

**BIOCHEMICAL CHARACTERIZATION OF PEROXIDASE FROM THE SEED & PEEL
EXTRACTS OF *PERSEA AMERICANA***

Jyoti Bala Chauhan ¹ & Smitha Grace S.R² ^{1&2}Department of Studies in Biotechnology, Pooja Bhagavat Memorial Mahajana Education centre, Post graduate wing of SBRR Mahajana First Grade College, Metagalli, K.R.S Road, Mysuru 16, Karnataka smithagrace13@gmail.com

Abstract :

Medicinal plants are premier adaptogen helping the body and mind to adopt and cope with a wide range of physical, emotional, and psychological functions to a normal healthy state. The isoenzyme, peroxidase stands responsible for their antioxidant capacity which in turn contributes towards their medicinal properties. Peroxidases represent a group of enzymes widely distributed in the plant kingdom differing in number thermal stability, optimum pH, substrate specificity, amino acid composition and their physiological roles in plant tissues. Peroxidases play a critical role in the physiological function such as, cell metabolism, plant resistance and auxin catabolism. This makes it a better choice for the production of peroxidase for its use as antioxidant. The present study is aimed to extract, partially purify & characterize biochemically Peroxidase from *Persea americana* Peel and Seed extract.

The guaiacol is used as substrate in the detection of enzymatic activity of peroxidase. The optimization of extraction process is done by controlling the type and concentration of buffer, pH of the buffer used, and the ratio of extraction. The Phosphate buffer (pH7) is found to be the best buffer for extraction of peroxidase. By using the extraction ratio for plant tissue of 1:10 (W/V), following three purification steps. These steps include: Ammonium sulfate precipitation with 70% saturation, followed Gel filtration chromatography using Sephadex G-100. Upon these three purification steps the specific activity is found to be 0.456 μ mol for Px-Pap & 0.613 μ mol/ml for Px-Pas with a purification fold of 0.5849 & 0.567 for Px-Pap & Px-Pas respectively. Characterization results demonstrated that, the optimal pH for activity and stability was pH-4 for Px-Pap & pH-6.5 for Px-Pas respectively, the optimal temperature for activity and stability was 50°C & 30 °C for Px-Pap & Px-Pas respectively. The enzyme turnover determined in Px-Pap is 0.00094s⁻¹ & for the Px-Pas is 0.00126s⁻¹. This was studied to understand the variation between single species at protein level. Protein profiling is done in both native PAGE and SDS PAGE and the molecular weight of the extracted & partially purified Px-Pap & Px-Pas is corresponding range of 40kda -60Kda and hence we conclude that Px-Pap & Px-Pas are showing biochemical and kinetic properties & suitability for analytical purposes.

Keywords: Peroxidase, *Persea americana*, Specific activity, enzyme turnover, Antioxidant.

1. Introduction:

Life depends on well-established series of chemical reactions, many of these reactions however proceed to slowly on their own to sustain life. Hence nature has designed catalysts which we now refer to as —ENZYMES!

Peroxidases are widely distributed in nature and are produced by a wide variety of plant species, the commercial source being Horseradish and soya bean. Peroxidases are heme containing enzymes that oxidize a wide variety of organic and inorganic substrates by reducing hydrogen peroxide and peroxides. Peroxidase is a heat stable enzyme, preferring the preparation of enzyme conjugated antibodies and other sensitive analytical techniques. They play critical roles in physiological functions such as cell metabolism, resistance and auxin catabolism. This is also commonly used in pharmaceutical industry especially glucose estimation drugs.

Persea americana is an evergreen tropical or subtropical tree that produces leathery skinned fruit that are generally eaten fresh by itself or used raw in various dishes. This has one of the highest fat percentages of all fruits, though they are healthy fats. It also offers fiber, folate, potassium, vitamin,

LECTINS FROM PEEL AND SEED EXTRACTS OF PERSEA AMERICANA WITH ANTI-NEOPLASTIC ACTIVITY.

Smitha Grace S.R Department of Studies in Biotechnology, Pooja Bhagavat Memorial Mahajana Education centre, Post graduate wing of SBRR Mahajana First Grade College, Metagalli, K.R.S Road, Mysuru 16, Karnataka smithagrancel3@gmail.com

Jyoti Bala Chauhan Department of Studies in Biotechnology, Pooja Bhagavat Memorial Mahajana Education centre, Post graduate wing of SBRR Mahajana First Grade College, Metagalli, K.R.S Road, Mysuru 16, Karnataka

Abstract:

Lectin is isolated, identified, partially purified and characterized from *Persea americana* peel & seed extracts, belonging to the family of Lauraceae & commonly known to the population as Avocado, the pulp of the fruit is edible whereas the peel and seed are not utilized, but are known to have medicinal properties, the crude protein is extracted from both the sources and Hemagglutination activity assay and human erythrocytes on O⁺ve blood group system is assayed to ascertain agglutination. Lectin is precipitated using ammonium sulfate followed by dialysis for purification, confirmed using UV Spectrophotometric method; molecular weight is determined by SDS-PAGE. The Lectins present in the *Persea americana* peel & seed extracts showed 33.4 Kda of their molecular weight. At 500nm concentration the Hemagglutination activity is confirmed. The peel and seed lectins showed LC50 value of 8.8333 & 8.333 respectively. Lectin of peel and seed extracts is sucrose specific and shows varied optimum activity from the pH-3 – pH 10 and optimum temperature between 40–60° C respectively.

Keywords:

Characterizations, Agglutination, Electrophoresis, Hemagglutination, Toxicity

1. Introduction:

The nonimmune origin contains a kind of glycoprotein or protein collectively called as Lectins, they agglutinate erythrocytes and take part in glycoconjugates precipitation, they do so by on the cell wall by means of binding the specific carbohydrates (Caitlin S. Byrt 2012). These classes of glycoproteins can be of plant origin, animals and microorganisms. The global health challenge with high morbidity & mortality is none other than "Cancer", even though there are enormous new generation diagnostic tools and varied kinds of treatment in practice. We tend to depend on conventional treatment using chemotherapeutic agents its being the prime part of cancer therapy suppressing the cancerous cells by modulating the signals on growing malignant cells but the normal healthy cells are at risk as they are also affected by this treatment regimen. The researchers round the world are in search of emerging innovative, target specific agents that will thoroughly differentiate cancerous cell from normal cells and thus improve the patient prognosis.

