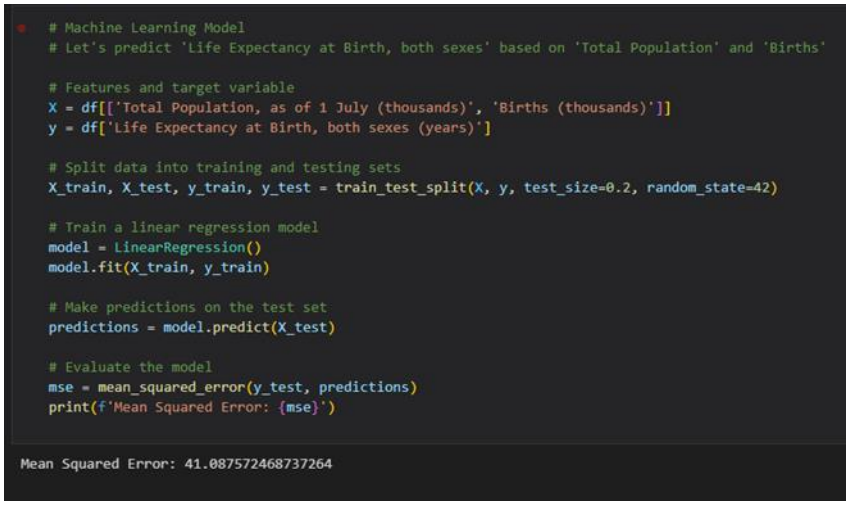
To enhance the accuracy of AI predictions, machine learning algorithms are employed [3]. The Mean Squared Error (MSE) is utilized as a measure of the average squared difference between predicted and actual values. For life expectancy in both sexes, the MSE is calculated as 41.09 (Fig. 3).



```
# Machine Learning Model
# Let's predict 'Life Expectancy at Birth, both sexes' based on 'Total Population' and 'Births'

# Features and target variable
X = df[['Total Population, as of 1 July (thousands)', 'Births (thousands)']]
y = df['Life Expectancy at Birth, both sexes (years)']

# Split data into training and testing sets
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

# Train a linear regression model
model = LinearRegression()
model.fit(X_train, y_train)

# Make predictions on the test set
predictions = model.predict(X_test)

# Evaluate the model
mse = mean_squared_error(y_test, predictions)
print(f'Mean Squared Error: {mse}')
```

```
Mean Squared Error: 41.087572468737264
```

Fig 2. Model of the algorithms to increase the accuracy of predictions made by AI [3]

Conclusion

Based on the comprehensive analysis conducted using data from Power BI, SQL Server, and Kaggle ML models, several key insights have emerged regarding economic trends in Turkey.

While Power BI provided detailed visualizations of economic metrics, SQL Server facilitated data storage and management, enhancing the analytical process. Additionally, insights gleaned from Kaggle ML models contributed to a deeper understanding of predictive trends. Ultimately, this research underscores the importance of leveraging diverse data sources and analytical techniques to gain holistic insights into economic dynamics, facilitating informed decision-making and strategic planning for stakeholders in Turkey's economy.

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OPTIMIZATION OF GEOMETRIC PARAMETERS OF HIGHER KINEMATIC PAIRS TO MINIMIZE THEIR WEAR

Banza P.K. (postgraduate student**)**
Sukhoi State Technical University of Gomel, Gomel, Belarus
Scientific Supervisor - **Komrakov V.V.**
(Ph.D., Associate Professor of the Department of " automated and information systems Information technology " Sukhoi State Technical University of Gomel)

Abstract: In the contemporary industry of machine manufacture, the analysis of the interplay between machine elements that are susceptible to friction is of paramount importance. The magnitude and qualities of this friction have a direct impact on the efficiency of mechanisms, their longevity, and their dependability. However, friction is not solely a resistive force to be surmounted, but it also has latent potential to engender heat, oscillation, and attrition. Coulomb's law, which governs the ratio of friction force to normal force, is the central point of investigation for academics. Precise determination of the friction coefficient, as well as comprehension of the dynamics of this phenomenon, can profoundly enhance the performance and longevity of mechanisms. This is especially true in the context of incessant growth and integration of automatic systems, where even a minor shift in frictional characteristics can have momentous implications on the operations of all

machinery.

Keywords: kinematic pairs, geometric parameters, wear, optimization, mathematical model, experimental studies.

Introduction

The aim of this study is to develop a methodology for optimizing the geometric parameters of top kinematic pairs in mechanical systems in order to minimize their wear and extend the life of the equipment. The research will focus on analyzing the influence of the shape, dimensions and mutual arrangement of the coupled elements on the wear rate. The emphasis will be on identifying optimum configurations that minimize contact wear while preserving the functional efficiency and reliability of the mechanisms. The results can be applied to engineering design, increasing the durability and efficiency of machines and mechanisms.

Results and discussion

A thorough review of existing tribological research protocols [2] was carried out to identify elementary kinematics. The principle of modularity in module design allows different components with different functionalities to be combined in numerous module classifications. A subsequent configuration of autonomous units is proposed for the design of a new depletion device.

