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The Design of Work Systems in Several Different Manufacturing Industries

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ABSTRAK

Proses produksi harus dipandang sebagai suatu proses perbaikan terus-menerus, yang berbentuk suatu siklus yang diawali dengan konsepsi ide untuk memproduksi suatu produk, berlanjut melalui pengembangan produk, proses produksi, dan akhirnya diakhiri dengan distribusi kepada pengguna akhir. . Sekumpulan usaha yang terutama bergerak dalam produksi dan pengolahan bahan mentah atau barang setengah jadi menjadi produk jadi atau siap pakai disebut sebagai industri manufaktur. Tujuan dari penelitian ini adalah untuk mengetahui gambaran kenaikan produktivitas kerja yang terjadi ketika ada perancangan sistem kerja, serta mengetahui perbaikan apa saja yang berguna untuk perancangan sistem kerja pada berbagai usaha manufaktur.

ABSTRACT

The production process should be viewed as a process of continuous improvement, which takes the form of a cycle that begins with the conception of the idea to manufacture a product, continues through product development, the production process, and finally ends with distribution to the end user. A set of businesses primarily engaged in producing and processing raw materials or semi-finished items into finished or ready-to-use products is referred to as the manufacturing industry. This study's objective is to determine the presentation of the rise in work productivity that occurs when there is work system design, as well as to find out what kinds of improvements are helpful for the design of the work system in a variety of manufacturing businesses.

INTRODUCTION

Several cycles, beginning with the idea to manufacture a product, product development, production process, and distribution to consumers, are the beginning of the production process, which must be viewed as a continual improvement. In order to achieve quality items in accordance with designs that have been selected based on the market's wants, at the most affordable price possible. To accomplish this goal, it is necessary to eliminate waste that happens during the production process. This can be accomplished by planning and controlling the production process efficiently.

To successfully plan and regulate production, it is necessary to have an effective capacity planning system in place. This will allow the production schedule to be strictly adhered to. Due to a lack of capacity, the firm will be unable to reach its production targets, delays in delivering products to clients, and a loss of trust in the formal system. These factors will lead to a decreased or completely lost reputation for the company.

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Excess capacity, on the other hand, will lead to poor levels of resource utilization, increasing costs, product pricing that are not competitive, declining market share, decreasing profitability, and a variety of other negative outcomes. As a result, the production system will be negatively affected by either a shortage of capacity or an excess of capacity; therefore, efficient capacity planning involves providing capacity in accordance with the requirements at the appropriate stage. Industry is able to make use of information technology to boost firm performance as a result of the ever-increasingly rapid growth of information technology. Companies are able to receive information that is quick, exact, and accurate thanks to the utilisation of information technology, which enables the flow of information to operate in an optimal and integrated manner.

A number of different parties or departments inside a single organization are able to make use of the database system as a type of information distribution system. Additionally, one of the applications of the database system is in production systems.

The systematic evaluation of various publications that were assessed based on work system design is what makes this research unique. This review leads to successful employee ergonomics in terms of staff members' safety, comfort, and health. A work system design in the manufacturing industry in Indonesia is going to be identified and analyzed as part of this study project.

METHOD

This research approach involves conducting an analysis of a number of articles that focus on the design of work systems in the industrial sector. Through the process of gathering and analysing a number of publications, the research technique was obtained. After the research was examined and evaluated, the results were obtained by taking into account the type of industry, the author, the year of publication, and the findings of the research.

RESULT AND DISCUSSION

A discussion of the associated results and discussion based on the collection of identity data, processing of the data, analysis, and conclusion will take place in this part.

Determine the Article Used for Data Collection

There were a total of 22 articles collected during the identification stage of the data collecting process. These articles were collected based on the title System Design Work in Variety of Manufacturing Industries.

In Table 1, you can see the results of the collection of articles that were collected.

No	Author, Object Year	Results	Research
1	[7] (Ramdhani & Supena, 2022)	Utilizing raw materials in the design of an inventory information system	Raw material supplies for information systems are stored in the warehouse in the form of a website that is based on online applications.
2	[8] (Andrian & Kurnianto, 2021)	The process of removing mirrors	Attempt to correct your poor posture.

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		from the device.	
3	(Yulianti et al., 2021)	The Pig Midges	Having the ability to control DC motors, speakers, and sensors as well as outputs
4	(Aji Pradana et al., 2020)	Considering the earliest possible date for production scheduling	Able to reduce the number of instances of lateness in order completion that occurred
5	(Samal, 2019)	Logistical performance measurement and analysis	Easy and quick analysis of the operation of the logistics system
	(Yunita, 2019)	Method of analysis and application (also known as AHP)	elaborate on the complexity of that problem.
6	(Sutisna, 2019)	The use of 3D printing	Free and open-source software and firmware that may be obtained quickly and freely online
7	(Hakim & Anugraha, 2017)	Textile card jacquard with a hole stitched on the shopping machine	Increase the capacity of production while simultaneously reducing the amount of work that has to be done.

An examination of both strengths and weaknesses

According to the findings of this literature review, the author discovered the positive aspects of each of the journals that were examined. Specifically, journal writing, industry, and scientific research are the three pillars upon which strengths are structured. A comprehensive and concise explanation of the journal is provided, beginning with the abstract, followed by the introduction, the literature review, the methodology, the results and discussion, and finally the conclusion. The implementation of work system design prior to mass production offers a number of benefits to businesspeople. These benefits include the ability to attain ergonomic levels for employees, the enhancement of work safety systems, the enhancement of work comfort, and the maintenance of employee health.

In addition to the benefits of literature study, the author discovered a number of drawbacks based on journal writing, industry, and scientific research. Due to the lack of organization in the journal writing format, it is difficult for writers to recognize literature they have written. In order to successfully implement work system design, a significant amount of time is required. In order to achieve the best possible results, it is necessary to take methodical actions and to monitor the situation on a consistent basis. Researchers have a wide variety of options to choose from when it comes to

problem-solving, resulting in neglecting working system design. There are many new tools in modern life.

CONCLUSION

Drawing from the conducted study, it can be inferred that the warehouse's planned architecture makes it possible for significant results to be produced as a consequence of the data analysis that has been carried out. In terms of the findings acquired by determining the year of publication of publications associated with work system design, most articles were found in 2019. The design of work systems in the manufacturing business is extremely supportive in generating work that is productive, comfortable, and efficient simultaneously. Because of this, it significantly impacts the process of enhancing the quality of work in the industrial environment.

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