Plant Lectins are known to exert anticancer properties and thus their attention is diverted for their application as potent antitumor agents, they structurally contain the catalytic domain which basically helps them in recognition (Peumans & Damme 1998), and hence they take part in biological activities. Lectins are ubiquitously present in the plant and accomplish many biological activities to name a few defense mechanisms namely endocytosis, Phagocytosis, glycoprotein translocation, regulation of cellular components such as migration and adhesion, they do so by binding to the microorganisms to target tissues so they hamper metastasis (Sharon & Lis 2004, Abreu & Matthew 2006). This mechanism of action by plant lectins where they bind to the blood cells causes agglutination or in a methodically termed as Hemagglutination inactivating the tumor cells. This property displayed by these plant lectins is presently preferred a valuable tool for cancer diagnosis and anticancer therapeutics.

Botanicheskii Zhurnal, Vol 108, No 2 (2023)

STUDIES ON THE EMBRYOLOGY OF *CALAMUS PRASINUS* (ARECACEAE) – AN ENDEMIC PLANT FROM THE WESTERN GHATS OF KARNATAKA

Krishna-Kumar H.N.

Abstract

The genus *Calamus* in the family Arecaceae is embryologically not well studied. The present work on the embryology of *Calamus prasinus* is the first investigation. A transverse section of young male staminate flower shows 6 tetrasporangiate anthers. The anther wall comprises an epidermis, an endothecium, a middle layer and a tapetum. The tapetum is of secretory type and its cells are 2–3 nucleated. The successive meiotic division in the pollen mother cells resulting in the formation of isobilateral and tetrahedral microspore tetrads. Occasionally, T-shaped and linear tetrads have been observed. The pollen grains are shed at 2-celled condition. The ovary is superior, tricarpeal, syncarpous and contains 3 ovules on an axile placenta. The ovule is anatropous, bitegmic and crassinucellate. The archesporial cell divides periclinally to form a primary parietal cell and a sporogenous cell. The sporogenous cell differentiates transform into megaspore mother cell, which undergoes meiotic division and subsequent cytokinesis forming a linear tetrad. The chalazal functional megaspore undergoes three successive mitotic divisions without cytokinesis that results in the formation of an 8-nucleate embryo sac. The embryo sac contains two synergids, one an egg cell at the micropylar end, three antipodal cells at the chalazal end and a central cell with two polar nuclei. The development of female gametophyte conforms to the *Polygonum* type.

**STUDIES ON THE BIOLOGICAL ACTIVITIES OF QUERCETIN ISOLATED FROM
ETHYL ACETATE STEM EXTRACT OF CISSUS QUADRANGULARIS L.**

Dr. Krishna Kumar H N Department of Studies in Biotechnology Pooja Bhagavat Memorial Mahajana Education Centre, PG wing of SBRR Mahajana First Grade College (Autonomous), Affiliated to University of Mysore, K.R.S. Road, Metagalgi, Mysore-570 016, Karnataka, India

ABSTRACT

The present study deals with the antioxidant, alpha amylase inhibitory, antiarthritic and anti-inflammatory activities of quercetin isolated from ethyl acetate stem extract of *Cissus quadrangularis*. The antioxidant activity was assessed through DPPH assay, reducing power assay, superoxide anion radical scavenging assay and hydroxyl radical scavenging assay. Phytochemical screening studies of the different solvent extract showed the presence of flavonoids, alkaloids, tannins, saponins, steroids and terpenoids. Determination of total phenolic contents revealed that, the ethyl acetate extract contains 148.3 mg/g of phenolic compounds. The quercetin showed the stronger radical scavenging effect in DPPH assay with IC_{50} value of 12.2 μ g/ml. The reducing power of the quercetin increased with increasing concentration. The quercetin isolated from ethyl acetate extract found to possess scavenging effects on superoxide anion radicals in concentration dependent manner. The IC_{50} value was found to be 25 μ g/ml. The hydroxyl radicals in the present study were significantly inhibited by quercetin in a dose dependent manner with an IC_{50} value of 28 μ g/ml. The present study clearly indicated that, the quercetin exhibited good alpha amylase inhibitory activity in a dose dependent manner. The highest inhibitory activity of 91% with an IC_{50} value of 16.1 μ g/ml has been observed in this assay. The results of antiarthritic assay showed concentration dependent inhibition of protein denaturation by the quercetin. The maximum inhibition of protein denaturation observed in the present study was 92% with an IC_{50} value of 17 μ g/ml. The maximum percentage protection observed in the anti-inflammatory study by the quercetin was 94% at 100 μ g/ml concentration with an IC_{50} value of 18.2 μ g/ml. The biological activities of the quercetin in the present investigation are comparable with the standards.

KEYWORDS:

Antioxidant activity, Polyphenols, Free radicals, Phytochemicals, Alpha amylase inhibitory activity, antiarthritic activity, anti-inflammatory activity.

