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Our Activities

- An Association with over 600 members from India and abroad working since last 68 years for the growth and development of Leather and its allied industries.
- Organize seminars, symposiums, workshops in order to share information, knowledge & latest development and interactions for the benefit of all concerned.
- Organize Human Resource Development programmes on regular basis.
- Publish for over 60 years, a technical monthly journal namely “Journal of Indian Leather Technologists' Association” (JILTA), widely circulated through out the World.
- Publish books for the benefit of the students at various levels of study, for the Research Scholar and the Industry.
- Work as interface between Industry and the Government.
- Assist Planning Commission, various Government Institutions, Ministry and autonomous bodies to formulate appropriate policies for the growth of the Industry.

Indian Leather Technologists' Association

[A Member Society of International Union of Leather Technologists' and Chemists Societies (IULTCS)]

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JOURNAL OF INDIAN LEATHER TECHNOLOGISTS' ASSOCIATION (JILTA)

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JOURNAL OF INDIAN LEATHER TECHNOLOGISTS' ASSOCIATION (JILTA)

Indian Leather Technologists' Association is a premier organisation of its kind in India was established in 1950 by Late Prof. B.M.Das. It is a Member Society of International Union of Leather Technologists & Chemists Societies (IULTCS).

The Journal of Indian Leather Technologists' Association (JILTA) is a monthly publication which encapsulates latest state of the art in processing technology of leather and its products, commerce and economics, research & development, news & views of the industry etc. It reaches to the Leather / Footwear Technologists and the decision makers all over the country and overseas.

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How can we handle the Pandemic



The word “coronavirus” was not even in our national lexicon till January 2020. Most of us have become self-professed experts on pandemics, the spiky virus and the escalating toll that it’s taking on the world through non-stop media coverage,. We have also added a new term to our vocabulary that is currently defining everyday life i.e.”social distancing.”

The world is shifting in an unprecedented way, but we are shifting together. The global keyword is “unified,” with respect to the effort underway to contain this pandemic. Governments, scientists and health organizations are collaborating like never before, coordinating efforts to bring some stability back to the world. Coronavirus is the pathogen of an equal opportunity. It does not discriminate when it comes to race or socioeconomic status. Each of us is vulnerable to the potential risk for transmission and each of us has to manage our fear and anxiety through this challenging time.

Most of us fear the unknown source of infection because we do not know what we do know at actual. And that is scary for a lot of us. Fearfulness heightens our anxiety and confusion compounds it. So how can we manage our fear and anxiety during troubled times? First, we have to take to heart that we are all in this together. Being kind to ourselves and one another is essential to our well being and we will find peace. But, still we do find that societal stigma is preventing people to get diagnosed properly. Even asymptomatic people are afraid of getting tested because of getting labelled as COVID AFFECTED. Frontline covid warriors are not exceptions too. Such ignorance and indulgence to societal hooliganism are paying dividends in terms of increase of numbers of affected people among the tested faculties only. Leave the rest apart.

Still, we have to sustain and defeat the demon. Our first option would be to make our physique movable at best. Options for

walking may be limited in our environment and it is essential that we abide by the regulations governing our neighbourhood. So, let us open our window, step onto our balcony or go outside if we can. Allow the sunshine to warm our face and put a spring in our step. It doesn’t have to be an extraordinary gesture; something simple will give us the same “lightness of being” feeling that this year represents globalisation in terms of everything. Spring offers us all an opportunity to be reborn, to shed our cloaks and to embrace the sun and warmth that is pending. We can feel lighter and be ready to be more, do more and share more. Buy a tea for a homeless person on a corner or the person behind you in line, give an extra tip plus a sincere smile to our e commerce service personnel, or sing a song from core of heart for no reason or call a friend we have not spoken to in a while. But, whatever we do, do it from the heart. It is that “lightness” and feeling of joy that put a spring in our step of life.

It is not advisable to cut our self off from the world. Au contraire! In times like these, we need to lean on friends and family. In this era of social distancing, we just have to do it in a virtual way. Today’s video conferencing options bring your loved ones and connections into your environment. However, the incessant news coverage and commentary on social media regarding this pandemic need to be consumed in highly limited doses. Although it will send tempers into high-gear, we have to manage the screen time of our children so that their virtual exposure to the blend of actual facts, articulated fears and concerns that others are vocalizing now is limited.

We all have to understand that tensions are going to escalate with people confined to a limited space day after day and it is obvious. Financial pressures related to loss of income are going to be challenging to work through despite the increasing number of contingency plans that employers and governments are initiating throughout. There are going to be numerous



JILTA
Since 1950

psychological issues during / post covid era and it will prevail the world rather than post effects of actual disease. The stock markets are volatile. Healthcare workers are going to feel overwhelmed and exhausted by the unexpected burdens that have been placed upon them. We are all in this together and it is going to be bumpy, but, if we are kind to each other, we will see that the world is more united than we thought.

Individually, we each need to work towards finding peace in our hearts and minds. We must find a way to come to terms with our situation and find peace with it. It is also essential that we find peace with each other; we are united by the challenges

imposed by this global pandemic and together, we will get through it. Diagnosis, treatment of disease is needed, income level need to be stable for sustenance. But all these have got their rudimentary base based on mental peace. This x factor has got the maximum healing potential. Peace can not be earned, but we can attain it when we are all together and for together.

Goutam Mukherjee

Dr. Goutam Mukherjee
Hony. Editor, JILTA

Read and Let Read :-

JILTA

Solidaridad ASIA

Solidaridad Network is a global civil society organization providing efficient, scalable and economically effective and innovative sustainability solutions in various agricultural and industrial commodities such as:



Solidaridad Asia has more than 320 sustainability experts operating from 26 offices in 9 countries and has also pioneered development and implementation of national sustainability standards in the region.

Solidaridad initiated its efforts in the leather cluster in late 2017 with the Kanpur-Unnao leather cluster. Within 2 years of inception, we have started our efforts in Kolkata and Bangladesh Leather clusters. Through tailor-made programs, Solidaridad has tried to address the following components:

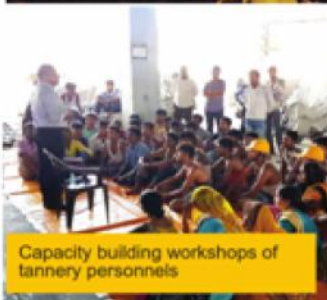
KEY COMPONENTS



SUSTAINABLE WAY FORWARD IN THE LEATHER CLUSTERS ACROSS INDIA



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From the desk of General Secretary



70th FOUNDATION DAY CELEBRATION

It was decided in the 532nd meeting of the EC that this year the 70th Foundation Day will be celebrated virtually and the Prof. B. M. Das Memorial Lecture would be organized on Webinar platform, due to situation raised for Pandemic COVID – 19 and Lock down.

Prof. Saikat Maitra, Vice Chancellor, Moulana Abul Kalam Azad University of Technology, Kolkata has kindly consented to deliver the prestigious Prof. B. M. Das Memorial Lecture through webinar titled “Post COVID Challenges for the Technical Institutes to empower the technologists for dedicated service for Nation build up”.

