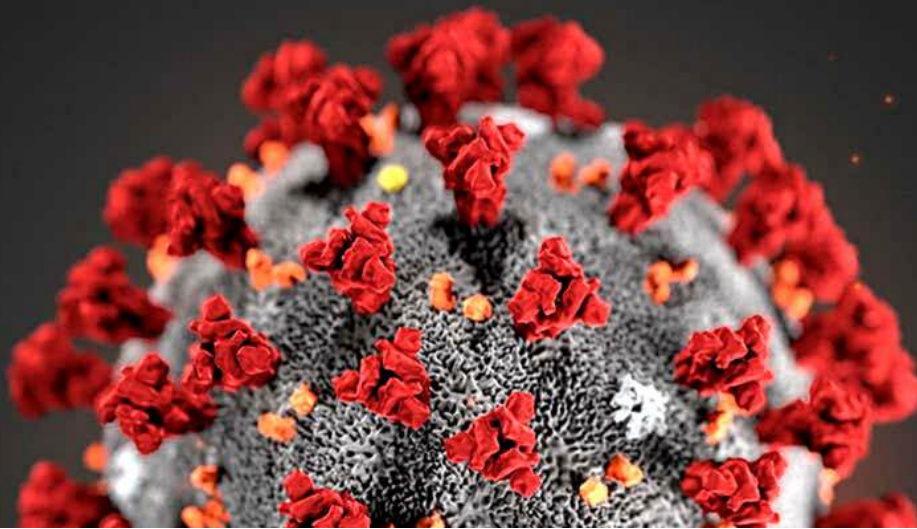
Results from Procedure

In spite of IT having a huge growth due to programmers working from home and other organization using countless hours of their time to distribute tasks, the **Educational sector, Health Care and Retail** still had a lot of **Meetings and Working Hours** constantly.



Row Labels	Sum of Meetings_Per_Day	Sum of Health_Issue
Education	41.88343952	14
Healthcare	21.87783459	6
IT	39.15074363	10
Retail	31.34134051	8

SQL definitely helps not only adding into data bases but also supports in segmentizing the customer's accounted into the medical services for further preparation.



Results from Procedure

However, in the end the most affected industry overall is the **technological industry and the educational sector** due to the time needed for the reconstruction of a system for the digital change into a new business model for the scholars learning more about how to transition into the digital environment while adapting to a new reality.



The many companies will now have a better preparation as **Contingency Plans** in a future as it is necessary to have the hypothesis of a possible outbreak for a virus and the considerations of worrying inside the industrial environment with the **High Stressed and Medium Stressed Workers** as possible patients with certain **Health Issues (HI)** initially.





Recommendations

Develop Sectoral Contingency Plans

Institutionalize comprehensive contingency plans in these high-pressure sectors of IT and Education, pertaining to operational continuity during pandemics, support of digital infrastructure, and work-from-home models.

Invest in Digital Transformation for Education and IT

Invest in enhancing the digital capabilities, especially in education, where new models of learning have to be resilient and agile.





Recommendations

Medium- and High-Stress Workers

Increase job security, mental health support, and wellness programs within the high and medium categories, especially in the IT and Health Care sectors.

Integration of SQL to Support Healthcare Preparedness

Extend the SQL-based segmentation of data across the various databases of hospitals for better tracking and response time regarding patient needs during future crises.



Conclusion



The pandemic brought into light vital weaknesses that were prevalent in every industry relating to preparedness, digital resiliency, and workforce support. **IT and Education** were found to be the most stressed sectors because both had to take up very urgent actions and adapt to working and learning models that were fully remote and digital. Contingency planning in the future at all levels and strengthening the digital infrastructure will be highly crucial in assuring business continuity in case of any disaster.





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