The rotary motion module is a highly sophisticated and technologically advanced piece of equipment. Its sophisticated design and precise engineering ensure that the mechanisms rotate smoothly and seamlessly, making it an essential component for a wide range of scientific applications. The module is specifically designed to facilitate rotary motion, using advanced technology and the latest materials to ensure the highest level of performance. Its unique capabilities and unrivalled precision make it an indispensable tool for any scientist or engineer looking to achieve optimum results in their research and experiments.

The rotary motion system module uses a number of technological advances to achieve optimum performance. This module uses a variety of high-tech components, including advanced servomotors, precision bearings and sophisticated gearing systems. These components act in a complex choreography to create a smooth and precise rotary motion. The result is an unrivalled level of precision and reliability, making this module the best choice for scientific and industrial applications requiring the highest levels of performance. Additional modules are required to ensure automated operation of the friction pairs. The set of processes used to deploy an assembly designed to counter the effects of friction is commonly referred to as a "friction assembly loading module".

It is suggested that stepper motors and mechanical gears be used to run the modules. However, stepper motors do not allow continuous rotation. They rotate progressively (or "in steps", as the name suggests). Each step corresponds to a complex rotation fragment determined mainly by the mechanical design of the motor and the preferred control method. Therefore, to achieve smooth rotation of a stepper motor, a driver with step division (up to and including 256) must be used.

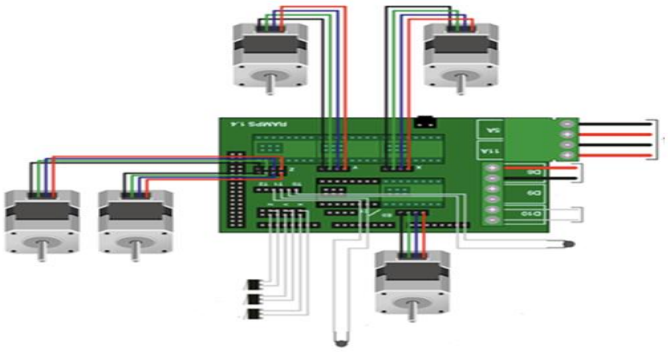

Figure 1- Friction machine module control

The modular construction principle of the friction machine will enable tribological tests to be carried out on different friction patterns, new functions to be added to perform other friction patterns and further work to be carried out on the automation of the friction machine.

The translation module is an indispensable element that plays a key role in the development of scientific advances. Its many facets are at the heart of the complex interaction between the

theoretical and experimental domains, facilitating the translation of scientific knowledge into practical applications. Its sophisticated design is optimized for precision and accuracy, ensuring that experimental data is accurately interpreted and translated into meaningful knowledge. The essential function of the translation module in scientific research is unrivalled and indispensable for pushing back the frontiers of knowledge. The control diagram for the module is shown in Figure 1.

It has been proposed that additional modules responsible for automating auxiliary operations, such as loading the friction component, should be incorporated into the tribometer design. In this manuscript, an elementary design of a torque component for use in a tribological apparatus is investigated in detail. In the most basic scenario, a module of this caliber would take the form of a dynamic mechanism in which a cylindrical sample is placed on the shaft. It is important to note that this specimen is inherently susceptible to erosion during testing.

The modular manufacturing principle of the friction device will allow tribological studies not only based on the above-mentioned friction patterns, but also the integration of new components that facilitate other friction mechanisms. In addition, it will facilitate the automation of the friction device, which will further broaden the scope of experiments.

Conclusion

In conclusion, optimizing the geometric performance of raised kinematic couplings is an important task in the field of mechanical engineering. This task requires an in-depth knowledge of the subject, a diversified methodology and the consideration of many factors. The successful implementation of advanced methodologies and optimization techniques results in state-of-the-art mechanisms that will last for a long time and operate with maximum reliability and efficiency. In-depth studies of the machines and equipment required for tribological experiments are reviewed. The concept of a modular tribological study and the associated algorithms for optimizing its performance are formulated. The modular tribological study is created.

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ASSESSING THE EFFECT OF THE YEMENI CONFLICT ON THE ACCOMPLISHMENT OF THE SUSTAINABLE DEVELOPMENT GOALS (SDGS)

Bassam Abdalwasa Mansour Al-Jabri

Scientific Organization for Research and Innovation, Republic of Yemen

Scientific Supervisor – **Malek Abduljalil Taher Ghaleb**

(Young researcher, Scientific Organization for Research and Innovation, Yemen)

Abstract: The ongoing conflict in Yemen, which began in 2014, has had disastrous consequences on the country's development trajectory and its ability to achieve the Sustainable Development Goals (SDGs). The conflict has caused immense human suffering, widespread destruction of infrastructure, and economic collapse, making it extremely challenging to address the multifaceted goals outlined in the SDGs. This article aims to assess the impact of the Yemeni conflict on the accomplishment of the SDGs and highlight the urgent need for international support to mitigate the effects of the crisis.

Key words: Yemen, SDGs, Sustainable Development.