The program will be started at 5.00 pm on Friday the 14th August 2020 (Entry from 4.45 pm).

Following is the details to join the web based seminar :-

Zoom Meeting : <https://us02web.zoom.us/j/81757448657?pwd=aTA2bHZmYUtlEQ2xDc3UvZU5oUGJ2UT09>

Meeting ID : 817 5744 8657

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This year the name of the toppers in B. Tech and M. Tech from Moulana Abul Kalam Azad University of Technology and Anna University, who are entitled to receive the Prof. B. M. Das Memorial Medal, will be announced in the programme and the Medals and Certificates will be sent to the respective awardees by post later.

The name of the J. Sinha Roy Memorial award winner will also be announced in the meeting and the Award Cheque along with the Certificate will be sent to him/her by post later.

No formal Invitation card will be posted this year. Soft copy of the digital invitation card will be transmitted in due course to the Members who have already provided their email IDs to our office. Rest will find the same on our website www.iltaonleather.org.

Further progress and details about the program will be informed nearer the time of the event.


You are requested to :-

- Kindly inform us your 'E-Mail ID', 'Mobile No', 'Land Line No', through E-Mail ID: admin@iltaonleather.org or over Telephone Nos. : 24413429 / 3459. This will help us to communicate you directly without help of any outsiders like Postal Department / Courier etc.
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Replica of the formal Invitation Card :



Indian Leather Technologists' Association



Speaker: Prof. Saikat Maitra,
Vice Chancellor, Moulana Abul Kalam
Azad University of Technology, Kolkata

Topic: Post COVID Challenges for the Technical
Institutes to empower the technologists for
dedicated service for Nation build up.

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August 2020
5.00 PM
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70th
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CELEBRATION
B M Das
Memorial
Lecture

ILTA Executive Committee cordially invite you
to 70th Foundation Day Celebration by a scheduled Zoom meeting

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President

Susanta Mallick
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(Susanta Mallick)

Read and Let Read :-

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General Secretary and the Members of the Executive Committee are available to interact with members at 19.30 hrs, over Phone/Conference call on every Thursday

The Spread of Leather

Dr. Buddhadeb Chattopadhyay

Former Principal of Govt. College of Engineering & Leather Technology, Kolkata
& Present Principal, MCKV Institute of Engineering, Liluah, Howrah, W. B.



The main oxygen Leather Tannery is achieving enhanced spread of the finished Leather. Whatever technological marvels we may exhibit; all will be leveled out, if, we cannot achieve the right spread/yield in the manufacturing process. Simply because of the reasons that spread influence 1) costing and 2) the revenue to the factory since, leather (except Sole/Insole) are sold on the basis of area of the leather. So, higher the area per kg of wet salted Hides & Skins is; higher is the sale value.

Now this is the most crucial blood flow, often neglected or unconcerned by the tanners. My tannery experience and several experiments on this factor done at the Bata India Ltd. under my mentor Dr. Zdenek Kotasek, nearly 40 years ago, compelled me to sum up very briefly on the aspects of how and what influences the spread.

There is no single panacea for obtaining right spread of leather, several chemical and physical factors are obviously related to it. Spread needs to be built in step-by-step. We shall delve into them one after another.

Raw Hides and Skins: The spread depends on the method of curing as following order in terms of increasing spread: freshly slaughtered straight from abattoir > brine cured > wet salted > dry salted > flints. It is difficult to handle the flints, because the decay that proceeds inside in anaerobic condition is difficult to assess. It shows no sign of hair slip as a diagnostic tool. It becomes evident during or after liming operation with lot many holes dissolving the corium minor and major. Spread also depends on the origin of Hides and skins. Imported hides or skins from developed countries or organized firm house with

more compact fibre bundles of three dimensional woven collagen structure often give less spread.

Chemical Operations: One of the most neglected operation like soaking influence spread in a great amount. Soaking is not only meant for rehydration of hides and skins, but how much it will be able to hydrate inside the fibre bundles and the interfibrillary matrix is most important factor. By observing the plumpness and resiliency of the soaked hides and skins, the experienced tanner can guess the extent of soaking. Here enzymes can play a big role to increase the RoI. In some countries, I have seen incorporation of putrid soak liquors without Sodium Sulphide, in the fresh soaking bath. The enzymes can be derived from the bacteria of the putrid soaks but it has to be done with utmost care, because any excess can dissolve the hide stock into a broth. It might be right to reiterate here that the beam house operation is the crèche of Leather making. The steps for wrinkle removal depend on appropriate soaking operation. The wrinkle, growth marks reduces spread considerably.

The proper liming and opening up of fibre bundles and also removal of interfibrillary denatured globular proteins is important for obtaining good spread in future. The question remains, who cares for these essential factors? If, it is not cared from the very beginning then step-by-step building up of right spread might not be achieved.

Since the desired hydrothermal stability of Chrome tanned leather relies on the extent of cross linking between the Collagen triple helices in the pelt matrix, it would be by the nature of the chemical reaction involved, compromise with the spread and we may not compensate here. The same is true with syntans. The greater we load with syntans in retanning process, the more we lose the spread. Optimum input and near complete exhaustion of syntan should be aimed for. I am always in favour of restoring, “**Atom Economy**”. Don’t force the leather to eat chemicals beyond its capacity. It will then spit both the money spent for the chemicals and increase the pollution load down the drain. Working with minimum variables in chemical store items will increase the profitability too. In any case the RoI of

tanning industry is low enough which, therefore, do not attract major corporate players for investments in this sector. They consider that it is not their cup of tea. In order to make the tanneries with low RoI sustainable; spread is, therefore, a very important factor indeed.

Higher amount of syntan loading is possible only iff, the liming is done on such leathers in extended period, to open up further, may be using some Sodium tetrathionate, Sodium Carbonate etc. during liming.

Thinner the shaved wet blues are, better is the spread. This is the rule of thumb. It, therefore, calls for production planning with a balancing product mix of thickness. True, it is not in the hand of the tanners; rather it is in the hand of the buyers. Because the buyers specify the thickness range. But attempts are to be made to fetch orders on higher thickness and lower thickness ranges both.

Spread also depends on the extent of lubrication in the interfibrillary space. The proper lubrication between the fibre bundles will not only ensure a softer leather, but also increase of spread. In this regard the multi-layer insulation will reduce the frictional coefficients to a greater extent and we have tested that an oil containing straight chain fatty acid is more effective in increasing the spread than the branched chain or unsaturated counterpart. As per the nature of hydrophilic heads of the fatliquors are concerned, the spread increases in the following order, Sulphited>Sulphonated> Sulphated. Synthetic fatliquors have the advantage obviously but there is a disadvantage also for elimination reaction, if, it is sulfochlorinated. Because the formation of chain chlorine cannot be over ruled. The hydrochloric acid that will be produced upon elimination, will not only make the matrix structure slightly brittle and hard, it will also for the same reason reduce the spread.