Introduction

The free radicals such as superoxide anion radicals, hydroxyl radicals and non free-radical species such as H_2O_2 and singlet oxygen are various forms of activated oxygen collectively called as reactive oxygen species (ROS) exert oxidative stress in the cells of human body. Oxidative stress is responsible for many human diseases such as cancer, diabetes, Alzheimer's disease, atherosclerosis, rheumatoid arthritis, cardiovascular diseases etc (Hertog et al., 1997). Diabetes mellitus is a chronic metabolic disorder characterized by hyperglycemia. One of the effective methods to control diabetes is to inhibit the activity of alpha amylase enzyme which is responsible for the breakdown of starch to simple sugars. Rheumatoid arthritis is an autoimmune disease which shows, inflammation of joints, destruction of articular synovial proliferation (Singh et al., 2011). Inflammatory diseases are becoming common in aging society throughout the world. Antioxidant based drug formulations are used for the prevention and treatment of complex diseases like atherosclerosis, stroke, diabetes, Alzheimer's disease and cancer. (Devasagayam et al., 2004). The usage of herbal plants as traditional health remedies are the most popular for 80% of the world population in Asia, Latin America and Africa and is reported to have minimal side effect (Doughari, 2006). It has been suggested that fruits, vegetables and natural plant products contains a large variety of substance called phytochemicals. These phytochemicals are the main source of antioxidant in the diet, which could decrease the potential stress caused by reactive



Significance of *Bryophyllum pinnatum* (Lam.) for green synthesis of anti-bacterial copper and selenium nanoparticles and their influence on soil microflora

Boregowda Nandini^{1,2} · Lakshmi Krishna¹ · Sanjay C. Jogigowda³ · Geetha Nagaraja⁴ · Shiva Hadiman⁵ · Dawoud Ali⁶ · Kazunori Sasaki⁷ · Sudisha Jogalah^{5,8}

Received: 17 December 2022 / Accepted: 2 February 2023
© King Abdulaziz City for Science and Technology 2023

Abstract

Green copper nanoparticles (CuNPs) and selenium nanoparticles (SeNPs) are synthesised by combining the leaf extract of *Bryophyllum pinnatum* with 25 mM of copper sulphate (CuSO_4) and sodium selenite (Na_2SeO_3), respectively. At 300 nm, the ultraviolet (UV) spectrum confirms the production of CuNPs and SeNPs. In CuNPs and SeNPs, the Fourier-transform infrared (FTIR) spectrum reveals the presence of functional groups associated with bioactive compounds. X-ray spectroscopy shows that the properties of CuNPs and SeNPs are distinctive. Using energy-dispersive X-ray spectroscopy (EDX), copper and selenium with narrow, intense widths and great purity were identified. Depending on the species level, the minimum inhibitory concentrations (MICs) of CuNPs and SeNPs synthesised in a green approach ranged from 1.2 to 30 ppm. On soil microflora, synthesised NPs showed no detectable effect on microbial growth compared to the control. The present results demonstrate the benefits of a green approach to the generation of NPs with potent anti-bacterial activity and no negative impact on soil microflora. The present findings illustrate the advantages of a green strategy for the development of NPs with potent antibacterial activity and no toxicity to soil microorganisms.

Keywords Phytoconstituents · Nano-particles · Inhibition · Rhizosphere · Microorganisms

Introduction

The perennial herb *Bryophyllum pinnatum* (L. am.) (Clem.) is a member of the family Crassulaceae. *Bryophyllum pinnatum* is used in ethnomedicine in India, China, Australia, tropical Africa, and the US. Locally, *B. pinnatum*, also known as

Fashan Bheda (Potharchor), Life Plant, and Miracle Leaf, is taken with candy sugar to treat colds, asthma, and coughs (Bhuvanprasad Shukla et al. 2014; Fernandez et al. 2019a; Liu et al. 2023). Numerous bioactive substances, including bryotoxins A, B, and C as well as caffeine and protocatechuic acid, have been identified in this plant (Afzal et al.

✉ Sudisha Jogalah
jodishi@cukerala.ac.in

¹ Department of Studies in Molecular Biology, University of Mysore, Manasagangotri, Mysore, Karnataka 570 006, India

² Department of Studies in Biotechnology, Post Graduate Wing of SRRR First Grade College (Autonomous), Affiliated to University of Mysore, Mysore, Karnataka 570016, India

³ JSS Dental College and Hospital, JSS Academy of Higher Education and Research, SS Nagar, Mysore, Karnataka 570015, India

⁴ Nanobiotechnology Laboratory, Department of Studies in Biotechnology, University of Mysore, Manasagangotri, Mysore, Karnataka 570 006, India

⁵ Laboratory of Plant Healthcare and Diagnostics, PG Department of Biotechnology and Microbiology, Karnatak University, Dharwad 580 003, India

⁶ Department of Zoology, College of Science, King Saud University, PO Box 2455, Riyadh 11451, Saudi Arabia

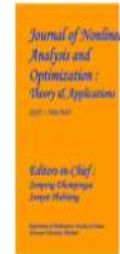
⁷ Research Center for Thermotolerant Microbial Resources (RCTMR), Yamaguchi University, Yamaguchi 753-8515, Japan

⁸ Department of Environmental Science, Central University of Kerala, Tejowini Hills, Peryar, Kasargod (DT), Kerala (PO – 671316, India

Journal of Nonlinear Analysis and Optimization

Vol. 14, Issue. 2, No. 2: 2023

ISSN : **1906-9685**



A COMPREHENSIVE STUDY OF SOFTWARE-DEFINED WIDE AREA NETWORKS (SD-WAN) AND SECURE ACCESS SERVICE EDGE (SASE) IN MODERN NETWORKING ENVIRONMENTS

Mrs. Yashaswini J, Assistant Professor, DoS in Computer Science, SBRR Mahajana First Grade College (Autonomous) PG Wing, Pooja Bhagavat Memorial Mahajana Education Centre, Metagalli, K.R.S Road, Mysuru, Karnataka : yashuj.krn@gmail.com

Abstract:

This paper explores the complex environments of Secure Access Service Edge (SASE) and Software-Defined Wide Area Networks (SD-WAN), describing their deployment scenarios and revolutionary impacts on modern networking models. In addition to analyzing the advantages of each technology individually, the study also looks into the way SD-WAN and SASE function together and the way both of them creates a solid basis for safe, flexible, and adaptable network architectures.

