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Heat transfer on the cross flow of micropolar fluids over a thin needle moving in a parallel stream influenced by binary chemical reaction and Arrhenius activation energy

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Abstract. Emerging engineering and industrial needs made the prime concern of this article to investigate the thermal management on the cross flow of micropolar fluids over a thin needle moving in a parallel stream. The flow is subject to binary chemical reaction and Arrhenius activation energy. The mathematical model of the considered physical problem consists of coupled nonlinear partial differential equations: conservation of mass, momentum, energy, and concentration equation. The dimensionless transformed governing equations subject to the given boundary conditions have been solved directly by the Runge-Kutta Fehlberg fourth- fifth-order method followed by the shooting technique. Graphical results relative to the interaction effects of dynamic thermo-physical dimensionless parameters such as Richardson parameter, Dufour number, Soret number, Prandtl number, temperature ratio parameter, nondimensional activation energy, chemical reaction parameter and velocity ratio parameter controlling the flow, heat and mass transfer features are presented and analyzed. It can be seen, from the study, that the skin friction due to angular velocity reduces with increase in size of the needle and it upsurges due to the increase in material parameter. The obtained numerical results revealed that the augmented Richardson parameter is in favor of a greater heat transfer enhancement. The obtained results show a better agreement of this model with the previously published results.

1 Introduction

In view of the specific features of the final products depending mainly upon the rate of heat transfer, the flow and heat transfer mechanism through stretching surfaces find many peer-to-peer applications such as manufacturing of fiber-glass, enhancement in efficiency of paints and lubrication, plastic-molding, glass blowing, paper production, crystal growing, aerodynamic extrusion of polymer and rubber sheets and many others. Crane [1] was the pioneer who analyzed beautifully the flow over a linear stretching plate and obtained successfully the analytical solution for the Navier-Stokes equations. The work done by Crane [1] was given a new domain by Gupta and Gupta [2] by introducing the mass transfer effects on the stretching sheet. Later, the heat transfer characteristics of second grade fluid flow past a stretched surface were well discussed by Rahman *et al.* [3]. More recently, Manzur *et al.* [4] carried on a study regarding the heat transfer analysis on a mixed convection crossed flow past a stretching sheet.

Several industrial manufacturing processes involve non-Newtonian fluids such as paints, lubricants, polymeric suspensions, biological fluids, animal blood, colloidal solutions, liquid crystals with rigid molecules, which cannot be described by traditional Newtonian fluid behaviors. Therefore, to investigate the behavior of such fluids, researchers

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Job Satisfaction among Library Professionals Working In University Libraries of Odisha: A Case Study

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Abstract

Job satisfaction of employees, in general, is considered to be significant when an organization wants to achieve user's satisfaction. Academic libraries are non-profit oriented service production systems. The digital technology orientation in academic libraries has thrown more challenges to the library professionals rather than to the users who at times outwit the library professionals. The social pressure from the users and online document pressure has put the library professionals in stress. The extent of job satisfaction may differ individually according to age, educational qualification, experience, and marital status. The results revealed by the study that responding to library professionals working in academic institutions in the Madurai district were found to have their job satisfaction at varying degrees.

KeyTerms: Job satisfaction, Library professionals, University librarians salary, Overall job satisfaction, Gender difference and job satisfaction.

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Introduction

Employment is a professional act that is performed by a person in the prize of a reward, salary. Satisfaction refers to the feelings that people feel about the award, human relations, and the level of happiness in a person's work. Job satisfaction, according to Luck, "is a positive emotional feeling as a result of an appraisal of work or employment experience." In general, the emphasis on different definitions, job satisfaction is defined as a degree of consistency between the perceived nature of the work and the perceived advantages of the staff. In the same way it can be described how the work environment fulfills the needs and values of staff and personal reactions to the environment. Among various professions, that of the librarian is a noble profession. In the age of digital transactions, academic libraries are still passing through a hybrid stage retaining the conventional documents while handling online information too. Users are many a time better informed of their sources and can retrieve their information needs bypassing the librarian's assistance. Bringing the library users into the library network and rendering services in the form suitable to their taste and need have become a challenge to the community of library professionals. The conscience of the library professionals can have job satisfaction only when they are able to perform their duties and responsibilities to the satisfaction of the library users as well as the library authorities. How do they cope up with the library working environment, is the question? The study covers the job satisfaction of library professionals working in academic institutions. The study gives a wider coverage to librarians working in all academic libraries located within the geographical limits of the Madurai district of Tamil Nadu, a constituent state of India.

Objective

- To study and understand the state of job satisfaction among university library professionals in their working place.
- To determine the level of satisfaction of the respondents regarding their job.
- To access and evaluate the opportunities available to the university library professionals for their career growth and development.
- To recommend the measures for enhancing job satisfaction among the library professionals working in University libraries of Odisha.

Methodology

The method used for this study is survey method. A structured questionnaire has been designed to collect information. For surveys, a well defined questionnaire distributed to each of the library professionals for their views and to know the status of job satisfaction on library and

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Job Satisfaction of LIS Professionals in University Libraries of Orissa

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Abstract

A man is happy in the working environment if he is happy about his job. Employment is not only an important source of income but also a vital element of life. If satisfied, they will get the best quality in the best time and bring profits. The preferred staff is also more creative and innovative, and creates a breakthrough that allows the organization to grow and change positively over time and to change market conditions. Job satisfaction is the whole matrix of work factors that make a person like the job situation and wants to be his subject without worrying about starting his or her job. There are two terms "work" and "satisfaction". Work is an activity that individuals can use to redeem prizes. Satisfaction refers to the feelings that people feel about events, rewards, relationships, and the amount of work happiness. This Study describes briefly about the job satisfaction of library and information science professionals of university libraries of Odisha.

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Keywords

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