Oils generally are liquid, because of their unsaturation; but lower the Iodine value, better is the result; if, the fatliquor is made from that oil so far, the increased spread as concerned. If, the synthetic fatliquor is totally saturated, it would favour multilayer insulation increasing softness no doubt but; then it will not



help in retaining the bound water inside. The moisture content of the finished leather is important for achieving spread too. 14 - 16% moisture content (w/w) is critical too for optimum spread. Unless, the care is taken a) in selection of right blend of fatliquor, b) extent of penetration and c) the gradient of diffusion inside the leather matrix; conditioning the crust, before staking will not help at all.

Some tanners have a mis-concept, they look out for a fatliquor, which has a great emulsion stability. But actually, my experience is different. What we need is, intermediate stability of oil-in-water emulsion of the fatliquor, such that when it penetrates inside the fibre matrix, it should preferably invert their emulsion into water-in-oil (much like umbrella in rain storm), in order to ease lubrication. Greater stability will reduce the fatliquor uptake and retention of fatliquor inside the collagen matrix. This will also make the fixation of fatliquor with HCOOH less effective. This in turn will increase the BOD of the discharge too.

Physical Operations: As stated earlier lower the shaving thickness is; higher would be the spread. Setting is important operation for gaining spread also. Before the setting operation, sammying has to be done correctly to condition it for right setting. Reversible setting is better option. The adjustment of pressure in setting and sammying m/cs both are important factor. Many a time, I have noticed that the inappropriate hardness of rubber roller of the setting m/c makes the pressure inaccurate. At least 20 - 30 degree shore hardness of rubber roller is required. It is advisable to paint the rubber roller with lime solution on the weekends to maintain the hardness of the rubber roller in control.

Next important factor is conditioning and pilling overnight to even out the moisture and staking, slow-comb staking gives a better spread than vibrational staking. But because of the

advantage, I would recommend a combination of both. Slow-comb first, followed by vibrational.

Method of drying Leather is one of the most important factors in crust yard so far, the spread is concerned. Slow gradient of rising temperature and reverse gradient of wind velocity in the drying tunnel is better for spread. No doubt the spread increases in drying methods as per the order: paste drying > toggle drying > vacuum drying > drying under drying tunnel > drying under shade or in hanger on a conveyor slowly spiraling the top of the shop floor etc.

We can only process the corrected grain finishing leather for paste drying for the remnant paste residue on the surface of the leather needs to be snuffed off. Drying is important method to control too because here the moisture content should be in proper condition throughout the cross section. Both over drying and under drying are bad for leather making. As a general observation, both over and under doing is bad in any unit operation of the tanneries. Different weights of the lot like, raw weight, pelt weight, shaved weight etc. can be a spread tracking tool.

I didn't observe any finishing m/c or operation available at the Bata Tannery then, having over all sizable influence on the spread of the leather. This discussion is made to share my experience, since in a Webinar Zoom conference of ISQUARE platform of Actech Alfa, it was my friend Dr. B. Chandru Shekar (as affectionately called), the former Director of CSIR-CLRI, Chennai, raised this issue inviting elaborate discussions and experience sharing. I wanted to comply with the Director, but with a brief one.

[This paper is dedicated to the memory of Late **Dr. Zdenek Kotasek** to whom the author is profoundly grateful.]

Read and Let Read :-

JILTA



INDIAN LEATHER PRODUCTS ASSOCIATION

The Indian Leather Products Association (ILPA), established in 1987, is a premiere representative body of manufacturer-exporters of superior quality leather and leather products with head office in Kolkata and a regional office in Chennai.

IMPORTANT ACTIVITIES OF ILPA :

- Brings together manufacturer & merchant exporters on a common platform.
- Stimulates growth & development of the industry as a whole.
- Promotes export of leather & leather products.
- Develops & maintains symbiotic liaison with international trade bodies & Chambers of Commerce.
- Organises trade delegations to international fairs & seminars.
- Organises various Seminars/workshops both the benefit of its members and industry.
- Promotes International Fairs and RBMs like IILF Kolkata, ILPA Buyer Seller Summit.
- Organises the ILPA SHOW : Leather on the Ramp , one of the most prestigious and sought after Fashion event in Eastern India.
- Closely involved in setting up the Calcutta Leather Complex(CLC).
- Runs and manages the Freya Design Studio : a CLE award winning Design Studio both for leather goods and footwear.
- Runs and manages the ILPA INFRASTRUCTURE DEVELOPMENT FOUNDATION (IIDF) – a state of the art Common Facility Centre.
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KNOW YOUR SHOE

Part - 3

Mr. Shome Nath Ganguly

Former Principal, Karnataka Institute of Leather Technology

VARIOUS TYPES OF BOOTS USED IN FOOTWEAR INDUSTRY



HUNTING BOOT

SAFETY BOOT

BOXING BOOT

A boot is a special type of shoe which covers the foot and the ankle and extends up the leg, sometimes as far as the knee or even the hip. Most boots have a heel that is clearly distinguishable from the rest of the sole, even if the two are made of one piece. They are typically made of leather or rubber, although they may be made from a variety of different materials. Now a day's synthetic soles are used widely. Rubber vulcanized soles are used mainly for the safety boots in India. Boots are worn both for their functionality protecting the foot and leg from water, snow, mud or hazards or providing additional ankle support for strenuous activities as well as for reasons of style and fashion.

In India Military and Para military troops always use boots depending upon their types of uses. Leather sole, Micro & vulcanized Rubber sole, PVC & PU unit sole are the name of the soles used for making boots.

Cowboy boots are a specific style of riding boot which combines function with fashion. They became popular among cowboys in the western United States during the 19th century. Traditional cowboy boots have a Cuban heel, rounded to pointed toe, high shaft, and, traditionally, no lacing. The upper of the shoe is normally made from cowhide leather but may be made from other exotic leather such as Buffalo, Kangaroo or Horse leather.

Hiking boots are designed to provide extra ankle and arch support, as well as extra padding for comfort during hiking. They are constructed to provide comfort for miles of walking over rough terrains, and protect the hiker's feet against water, mud, rocks, and other wilderness obstacles. These boots support the ankle to avoid twisting but do not restrict the ankle's movement too much. They are fairly stiff to support the foot. A properly fitted boot and / or friction-reducing patches applied to troublesome areas ensures protection against blisters and other discomforts associated with long hikes on rugged terrain.



A **snow boot** is a type of footwear which generally made with waterproof or water-resistant leather. Beside using typical leather their construction process also differs from other boot & shoe. The boot, in almost all cases, has a high side, keeping snow from entering the boot, and a rubber sole, to keep water out. Because of their water-resistant material, snow boots are often used in wet, slushy, muddy and of course in snowy situations. This means not a half inch dusting of snow or water but quite deep heavy wet snow slush or mud.

DIFFERENCES BETWEEN SNOW BOOT & WINTER BOOTS

Snow boots have many differences from other winter boot.