Keywords: *Cloud Access, Network Security, SD-WAN, SASE.*

I. Introduction:


Network complexity has grown due to an increasing number of devices, applications, and data quantities. Traditional techniques can find it hard to effectively handle the complexity. The increasing accessibility of cloud computing has liberated networks of their physical boundaries. A more adaptable and expandable strategy for networking and security is needed in view of this change. Businesses are using IoT, AI, and big data technologies to transform themselves digitally. These technologies bring with them new networking and security requirements as well as challenges. There is a rising complexity and variety of cyber security threats. The dynamic nature of threats may be too much for conventional security solutions to keep up with. Data-driven applications and multimedia content have created an increased demand for dependable, high-speed connectivity, requiring a strong network performance strategy. Additionally end users expect a secure and easy digital experience, regardless of whether they are clients or staff. It is no longer acceptable to use outdated methods that results in delays or security bottlenecks. Emerging technologies like as Secure Access Service Edge (SASE), Software-Defined Wide Area Networking (SD-WAN), and Software-Defined Networking (SDN) are becoming more and more prominent as a means of addressing these issues.

A Novel Approach for Flexible Nurse Rostering Allotment Using the Nature Inspiration Bee Colony Optimization (BCO) Algorithm

Original Research | Published: 11 August 2023

Volume 4, article number 612, (2023) [Cite this article](#)

[R. C. Evangeline](#)  & [R. Eswin Pria Angel](#)

 79 Accesses [Explore all metrics](#) →

Abstract

To solve the nurse rostering problem, a problem that arises in every hospital on a daily basis, this study proposes a new method inspired by nature, similar to bee colony optimization. The difficulty of nurse rostering comes from the need to predetermine which workers will cover certain shifts. The scenario is complicated by the hospital's possible need for legal, work, management, and personnel requirements. In most cases, you will need to compromise in order to meet some of the constraints. The scheduler is often the head nurse, who also has the most responsibilities. Planning for larger wards takes longer since more people need to be involved. Passes in the forward direction that use a

**Evaluation of antibacterial activity of bioactive compound
isolated from the roots of *Corchorus capsularis* L.**

Kiran.B^{1*}, *Lalitha.V*², *Suresha.N.S*²

1. DR.KIRAN.B. BE.d.,M.Sc., M.Phil., Ph.D
Assistant Professor
PG Department of Microbiology, School of Life Sciences
Pooja Bhagavat Memorial Mahajana P.G. Centre, K.R.S. Road, Metagalli
Mysore – 570016

2. DR.LALITHA.V. M.Sc., Ph.D
Associate Professor
Department of Studies in Botany
Maharanis Science College for Women, JLB Road, Mysore-570005
Karnataka State, India

3. DR. SURESHA. N.S. M.Sc., Ph.D
Associate Professor
Department of Studies in Botany
Maharanis Science College for Women, JLB Road, Mysore-570005
Karnataka State, India

*: Corresponding author: DR.KIRAN.B

Thiram-mediated Endosulfan potentiates cytotoxicity in *Saccharomyces cerevisiae* by oxidative stress and necrotic cell death

***R. Harish and **T. Shivanandappa**

*Department of Studies in Microbiology, Pooja Bhagavat Memorial Mahajana Post Graduate Centre, wing of SBRR Mahajana first grade college, Mysuru, Karnataka - 570016 (India)

**Visiting Professor, Department of Life Science Pooja Bhagavat Memorial Mahajana P.G. Wing Mysuru-570016 (India)

*Corresponding author: harishrh@yahoo.com

Abstract

In *Saccharomyces cerevisiae* (yeast cells), the cytotoxicity of two pesticides, thiram and endosulfan, was investigated. Thiram cytotoxicity was substantially lower than endosulfan cytotoxicity, with LC₅₀ concentration (1 h exposure) values of 0.6 and 1.0 mM, respectively. The insecticides' lethal activity on cells was characterized by cell death, lactate dehydrogenase (LDH) leakage, glutathione depletion and the production of reactive oxygen species (ROS). The pesticide-induced cell death, LDH leakage confirmed that it was necrotic. When cells were exposed to a mixture of both compounds, thiram potentiated the cytotoxicity of endosulfan at lower concentration. Excessive glutathione depletion and induction ROS were found to be more potentiating of cytotoxicity than the cumulative effects of individual substances.

Key words : Thiram, Endosulfan, oxidative stress, cell death.

The widespread usage of pesticides has raised severe environmental concerns. Pesticides are predicted to be utilized in excess of two billion tons worldwide¹⁸. The majority of pesticides used end up poisoning the environment, creating a substantial health danger to humans, domestic animals, and wildlife. Although the toxicity of individual pesticides has been extensively researched⁷, the toxicological impact of a mixture is comparatively unknown. As a result, investigations on a mixture of

chemicals or pesticides are required in order to understand their interactions with biological systems and estimate their risk.

Thiram, a carbamate chemical, is widely used as a fungicide and for seed treatment. Thiram is also a byproduct of the fungicides ziram and ferbam's oxidation³. Thiram has modest acute toxicity and has been linked to chronic effects on the neurological system, reproduction, and development.



Inhibition of production of aflatoxin by bioactive compound
2H-furo[2,3-H]-1-benzopyran-2-one isolated from the seeds of
Psoralea corylifolia L.