1. Snow boots are waterproof or water resistant but winter boots are not.
2. The two boot types have different uses. The snow boot is used on very wet or snowy conditions while winter boots are better used on well-maintained roads or paths or even while shopping.
3. Snow boots are made of easy-to-clean materials but winter boots are not. However this clean ability and waterproofing comes at the cost that snow boots are heavier less breathable and more expensive.
4. Snow boots always extend partway up the leg, unlike hiking boots.

5. Snow boots are always moderately to heavily insulate with the insulation under the waterproof / water - resistant layer.

During wet or snowy weather, snow boots are worn to keep the foot warm and dry. They are typically made with rubber or other water-resistant material. It has multiple layers of insulation and with medium heel to keep snow out. Boots may also be attached to snow shoes to increase the distribution of weight over a larger surface area for walking in snow. Ski boots are a specialized snow boot. The ski / boot / binding combination are used to effectively transmit control inputs from the skier's legs to the snow. Ice skates are another specialized boot with a metal blade attached to the bottom which is used to propel the wearer across a sheet of ice. Inline skates are similar to ice skates but with a set of three to four wheels in lieu of the blade, which are designed to mimic ice skating on solid surfaces such as wood or concrete.

Boots are designed to withstand heavy wear to protect the wearer and provide good traction. They are generally made on wider shape last with strong leather uppers and non-leather outsoles. Soles are used mostly moulded unit sole made from synthetic materials. They may be used for uniforms of the police or military as well as for protection in industrial settings such as mining and construction worker. Protective features may include steel-tipped toes, thin steel insole plate in between sole & insole and ankle guards.

Ref : //en.wikipedia.org // wiki // athletic shoe // boot snow // boot ankle

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NEW VIDEOS INTRODUCING KEY TECHNOLOGIES FOR TANNERY EFFLUENT TREATMENT



The IULTCS is pleased to announce the addition of an animated introduction to 'Key Technologies for Tannery Effluent Treatment and Solid Waste Handling' to the IUE webpage of the Environmental Commission. The videos give an introduction to each treatment technology and describe the function and what potentially can be achieved. <http://www.iultcs.org/effluent.php>

The animated treatments are part of the environmental training courses of W2O Environment, which were made available by the company to be shared on the webpage of the IUE commission. W2O Environment Ltd was founded in 2005 and is an internationally recognized environmental company, supporting the leather industry worldwide, which provides environmental engineering of tannery effluent treatment and sludge handling plants and environmental training at Universities, for organization and for the overall leather sector.

Dr Wolfram Scholz, Chair IUE Commission

(Source : IULTCS News Release – 08/07/2020)

ETHIOPIA TO HOST GLOBAL LEATHER INDUSTRY EVENTS IN 2021

As the world experiences the full impact of COVID-19 the global leather industry looks forward to the time when we have the opportunity to meet again, share our knowledge and renew old friendships. We also look towards countries where we are seeing investment in the industry and the enthusiasm to embrace innovation and adopt new technologies. The launch of “9 Days of Leather” in Addis Ababa, Ethiopia couldn't be more pertinent.

Events will commence on 01 November 2021 with the 5th World Leather Congress (WLC) organized by the International Council of Tanners and COMESA LLPI with the theme 'Leather – a Gift of Nature'.

Delegates can then move on to the major leather science and technology event the XXXVI IULTCS Congress which will be held from 03-05 November 2021 and will be exploring the theme of 'Greening the Leather Value Chain'. The call for Congress abstracts will open shortly and abstracts will be able to be uploaded to the website.

The Congress venue will be the Ethiopian Skylight Hotel, close to the International airport in Addis Ababa.

The final three days, 06-09 November 2021 will then be dedicated to the All Africa Leather Fair (AALF) - Africa's largest international exhibition dedicated to leather, accessories, components, footwear, leather goods, automotive and furniture.

Prof. Mwinyi Mwinyihija, IULTCS Congress President and Executive Director Africa Leather and Leather Products Institute (ALLPI) extends a warm welcome to leather industry friends from around the world as Africa opens the doors in 2021.

NEWS RELEASE FROM THE IULTCS ON BEHALF OF AQEIC

Mercè Panikeri Alemany, Barcelona 1920 - 2012, co-founded AQEIC in 1950 and was the first female president of IULTCS from 1975 to 1977. She was an entrepreneur and actively co-operated in the Catalan Society promoting the importance of small and medium sized companies, feminism and women's rights.

The Catalan Women's Institute, with the support of the Catalan Government (Govern de la Generalitat de Catalunya) is officially honoring her 100-year anniversary and will celebrate with several commemorative events. They include presentations and round tables to reflect upon the importance of her professional life. A biography will be published to emphasize her valuable contributions and thoughts to the society throughout her life.

Mercè graduated in Chemistry in 1943 from the University of Barcelona and worked in the company that her father founded in 1922, Paniker S.A. In 1954 she became General Manager after her father's death. In 1974 she founded Bil.liena Química, S.A. She was also a member of the board for the Small and Medium-sized Companies in Catalonia (PYMEC) and representative of the Social Council of the University of Barcelona.

She was a member of the Organizing Committee for the First Congress of Women and Economy. In 1992 she co-founded FEMVISIO, a European organization dedicated to the promotion of women entrepreneurs and a participant of the IV World Women Congress in Beijing in 1995. In 1998, in memory of her father, she founded the Ramuni Paniker Trust Foundation in the State of Kerala (India) to support talented students with limited economic resources in rural areas. She is also recognized for her political participation and contribution to the democratic recovery in Spain.

Mercè Paniker was one of the pioneering women as entrepreneur and defender of women's rights in Catalonia. She always fought to defend the economic independence of women and supported the initiatives undertaken in Catalonia in favour of small and medium-sized companies. She was convinced that women should lead business organizations of all kinds and, in her public interventions; she called women to enter an arena that had been denied to them.

As a member of the United Nations Industrial Development Organization (UNIDO), towards the end of her professional life, she carried out industrial advisory missions in Africa, Asia and Latin America. Her work has been recognized at a European level by the European Women's Lobby and by global institutions such as the United Nations.

AQEIC has joined the Mercè Paniker Memorial Year. Barcelona hosted the III Congress of IULTCS in 1953, when Mercè Paniker was President of AQEIC and the XIV Congress of IULTCS in 1975, when she was President of IULTCS.

(Source : IULTCS News Release – 10/07/2020)



Opening Ceremony and attendance of the XIV Congress of IULTCS, Barcelona, 1975



Gala Dinner of the XXXI Congres of IULTCS, Valencia, 2011. Mercè Paniker with IULTCS former Presidents. From left to right: Dr Volkan Candar (Turkey) 2012 – 2013; Mr. Juan Salazar (Colombia). 2001 – 2003; Mrs. M. Paniker de Pelach (Spain), 1975-1977; Prof.Dr. Jaume Cot (Spain) . 2003 – 2005; Prof Dr. Bi Shi (China) 2010 – 2011; Mr. Elton Hurlow (USA), 2008 – 2009; Prof Dr Anthony J. Covington (United Kingdom), 1997 – 1999.



Read and Let Read :-

JILTA

Socio - Environmentally Sustainable Practices - A Review on Research Methodologies and Research Gaps

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Abstract :

Traditional manufacturing sector is considered the base of economy of many developing countries. If this sector is not sustainably developed, it will lead to an unemployment crisis and also will affect the economy very severely. Traditional manufacturing practices have focused primarily on the pre-manufacturing, manufacturing and use stages of product lifecycles, which leads to excessive waste and landfill. While lean manufacturing practices focus on waste elimination (Reduce) and green manufacturing practices emphasizes the use of 3Rs (Reduce, Reuse and Recycle). However, none of these strategies enable maximizing value recovery from end-of-life products (Fazleena et. al., 2017), which lead to un-sustainable manufacturing.

In this paper an attempt has been made to identify the research gaps and research methodologies of few selected earlier literature those tried to identify the barriers in implementation of sustainable practices and role of sustainable practices on performance outcomes of different sectors with a special focus on leather sector.

Key words: sustainability, lean manufacturing, sustainable manufacturing

Introduction :

Manufacturing subsystems coexist alongside human, ecological, and natural subsystems. Therefore, sustainable manufacturing is a philosophy that cannot be considered independent of broader environmental and socioeconomic systems (Dornfeld, 2013). The phrase sustainable manufacturing is sometimes used carelessly to describe the actions related to characterizing and reducing the environmental impacts of manufacturing. The most admissible definition of

sustainable manufacturing was given by U.S. department of commerce as “the creation of manufactured products that use processes that minimize negative environmental impacts, conserve energy and natural resources, are safe for employees, communities, and consumers and are economically sound” (Anastasiia et. al., 2017, pp 747). Sustainable production is one of the Sustainable Development Goals (SDG) set by UN in 2015, which defines manufacturing as one of the measures toward sustainable development. While manufacturing has negative impact on the environment, it also creates jobs and has a positive contribution to the population’s needs for food, shelter, healthcare, as well needs for comfort and decent level of life. Also, the manufacturing sector is important for sustainable development of the global society since it helps addressing global challenges such as needs for renewable energy sources, green buildings, etc. Many researchers (Molamohamadi and Ismail, 2013; Rosen and Kishawy, 2012) have discussed the relation between sustainability and manufacturing. Two sub-categories have been defined: manufacturing for sustainability and sustainability of manufacturing (Anastasiia et. al., 2017).

Sustainability, however, implies a great deal more than the simple act of analyzing and modifying the environmental performance of manufacturing processes and systems (Paul et al., 2014). Sustainability refers to the synchronisation between environmental, social and economic balance.

The stakeholders have a difference of opinion in explaining the meaning of sustainability in leather sector. Non-Government Organizations (NGOs) have more focus on environmental and social sustainability whereas chemical companies are more concerned with economic sustainability but the consumers have a divided thought as some focussed more on the social sustainability while some placed durability as top priority (Amit, 2017).

Literature Review :

Material and energy are necessary inputs of any manufacturing processes and systems; wastes and emissions, which are generally classified as outputs, are, in turn, inputs to other industrial and natural systems (as shown in Figure 1), where their impact is felt socially, environmentally, and economically, Dornfeld. et.al., (2013).

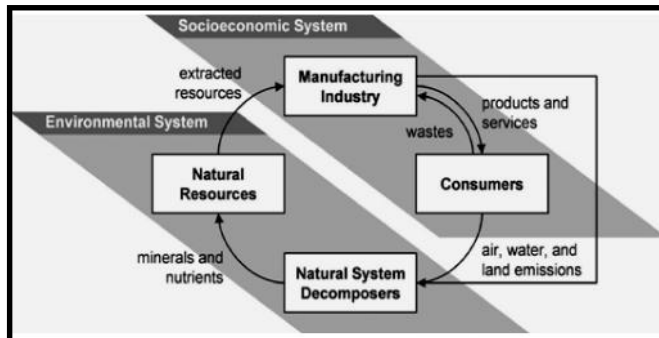


Figure 1. The role of the manufacturing industry in a sustainable system (Source : Dornfeld, 2013).

For the sustainability of a manufacturing system, it is utmost important that the social and environmental impact of its output has to accepted by the stakeholders. The manufacturing organizations do understand that to sustain in the market and to prominent their position they have to opt different social and environmentally sustainable practices to reduce the negative impact of their activities on the stakeholders. Different researches have tried to identify the barriers in implementations of different sustainable practices in different sector. Their major findings are reported in table 1 and table 2.

Review on Research Methodologies : The research methodologies and major findings of some of the selected earlier literature is presented in the Table 1.

Table 1

S.No.	Authors	Title	Major Findings	Research Methodology
1	Gupta et. al. (2017)	Interdependence among dimensions of sustainability: evidence from Indian leather industry	Predicted a significant bi-directional negative relationship between social performance and economic performance while economic and environmental performance has a bi-directional positive relationship. However, the relationship between social and environmental performance showed mysterious and mixed trends	➤ Partial least square (PLS) based structural equation modeling

S.No.	Authors	Title	Major Findings	Research Methodology
2	Dwivedi et. al., (2019)	Sustainable manufacturing evaluation model focusing leather industries in India: A TISM approach	Identified interactive interrelationships between KPIs to achieve higher sustainable performance in leather industry	➤ Kappa analysis ➤ Total interpretive structural modeling (TISM) ➤ Matrice Impact Croises Multiplication Applique analysis
3	Moktadir et.al., (2017)	Drivers to sustainable manufacturing practices and circular economy: a perspective of leather industries in Bangladesh	The main contribution of this study is to assess, prioritize and rank the drivers of sustainable manufacturing practices in the leather industries of Bangladesh	➤ Graph Theory ➤ Matrix Approach
4	Gupta et. al. (2018)	Sustainability strategies in the Indian leather industry: an empirical analysis	The most consistent progress in achieving economic value by Uttar Pradesh, while West Bengal shows the most progress in creating social value, and Tamil Nadu leads the pack in terms of creating environmental value	➤ Case study approach for investigative analysis ➤ Triangulation method – interviews and field visits, for data verification
5	Moktadir et. al., (2018)	Modeling the interrelationships among barriers to sustainable supply chain Management (SSCM) in leather industry	Thirty-five barriers to SSCM implementation were identified. Among them, the most common 20 barriers were selected with the help of industry experts out of which nine barriers were classified as "causal" and eleven as "influenced".	➤ Decision Making Trial and Evaluation Laboratory (DEMATEL) approach
6	Ramdhani et. al., (2017)	Model of green technology adaptation in small and medium sized (SME) tannery industry	Adaptation pattern in the development of green technology for the tannery industry need to consider in harmony with the organization condition, technological condition and environmental influence	➤ Survey research followed by review of casual relationship between model of green technology adaptation and SME
7	Reyes et. al., (2018)	Total quality environmental management (TQEM): adoption status in the Chinese manufacturing sector	There is less awareness of TQEM in the Chinese manufacturing sector than other environmental and quality/operations improvement approaches and the study also reveals the drivers, results and challenges of TQEM implementation	➤ survey-based exploratory study ➤ Data analysis using a combination of descriptive and inferential statistics (SPSS analysis)