V. Lalitha¹, B. Kiran^{2*}, Manjula Sheshagiri³

¹Department of Studies in Botany, Maharani Science College for Women (Autonomous),
JLB Road, Mysore-570005, Karnataka State, India

²Department of Microbiology, School of Life Sciences, Pooja Bhagavat Memorial Mahajana P.G.
Centre (Autonomous), K.R.S. Road, Metagalli, Mysore-570016, Karnataka State, India

³Department of Home Science, Maharani Science College for Women (Autonomous), JLB Road,
Mysore-570005, Karnataka State, India

Key words: Maize, *P. corylifolia*, Bioactive compound, *A. flavus*, Aflatoxin

<http://dx.doi.org/10.12692/ijb/24.6.18-30>

Article published on June 03, 2024

Abstract

Forty maize seeds samples collected from different places of Karnataka were subjected for Standard Blotter Method and the seeds borne pathogens were isolated. Among different pathogens isolated, Aflatoxin producing fungi *Aspergillus flavus* were identified. Aqueous extract of *Psoralea corylifolia* were prepared at different concentrations and subjected for antifungal activity by poisoned food technique for eight *Aspergillus* species selected. Among eight *Aspergillus* species tested, *Aspergillus* species No. 6 recorded 93.4% inhibition at 50% concentration. Bioactive compound 2H-Furo[2,3-H]-1-benzopyran-2-one, isolated from the seeds of *P. corylifolia* were tested for antifungal activity against different strains of *A. flavus* at 250, 500, 750 and 1000ppm concentration respectively and the maximum inhibition was observed in 1000ppm concentration and subjected for the isolation of aflatoxin compared with standard aflatoxin. It was observed that, Aflatoxin B₁(R₁ 0.56) isolated from *A. flavus* strain no.6 was completely inhibited by bioactive compound 2H-Furo[2,3-H]-1-benzopyran-2-one, confirming the inhibition of Aflatoxin from *P. corylifolia* seeds.

*Corresponding Author: B.Kiran ✉ bkiran2702@gmail.com

DIGITAL TRANSFORMATION IN HIGHER EDUCATION

Dr. M. PREETHI, Associate Professor, Pooja Bhagavat Memorial Mahajana Education Centre,
Mysuru.

Dr. P. CHANDRASHEKAR, Assistant Professor, Pooja Bhagavat Memorial Mahajana Education
Centre, Mysuru.

Abstract:

Higher education has undergone a major digital transformation in recent years and due to the current pandemic, we have seen an increase in Internationalization and student mobility; supply of online and blended learning; and an increase in internet services in all countries. Due to all of these the need for improvement and guaranteed quality and recognition, call for innovative measures by Governments and institutions has to be addressed. Higher education allows students to pursue career that inspires and benefits them. Students seek higher education to have the freedom to choose their career instead of just clocking in everyday so they can pay the bills. Due to a rewarding career, they're more apt in performing job well, get job satisfaction, higher income, better employment benefits, and more advancement opportunities, work productively and turn out to be an asset to the company. A student with higher education, tend to have more confidence and self-esteem; also more inclined towards participating actively in societal activities like political interest, voting, interpersonal trust, and volunteering. In today's society, E-learning courses are extensively used in colleges and educational institutions providing easy access to course materials, classroom discussions, online tests, assignments and feedback to instructors. The course materials are made accessible from any computer, whether from University or comfort of your own home. Student-centric learning is all about how students need to be active, be responsible participants in their own learning and with their own pace of learning. The present study is based on secondary data analyses of how by creating a student-centric services ecosystem thus can support the entire student life cycle, that is, from prospecting, enrollment, learning, placement of job, alumni commitment and continuing education. This study helps in understanding that digital transformation using digital initiatives taken up by Government of India can be student-centric higher education thus providing a right path towards their future goal career-wise or life happiness.

Key words: Digital transformation, Online, Higher education, Student-centric

INTRODUCTION

The winds of change are driving toward a more student-centric future globally regarding higher education. Due to the pandemic situation, it's clear that COVID-19 has effectually come to be the "tech tipping point" for higher education. Although the present educational system poses significant challenges, it is offering beyond comparable opportunities also, so as to develop long-term digital transformation and new strategies in academic world. Globally almost all the universities have traditionally based their delivery of teaching and learning undertaking on a teacher-centric and curriculum based ideal. Presently some progressive and forward-looking universities are trying to pivot towards student-centric approach thus by encompassing both about enriching student choices and transforming student experiences. The most persistent barrier to student-centric approach is the prevailing culture at most institutions or universities globally of higher learning, that is, faculties are more focused on what student need to know and not on how the students wants to learn that information

AN ANALYTICAL STUDY OF AWARENESS ABOUT E-PAYMENT AMONG RURAL AND URBAN CUSTOMERS IN MYSURU DISTRICT

Sushma Prasad R. Research Scholar, VVRF, University of Mysore, Mysuru.
Dr. Rajeshwari G M Associate Professor PBMMEC, Department of Studies in Business Administration, Mysuru.

ABSTRACT

As electronic payment (e-payment) systems revolutionize the financial landscape, understanding the awareness levels among diverse populations becomes imperative. This analytical study investigates the awareness of e-payment mechanisms among both rural and urban customers in Mysuru District, shedding light on the digital divide that may exist in the adoption of modern financial technologies. The research employs a mixed-methods approach, combining surveys and interviews, to gather data from a representative sample of both rural and urban residents. The study explores key factors influencing awareness, including education, access to technology, and socioeconomic status. It also examines the role of local infrastructure and government initiatives in shaping awareness levels. Today Electronic Payment System is rapidly introduced in our country. It is to make India Digital. In this study we attempt to analyze awareness of E-payment among the people of rural and urban population in Mysuru district. We are targeting customers, employees, professionals and the social class. E-payment helps in economical growth as well as making India digitally empowered. The strategies are directed towards identifying and analyzing how many people are aware of E-payment and are using the modes of E-payment using cards, using online payment apps, net banking, mobile banking, electronic wallets etc. In this study we will also identify the factors affecting the e-payment modes – like convenience, cost, demography, processing charges, security, risks etc. All these data are collected through a questionnaire. We will show the research result analyzing the responses according to residence, age, income, gender, occupation, and so on. This data helps in analyzing the appropriate result for our research work and also help in providing the result for discussion on research area. Demonetization has also influenced the human mind in usage of Digital Payment System rapidly and it facilitates the usage of different modes of E-payment.

KEY WORDS:

Awareness, E-Payment, E-Banking, Online payment, E-Commerce.

INTRODUCTION

In the contemporary landscape of financial transactions, the paradigm shift towards digitalization has been prominently marked by the rise of Electronic Payment (E-payment) systems. These systems, encompassing various modes such as online transfers, mobile wallets, and contactless payments, have become integral to the fabric of economic activities. However, the success and widespread adoption of E-payment systems are intricately tied to the awareness levels among diverse populations. The notion of awareness extends beyond the mere recognition of electronic payment methods; it encompasses a deeper understanding of their functionalities, benefits, and associated risks. As society's transition from traditional cash-based transactions to the digital realm, it becomes imperative to gauge the extent to which individuals are cognizant of the evolving financial landscape. This study embarks on an exploration of the awareness of electronic payment, aiming to unravel the complexities surrounding its penetration into various demographic segments. From urban centers with robust digital infrastructures to rural areas where access to technology might be constrained, understanding the awareness dynamics is pivotal for creating inclusive and effective strategies.

E-Payment (Electronic Payment):

Electronic Payment, commonly known as E-Payment, refers to the process of making financial

RISK RETURN ANALYSIS OF EQUITY FUNDS - A STUDY OF SELECTED EQUITY FUNDS OF HDFC MUTUAL FUNDS

Dr. MANOJKUMAR.J

Assistant Professor, REVA Business School, REVA University Bangalore.

Dr. RAJESHWARI.GM

Associate Professor, PBMMEC, Department of Studies in Business Administration, Mysuru.

Dr. R. GOKILAVANI

Associate Professor, REVA Business School, REVA University Bangalore.

Abstract

The examination of the risk, return, and volatility of the HDFC equities mutual funds assists investors who are looking to invest specifically in the schemes of HDFC equity funds to choose the proper schemes that meet their risk appetite. Mutual funds are one of the greatest investment vehicles for investors. In order to evaluate if HDFC equities mutual funds outperform the market in the short, medium, and long terms, as well as to provide investors and the company with pertinent advice, the study compared the risk and return of several HDFC equity funds available in the market. The study aimed to determine significant difference of annual returns of growth and dividend of HDFC equity funds. The study was carried out with the sample of ten equity mutual funds schemes of HDFC for the period of ten years that is from 2012 to 2021 and focused on net asset value and share prices. The outcome of the study revealed that there is a significant difference in the annual returns of the HDFC growth and dividend equity funds.

Keywords: Risk, Return, Standard deviation, HDFC equity funds, Time tenures.

INTRODUCTION

The investors must first decide the level of expected risk and return, which determines the number of investments in various potential marketable securities. Mutual funds are the purest form of financial intermediaries because they directly assist the investors in the process of asset allocation. In the current market, mutual funds are a better investment option than any other because they offer a higher return with a professionally managed portfolio by a research team that continuously monitors performance on the Indian stock exchange as well as the international capital market, as well as to understand the growth and the life cycle of an industry as well as the fundamental analysis of a specific company. Investments in mutual funds are therefore preferred by investors because they offer greater returns than direct stock investments.

The Securities Exchange Board of India (SEBI) Regulations 1993 termed mutual funds as "A fund that is established by the sponsor in the form of a trust with the intention of generating revenue for the trustee through the sale of units to the general public under one or more regulated investment schemes. Consequently, mutual funds are among the effective investment vehicles that pool investor capital and invest it in assets such as stocks, bonds, debentures, and other types of securities. The act of investing money in a portfolio, which may contain hundreds of different securities types and seeks to generate

EFFECTIVE GOVERNANCE IN MANAGEMENT EDUCATION IN INDIA

Dr. Preethi.M,

Shilpa.K,

Associate Professor, PBMMEC, Mysuru, Karnataka

Researcher, Bengaluru, Karnataka

Abstract:

In today's globalized world considering advancements in technology, Management Education Institutions have significant role to play in providing quality and relevant education. The provision of quality education will rely on the governance of these institutions as the effective governance will help in ensuring processes, practices and roles in alignment thus helping to achieve the intended objectives. Effective values and participative decision-making process can be key notes in not only achieving the vision, mission and goals of the management institution but also in building institutional culture. The formal and informal arrangements to co-ordinate academic and administrative planning and in implementation thereof will reflect institution's efforts in achieving its vision. The findings reveal that effective governance affects the performance of management education positively by leading to better accountability, transparency and ultimately support in achieving vision, mission and objectives identified for a management institution.

Keywords: Governance, Performance, Accountability, Transparency, Management Education Institutions.

1. Introduction

With the change in business environment management education in India is revolutionizing. There are incumbent Foreign Universities which will be establishing their satellite offices as well as more collaborations will be happening which will encourage existing institutions to improve and gear up their programme.

Governance forms the foundation of management education's credibility and integrity as it ensures adherence to responsible practices and ethical standards. Effective governance promotes transparency in administrative and academic decisions, enhancing trust among stakeholders. The term 'governance' has been derived from the word 'gubernare', which means "to rule or steer". Originally the term meant to be a normative framework for exercise of power and acceptance of accountability used in the running of kingdoms, regions and towns. However, over the years it has found significant relevance in the corporate and academic world. Governance plays a crucial role in bringing the management education into forefront.

Importance of Governance in Management education

Good governance is essential for quality education in terms of content, level and value. Universities function properly by transforming their governance in a way that promotes accountability by clearly defining the roles and responsibilities and processes, transparency in decision making which builds trust among various stakeholders and prevents conflict of interest. The study uses the indicators of effective governance as its analytical framework. In particular, management education institutions develop effectively through using integrated governance systems involving all stakeholders.

Effective governance framework in management education enables quicker responses to challenges, fostering agility and adaptability which foster credibility among various stakeholders such as faculty, alumni, students, industry and regulatory bodies thus enhances the image of the institution. The important pillars of effective governance are:

- **Transparency in Decision-making:** Effective governance promotes transparency in administrative and academic decisions, enhancing trust among stakeholders.
- **Fostering Accountability:** A robust governance framework establishes clear responsibilities and expectations, holding stakeholders accountable for their roles and decisions.
- **Compliance and Regulatory Standards:** Governance mechanisms ensure compliance with regulatory standards, accreditation criteria, and legal requirements, safeguarding the institution's reputation.