S.No.	Authors	Title	Major Findings	Research Methodology
8	Talib et. al., (2011)	Analysis of interaction among the barriers to total quality management using interpretive structural modeling approach	12 barriers related to TQM implementation are identified through the literature review and expert opinion, classified into two groups of barriers, one having high driving power and low dependency requiring maximum attention and of strategic importance (such as lack of top-management commitment, lack of coordination between departments) and the other having high dependence and low driving power (such as high turnover at management level, lack of continuous improvement culture, employees' resistance to change)	➤ Interpretive structural modeling (ISM)
9	Talib et. al., (2012)	An empirical investigation of relationship between total quality management practices and quality performance in Indian service	It was also found that quality culture was perceived as the dominant TQM practice in quality performance. The other practices such as quality systems, training and education, teamwork, and benchmarking showed a positive relationship with quality performance.	➤ Empirical data collection
				➤ Factor approach
				➤ Pearson's correlation
				➤ Multiple regression analyses
10	Talib et. al., (2013)	An instrument for measuring the key practices of total quality management (TQM) in ICT industry: an empirical study in India	The study revealed ten TQM practices to be most important out of 17 practices identified from literature	➤ Data analysis using descriptive statistical and factor analyses using SPSS 16.0 software
11	Jong et. al., (2019)	The relationship between TQM and project performance: empirical evidence from Malaysian construction industry	TQM practices were partially correlated with project performance of organizations. Specifically, operation focus and workforce focus were perceived as dominant TQM practices on project performance	➤ Factor analysis: Principal component analysis (PCA)
				➤ Cronbach's coefficient alpha after factor analysis

S.No.	Authors	Title	Major Findings	Research Methodology
12	Shah et. al., (2019)	Integrated quality environmental management implementation in food processing SMEs A case study of a developing country	The results of this study found a significant relationship of all identified Critical success factors (CSFs), (like, leadership (LS), employee management (EM), strategic planning (SP), information management (IM), process management (PM), supplier management (SM) and customer focus (CF)) with operational performance (OP) in food processing SMEs whereas EM, IM, PM and SM were insignificant with the Environmental Performance (EP) in the food processing SMEs.	➤ SPSS version-23 ➤ Smart PLS-3
13	Bhakaret. al., (2018)	Sustainability assessment framework for manufacturing sector: a conceptual model	A hierarchical framework for sustainability assessment of manufacturing organizations was developed	➤ Interpretive structure modelling (ISM)
14	Gupta et. al., (2017)	Pollution Prevention is the key to drive sustainability: Preliminary findings from a Tannery unit in India	With the help of pollution preventive measures, such as replacement of salted skin with fresh skin and chromium salt with phosphonium based tanning agent, the case firm could bring down the level of Total Dissolved Solid (TDS).	➤ Case-study based inductive research
				➤ Triple Bottom Line Approach (TBL)

Review on Research Gaps: The research gaps identified by some of the earlier literature is presented in Table 2.

Table 2

S.No.	Authors	Title	Major Findings	Research Methodology
1	Gupta et.al., (2017)	To Analyse the sustainability strategies of three leading states in the Indian leather industry – Tamil Nadu (TN), West Bengal (WB) and Uttar Pradesh (UP)	UP seems to be making the most consistent progress in achieving economic value, while WB shows the most progress in creating social value, and TN leads the pack in terms of creating environmental value	The opaqueness with which the Indian leather Industry conducts social and environmental practices clearly limits the sources of accurate and reliable data, and the ability of researchers to precisely identify the problems and suggest solutions.

S.No.	Authors	Title	Major Findings	Research Methodology
2	Anu et al., (2019)	To investigate the direct and indirect effects of TQM practices on various performance indicators specifically in the Indian manufacturing context	TQM implementation and various performance indicators have a positive relationship	Degree of TQM implementation, scope of operation and type of organization will lead to different performance effects
3	Dwivedi et al., (2019)	To identify and evaluate sustainable manufacturing policies model focusing leather industries in India	identified interactive interrelationships between KPIs to achieve higher sustainable performance in leather industry	Statistical validation of the key performance indicators depends to a large extent on the judgments of the team of experts which can have a certain degree of bias. Also lack of use of advance software for analysis and exploring the interactions between the indicators
4	Kanagaraj et al., (2015)	This review describes various eco-friendly challenges and major achievements for abatement of pollution in leather processing	reduction in pollution loads such as BOD & COD, upto levels of 50% & 40%, could be achieved in leather processing by different state of art of available cleaner leather processing methods	Various challenges in implementing different cleaner leather processing methods at the industry level from research laboratories
5	Moktadir et al., (2018)	Identification of barriers and establishment of causal relationships between them to facilitate the effective implementation of sustainable supply chain Management (SSCM) in the Bangladeshi leather processing industry	Thirty-five barriers to SSCM implementation were identified. Among them, the most common 20 barriers were selected with the help of industry experts out of which nine barriers were classified as 'casual' and eleven as 'influenced'.	Identification of barriers to SSCM was largely dependent on experts' feedback, so careful collection of the expert feedback was the limitation.

S.No.	Authors	Title	Major Findings	Research Methodology
6	Talib et al., (2011)	To understand the mutual interaction of barriers which hinder the implementation of total quality management (TQM) in organizations and to identify the 'driving barriers' and the 'dependent barriers'	12 barriers related to TQM implementation were identified through the literature review and expert opinion, classified into two groups of barriers, one having high driving power and low dependency requiring maximum attention and of strategic importance (such as lack of top-management commitment, lack of coordination between departments) and the other having high dependence and low driving power (such as high turnover at management level, lack of continuous improvement culture, employees' resistance to change)	Model used for identification and ranking of TQM barriers was not statistically tested and validated
7	Chen et al., (2018)	To analyzed the relationships among TQM, transformational leadership, executive ability and sustainable competitive advantage.	TQM significantly affects transformational leadership, executive ability and sustainable competitive advantage. Transformational leadership, executive ability significantly affects firm sustainable competitive advantage and each of them has the mediating effect between TQM and sustainable competitive advantage and both of them has the serial mediating effect to the relation between TQM and sustainable competitive advantage	Sample size and its selection is a limitation

S.No.	Authors	Title	Major Findings	Research Methodology
8	Ramdhani et. al., (2017)	To discuss adaptation of Model of green technology to reduce waste produce by tanning industry	Adaptation pattern in the development of green technology for the tannery industry need to consider in harmony with the organization condition, technological condition and environmental influence	Appropriateness of the communication methods (counselling) at the level of craftsman, which is often neglected, affects the acceleration of innovation adoption and diffusion.
9	Gupta et. al., (2017)	To demonstrate the difference in firm performance between pollution prevention and pollution control strategies using a selected case study from the Indian leather industry	With the help of pollution preventive measures, such as replacement of salted skin with fresh skin and chromium salt with phosphonium based tanning agent, the case firm could bring down the level of Total Dissolved Solid (TDS).	Being based on a single case study the findings of this case study cannot be generalized.

Major findings and discussions :

The application of the principles of sustainable development in different manufacturing industries in the developing countries is more difficult as it's considered as a more complex concept by them. While many empirical research endeavors report the lack of vigor in implementing sustainability as a manufacturing strategy, also current popular theory-driven approaches are not sufficient to understand the dynamics and organizational barriers in implementing sustainability as a manufacturing strategy (Marco et. al., 2015).

If we see the case particularly with respect to leather sector, we find that it is an employment intensive sector providing employment to around 4.5 million people. This sector comprises tanneries (where hide and skins are transformed into leather) and manufacturing units (where leather footwear, garments and outerwear, and assorted leather goods are manufactured). In fact, tanning is the largest industry in the world based on a by-product (Meryem 2012). Typically, the hides/skins of cattle, goat and sheep are used for mass leather making which

generally represent the 5% to 15 % of the total market value of the animal (Ramachandran et al., 2013). If we see the raw material availability in the form of different raw hide/skins in India, it has 618 thousand tonnes of Buffalo hides which is approximately 65% of the total 957 thousand tonnes of buffalo hides of the world, while it has 5% of the total cattle hide of the world (more than 8 million tonnes). India also has 11% of total Goat skin production of the world (around 1261 thousand tonnes). Though leather is one of the sectors in which India has abundance of raw material (India is endowed with 18% of world cattle & buffalo and 9.2% of the world goat & sheep population), even then India has only around 2.5% of the total value of global exports. The export of footwear, leather and leather products from India reached a value of US\$ 5.69 billion during 2018-19, out of which 45.48% share is hold by different categories of Footwear followed by Leather Goods & Accessories including Saddlery & Harness with a share of 28.0%, and Leather Garments 8.23% (Council of leather exports, <http://leatherindia.org/indian-leather-industry/>, assessed on dated 12/11/2019).

The above reported results of socio-economic facts show that leather sector has an important role in country's economy but resulting pollution from this sector is considered as a source of severe environmental degradation too, resulting which this sector is going through a drastic phase change due to strict environmental regulations at global level. A need is felt to revamp different processing methods for the sustainability of leather sector.

Leather is used in many luxury goods in our daily life, but when it comes to sustainability, consumers tend to link leather to industrial farming, the processing of animals in the food chain, and chemical waste (Gerhard et. al., 2014). The main and major raw material for the manufacturing of leather is a by-product of animal husbandry which is actually unavoidable. It's a case of re-evaluation, if society thinks there is a better alternative use of animal skin than produce leather from it. Currently animal skin which does not go into leather production ends up in incineration or landfill, which reduces the added value of the overall process. Animal skin can be processed into gelatin or collagen products, but not all of the waste that is generated by the livestock industry can be processed into valuable products. Theoretically, it would also be possible to produce biogas, but efficiencies are low and the needed infrastructure is missing. As a result, the highest added value is obtained by tanning the skin to produce leather (Gerhard et. al., 2014). This value addition

can be done effectively by applying innovation in this traditional leather sector. Researcher, Zon et. al., (2018) have identified six key criteria from existing studies on innovation. These criteria included Design-Driven Innovation, Value Proposition, Integration, Production and Market Resources, Capacity and Knowledge, and Funding and Support.

Conclusions :

On the basis of review of above reported literatures it is safe to conclude that :

- 1) The application of the principles of sustainable development in different manufacturing industries in the developing countries is more difficult as it's considered as a more complex concept by them.
- 2) No better alternative use of animal skin is reported till date than produce leather from it which is basically a better value addition to a waste output of meat industry. A challenge needs to be taken for checking and applying different criteria on innovation (Zon et. al., 2018) with respect to leather sector to make it more sustainable with a special attention on the criteria on Integration and Funding & Support.

References :

1. Anastasiia Moldavska, Torgeir Welo, (2017), "The concept of sustainable manufacturing and its definitions: A content-analysis based literature review". *Journal of Cleaner Production* 166, pp 744-755.
2. Anu P. A., Satish K.P., (2019) "TQM practices and its performance effects – an integrated model", *International Journal of Quality & Reliability Management*, <https://doi.org/10.1108/IJQRM-10-2018-0266>.
3. Amit Choudhary, (2017), "What is Sustainable Leather?". MSc Thesis, Department of Social Sciences, Wageningen University.
4. Bhakar V., Digalwar A. K., Sangwan K. S., (2018), "Sustainability assessment framework for manufacturing sector : a conceptual model". 25th CIRP Life Cycle Engineering (LCE) Conference, 30 April - 2 May 2018, Copenhagen, Denmark, *Procedia CIRP* 69, pp 248 – 253.
5. David A. Dornfeld, (2013) "Green Manufacturing, Fundamentals and Applications" book published by Springer, ISBN 978-1-4419-6016-0.
6. Dwivedi A, Agrawal D., Madaan J., (2019) "Sustainable manufacturing evaluation model focusing leather industries in India: A TISM approach", *Journal of Science and Technology Policy Management*, <https://doi.org/10.1108/JSTPM-06-2018-0054>.
7. Chen R., Lee Y.D., Wang C.H., (2018), "Total Quality Management and Sustainable Competitive Advantage: Serial Mediation of Transformational Leadership and Executive Ability", *Total Quality Management & Business Excellence*, pp. 1-18.
8. Council of leather exports (CLE), <http://leatherindia.org/indian-leather-industry/>.
9. Fazleena Badurdeen and I.S. Jawahir, (2017), "Strategies for Value Creation through Sustainable Manufacturing", 14th Global Conference on Sustainable Manufacturing, GCSM 3-5 October 2016, Stellenbosch, South Africa. *Procedia Manufacturing* 8, pp 20 – 27.
10. Gerhard Wolf, Stefan Meier, Alfred Lin, (2014), "Leather and Sustainability: From Contradiction to Value Creation". *World Leather*, pp 14-16.
11. Gupta, S. and Racherla, U. (2017), "Interdependence among dimensions of sustainability: evidence from Indian leather industry". *Management of Environmental Quality*, Vol. 29 No. 3, pp. 406-415.
12. Gupta S.K., Gupta S., Gayathiri S, (2017), "Pollution Prevention' is the key to drive sustainability: Preliminary findings from a Tannery unit in India", *Management of Environmental Quality: An International Journal*, <https://doi.org/10.1108/MEQ-10-2017-0124>.
13. Gupta S., Gupta S., Dhamija P., Bag S., (2019), "Sustainability strategies in the Indian leather industry: an empirical analysis". *Benchmarking: An International Journal*, Vol. 25 Issue:3, pp.797-814.
14. Jong C. Y., Sim A. K. S., Lew T. Y., (2019), "The relationship between TQM and project performance: empirical evidence from Malaysian construction industry", *Cogent Business*

and Management, <http://dx.doi.org/10.1080/23311975.2019.1568655>.