INVESTIGATING THE ROLE OF QUALITY OF WORK LIFE IN ORGANIZATIONAL COMMITMENT OF BANK EMPLOYEES

Dr. SANGAMITRA GOWTHAM M J Assistant Professor, PBMMEC, Mysore
PARTHASARATHY N Research scholar, VTU – RRC, Mysore.

Abstract

Keyword: Quality of work life, Organizational commitment Banks are the backbone not only for the development of industries but also for the development of national economy. In this context, the services offered by the banks through their employees are invaluable and incalculable. Hence in this research an attempt is made to study the quality of work life of these bank employees. The aim of this study was to examine the association between quality of work life and organizational commitment and also to identify the true predictors of commitment through quality of work life. The study was carried out by employing field survey method, where the bank employees were administered with a structured questionnaire. A total of 133 respondents were the sample for this study. The data thus collected were tabulated and subjected to statistical analysis. Pearson's correlation test was used to examine the relationship between quality of work life and organizational commitment and stepwise multiple regression was used to identify the predictors of organizational commitment. Analysis of the data revealed that there exist a significant and positive relationship between quality of work life and organizational commitment. The analysis also evidenced that occupied space by work, fair compensation, social relevance and importance of work and Constitutionalizing at work were the true predictors of organizational commitment.

Introduction

The contribution of banking sector to the national economy is towering high. Banks play a decisive role in the economic development of any country. The services banks offer are multi dimensional. Banks offer financial assistance to business organizations and individuals in the form of credits and loans. Banks operate in a highly volatile environment.

Quality of work life

Quality of work life represents an individual's emotions, experience and feelings towards every aspect of the job they do. Various aspects of the job include economic factors, social factors and political factors. Economic factor comprise of all monetary and non monetary benefits like salary, compensation, bonus, incentives, rewards and job security. Social factors include interpersonal relationship, communication channels, mutual trust and respect, working environment and social integration. Holistically quality of work life represents the degree to which an individual is psychologically satisfied with the work. According to the American Society of Training and Development "Quality of Work Life is a process of work organization which enables its members at all levels to participate actively and effectively in shaping the organizations' environment, methods and outcomes. It is a value based process which is aimed towards meeting the twin goals of enhanced effectiveness of the organization and improved quality of life at work for the employees".

Organizational Commitment

Organizational commitment represents the psychological state of an employee towards the organization and job. It is the degree to which an individual is dedicated and engaged towards his job and organization. Commitment of employees towards their organization may be because of various reasons. Some of the major reasons include their emotional affinity and bonding towards organization, their loyalty, compulsive reasons and imagined consequences. Irrespective of the above said reasons, commitment of employees towards organization will yield positive outcome as it will have its impact on the growth, profits and the very survival of the firm.

Comparative Analysis of QWL and Organizational Commitment among selected Public and Private Sector Banks in Karnataka, India

PDF

DOI: <https://doi.org/10.52783/tjjpt.v44.i4.2829>

**Parthasarathy N, T P Renuka Murthy, Sangamitra
Gowtham M J**

Abstract

Two of the most important psychological phenomenon that affects an organization's survival and growth are quality of work life and organizational commitment. The primary objective of this research study is to examine the association between quality

DIGITAL TRANSFORMATION IN HIGHER EDUCATION

Dr. M. PREETHI, Associate Professor, Pooja Bhagavat Memorial Mahajana Education Centre,
Mysuru.

Dr. P. CHANDRASHEKAR, Assistant Professor, Pooja Bhagavat Memorial Mahajana Education
Centre, Mysuru.

Abstract:

Higher education has undergone a major digital transformation in recent years and due to the current pandemic, we have seen an increase in Internationalization and student mobility; supply of online and blended learning; and an increase in internet services in all countries. Due to all of these the need for improvement and guaranteed quality and recognition, call for innovative measures by Governments and institutions has to be addressed. Higher education allows students to pursue career that inspires and benefits them. Students seek higher education to have the freedom to choose their career instead of just clocking in everyday so they can pay the bills. Due to a rewarding career, they're more apt in performing job well, get job satisfaction, higher income, better employment benefits, and more advancement opportunities, work productively and turn out to be an asset to the company. A student with higher education, tend to have more confidence and self-esteem: also more inclined towards participating actively in societal activities like political interest, voting, interpersonal trust, and volunteering. In today's society, E-learning courses are extensively used in colleges and educational institutions providing easy access to course materials, classroom discussions, online tests, assignments and feedback to instructors. The course materials are made accessible from any computer, whether from University or comfort of your own home. Student-centric learning is all about how students need to be active, be responsible participants in their own learning and with their own pace of learning. The present study is based on secondary data analyses of how by creating a student-centric services ecosystem thus can support the entire student life cycle, that is, from prospecting, enrollment, learning, placement of job, alumni commitment and continuing education. This study helps in understanding that digital transformation *using digital initiatives taken up by Government of India can be student-centric higher education thus providing a right path towards their future goal career-wise or life happiness.*

Key words: Digital transformation, Online, Higher education, Student-centric

INTRODUCTION

The winds of change are driving toward a more student-centric future globally regarding higher education. Due to the pandemic situation, it's clear that COVID-19 has effectually come to be the "tech tipping point" for higher education. Although the present educational system poses significant challenges, it is offering beyond comparable opportunities also, so as to develop long-term digital transformation and new strategies in academic world. Globally almost all the universities have traditionally based their delivery of teaching and learning undertaking on a teacher-centric and curriculum based ideal. Presently some progressive and forward-looking universities are trying to pivot towards student-centric approach thus by encompassing both about enriching student choices and transforming student experiences. The most persistent barrier to student-centric approach is the prevailing culture at most institutions or universities globally of higher learning, that is, faculties are more focused on what student need to know and not on how the students wants to learn that information

A STUDY ON WOMEN INVESTORS PREFERENCE TOWARDS VARIOUS FINANCIAL INVESTMENTS Dr. Uma K, Assistant Professor, Dept. of Commerce, SBRR Mahajana PG Centre, Mysuru. <https://orcid.org/0000-0002-3652-2025>, <https://www.scribd.com/user/332940367/Dr-UMA-K>, +91 9916262474. chanduma25@gmail.com Dr. Gunarekha B.S Assistant Professor, Dept. of Tourism Management, SBRR Mahajana PG Centre, Mysuru. +91 9480438394. gunarekha75@gmail.com, Mr. Nikil Chandrashekara Student of Master in Professional engineering

Original Title: Article 12 ISSN Publication 1 July -Dec2024

Copyright: © All Rights Reserved

Download as PDF, TXT or read online from Scribd

A STUDY ON WOMEN INVESTORS PREFERENCE TOWARDS VARIOUS FINANCIAL INVESTMENTS

Dr. Uma K, Assistant Professor, Dept. of Commerce, SBRR Mahajana PG Centre, Mysuru. <https://orcid.org/0000-0002-3652-2025>, <https://www.scribd.com/user/332940367/Dr-UMA-K>, +91 9916262474. chanduma25@gmail.com

Dr. Gunarekha B.S Assistant Professor, Dept. of Tourism Management, SBRR Mahajana PG Centre, Mysuru. +91 9480438394. gunarekha75@gmail.com,

Mr. Nikil Chandrashekara Student of Master in Professional engineering in Electrical, Monash University, Melbourne, Australia. +91 8296874007. nikchand1253@gmail.com

Abstract:

In this contemporary world, women investors are indeed cautious but have emerged as interested, committed, and knowledgeable investors. The personal finance management of women investors in various sectors can be measured based on their day-to-day revenues and expenses and how they manage their income and invest for their benefit. The study includes primary and secondary data. To collect primary data, 100 respondents' responses are collected by issuing a self-structured questionnaire. The objective of the article is to analyze the socio-economic background, factors influencing various alternatives to financial investment, issues and challenges, and satisfaction of women investors' preferences towards financial investments. To determine the reliability of the data, a reliability test was conducted. To explore the results, mean, standard deviation, chi-square test, and multiple regression analysis are used. The study finds that various alternatives of finance and Issues and challenges are having a significant impact on women investors' preferences towards financial investments; there is no linear relationship between satisfaction towards financial investments and ultimately, the right investment choice depends on an individual's unique financial situation, goals, and risk tolerance. It's often advisable to diversify across different asset classes to spread risk and align with specific financial objectives. Hence, the study results show that investor preferences towards various financial investments are shaped by a complex interplay of factors, reflecting the diverse goals, risk tolerances, and time horizons of individuals.

Keywords: Women Investors Preferences, Various Financial Investments, Issues and Challenges, Satisfaction.

A STUDY ON DIGITAL TRANSFORMATION OF E-CRM IN SERVICE MARKETING

Dr. Uma K, Assistant Professor, Dept. of Commerce, SBRR Mahajana PG Centre, Mysuru.
Mr. Nikil Chandrashekara, Student of Master in Professional engineering in Electrical, Monash University, Melbourne, Australia.

Abstract:

This study delves into the dynamic landscape of digital transformation within Customer Relationship Management (CRM) systems, specifically focusing on its implications for service marketing. The research aims to comprehensively assess the multifaceted impact of E-CRM adoption and its transformative effects on customer-centric strategies within the service sector.

This paper aims to examine the impact of the digital evolution on Customer Relationship Management (CRM) in Business-to-Business service marketing. It delves into the changing landscape of customer relations, emphasizing the shift from conventional CRM to Electronic Customer Relationship Management (E-CRM). E-CRM amalgamates business strategies, marketing tactics, and technology to better cater to customer needs in an era of evolving technologies and shifting customer preferences.

The study explores how E-CRM enables companies to enhance customer care and value, leveraging digital channels to target specific demographics and gauge campaign effectiveness more precisely. It emphasizes maximizing sales within the existing customer base while fostering enduring relationships through digital communication tools.

Furthermore, this research endeavors to bridge the gap between technological innovation and customer-oriented practices, highlighting the strategic alignment of E-CRM with service marketing goals. It explores the qualitative shifts in customer engagement, personalization strategies, and the



**Humanities and
Social Science Studies**



**UGC Approved (CARE List) Journal -
No Publication/Processing Fee**

ISSN: 2319-829X



**Aspire.
Achieve.
Flourish.**

Rabindra Bharati University
Journal of Economics

(A UGC CARE Peer-Reviewed Journal)

Special Issue :
Golden Jubilee Year of the Department of Economics

VOLUME – XVII
December, 2023
ISSN 0975-802X



DEPARTMENT OF ECONOMICS
RABINDRA BHARATI UNIVERSITY
56A, B.T. Road, Kolkata - 700 050

RABINDRA BHARATI JOURNAL
OF
PHILOSOPHY

Vol-XVII 2016

ISSN No. 09730087



Department of Philosophy
Rabindra Bharati University
56 A, Berozopur Trunk Road, Kolkata - 700 050

Rabindra Bharati University
Journal of Economics

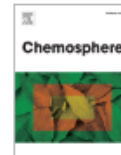
(A UGC CARE Peer-Reviewed Journal)

Special Issue :
Golden Jubilee Year of the Department of Economics





VOLUME – XVII
December, 2023
ISSN 0975-802X






DEPARTMENT OF ECONOMICS
RABINDRA BHARATI UNIVERSITY
56A, B.T. Road, Kolkata - 700 050




The association of cysteine to thiomersal attenuates its apoptosis-mediated cytotoxicity in zebrafish

Debanjan Dutta ^a  , Sautan Show ^{a,b}, Anabadya Pal ^c, Abass Toba Anifowoshe ^a, Mahadesh Prasad Aj ^b, Upendra Nongthomba ^a  

Show more 

 Add to Mendeley  Share  Cite

<https://doi.org/10.1016/j.chemosphere.2023.141070> 

[Get rights and content](#) 

Highlights

- TM causes apoptosis by interacting with intracellular proteins and mitochondria.