15. Kanagaraj J., Senthilvelan T., Panda R.C., Kavitha S., (2015), Eco-friendly waste management strategies for greener environment towards sustainable development in leather industry: a comprehensive review, *Journal of Cleaner Production*, 89, pp. 1-17.
16. Marco Taisch, Bojan Stahl, Gokan May, (2015), "Sustainability in Manufacturing Strategy Deployment". 12th Global Conference on Sustainable Manufacturing, *Procedia CIRP* 26, pp 635 – 640.
17. Meryem Aziz Alaoui, (2012), "Applying the principles of sustainable development in the leather industry in Morocco: tannery case". *Int. J. Environment and Sustainable Development*, Vol. 11, No. 2, pp 180-193.
18. Molamohamadi, Z., Ismail, N., (2013) "Developing a new scheme for sustainable manufacturing". *Int. J. Mater. Mech. Manuf.* 1, pp 1-5.
19. Moktadir A., Rahman T., Rahman H., Ali S. M., Paul S. K., (2017) "Drivers to sustainable manufacturing practices and circular economy: a perspective of leather industries in Bangladesh", *Journal of Cleaner Production*, 10.1016/j.jclepro.2017.11.063.
20. Moktadir A., Ali S. M., Rajesh R., Paul S. K., (2018) "Modeling the interrelationships among barriers to sustainable supply chain management in leather industry", *Journal of Cleaner Production*, 10.1016/j.jclepro.2018.01.245.
21. I.D.Paul, G.P.Bholeb, J.R.Chaudhari, (2014), "A review on Green Manufacturing: It's important, Methodology and its Application". 3rd International Conference on Materials Processing and Characterisation (ICMPC 2014), *Procedia Materials Science* 6, pp 1644 – 1649.
22. Ramachandran L., Alagumurthi N., (2013), "Application of Key Performance Indicators in a Leather and Shoe Industry for Leanness Analysis Using Multicriteria Approach: A Pre Implementation Study". *International Journal of Advance Industrial Engineering*, pp. 43-47.
23. Ramdhani M.A., Aulawi H., Ikhwana A., Mauluddin Y., (2017), "Model of green technology adaptation in small and medium sized tannery industry", *Journal of Engineering & Applied Sciences*, 12 (4), pp. 954-962.
24. Reyes J. A. G., Yu M., Kumar V., Upadhyay A., (2018), "Total quality environmental management: adoption status in the Chinese manufacturing sector", *The TQM Journal*, Vol. 30 Issue: 1, pp.2-19, <https://doi.org/10.1108/TQM-05-2017-0052>.
25. Shah S. A. R., Jamaludin K. R., Talib H. H. A., Yusof S. M., (2019), "Integrated quality environmental management implementation in food processing SMEs A case study of a developing country", *The TQM Journal*, Vol. 31 No. 5, pp. 740-757.
26. Talib F., Rahman Z., Qureshi M.N., (2011), "Analysis of interaction among the barriers to total quality management implementation using interpretive structural modeling approach", *Benchmarking: An International Journal*, Vol. 18 No. 4, pp. 563-587.
27. Talib F., Rahman Z., Qureshi M.N., (2012), "An empirical investigation of relationship between total quality management practices and quality performance in Indian service companies", *International Journal of Quality & Reliability Management*, Vol. 30 No. 3, pp. 280-318.
28. Talib F., Rahman Z., Akhtar A., (2013), "An instrument for measuring the key practices of total quality management in ICT industry: an empirical study in India", *Serv Bus*, 7, pp. 275–306.
29. Zon-Yau Lee, Mei-Tai Chu, Shiuann-Shuoh Chen and Chih-Hung Tsai, (2018), "Identifying Comprehensive Key Criteria of Sustainable Development for Traditional Manufacturing in Taiwan", *Sustainability*, 10, pp 3275; doi:10.3390/su10093275

Read and Let Read :-

JILTA

LEATHER EXPORTS DOWN 40.5% IN JUNE, BUT RECOVERS FROM APRIL-MAY FALL



This is a significant turnaround and very good news, says association head

Export of leather and leather products and footwear declined by 40.5% to \$244.89 million in June 2020 from \$411.38 million in June 2019 due to COVID-19 pandemic. However, they have recovered from nearly 83% fall in April-May 2020.

“This is a significant turnaround and very good news, as the sector is still under semi-lockdown and had achieved only about 17% of last year’s exports in April and May 2020,” Aqeel Ahmed Panaruna, chairman, Council for Leather Exports said.

For combined April and May 2020, exports stood at \$128.52 million when compared to \$757.11 million the same period last year.

Due to very low level of exports in April and May, the sector was able to achieve exports of \$373.41 million in the first quarter (April-June 2020), which is just 32% of \$1,168.49 million recorded in April-June 2019.

“Our industry is confident of achieving more revival in exports during the second quarter of July – September 2020 wherein about 85% of last year’s exports are expected to take place, provided there are no further lockdowns,” Mr. Panaruna said.

However, he pointed out that the exports during the third quarter i.e. October – December 2020 depends on market resurgence and the sale of inventories currently available with the buyers.

“Nevertheless, despite the challenges and difficulties being faced now, the emerging trade opportunities for India in the wake of changes in global trade scenario will help us in achieving last year’s export level of \$5 billion, during the current year i.e. 2020-21 also,” Mr. Panaruna said.

LEATHER GOODS MARKET NEW REPO LEATHER GOODS MARKET NEW REPORT 2020 TO 2023 - GLOBAL MARKET SIZE, INDUSTRY AND SEGMENT ANALYSIS WITH COVID-19 IMPACT RT 2020 TO 2023- GLOBAL MARKET SIZE, INDUSTRY AND SEGMENT ANALYSIS WITH COVID-19 IMPACT



Final Report will add the analysis of the impact of COVID-19 on this industry.

“Leather Goods Market” research report offers valuable information on global Industry chain, offering massive growth opportunities across developing as well as developed economies. Also, the Leather Goods Market could benefit from the increased Leather Goods demand to bring down the cost of treatment across the globe.

Get a Sample Copy of the Report- <https://www.industryresearch.co/enquiry/request-sample/14807670>

The Leather Goods report released the Key Players Profiles with data includes company details and competitors, Leather Goods models and performance, business SWOT analysis and forecast, sales volume revenue price cost and gross margin:

- adidas AG
- Capri Holdings Ltd.
- Compagnie Financière Richemont SA
- Hermès
- Kering SA
- LVMH Moët Hennessy – Louis Vuitton
- Nike Inc.
- PRADA Spa
- Tapestry Inc.
- VF Corp.

About Leather Goods Market: the offline segment had a significant market share, and this trend is expected to continue over the forecast period. Factors such as significant growth of retail channels in different cities and regions will play a significant vital role in the offline segment to maintain its market position. Also, our global leather goods market report looks at factors such as product premiumization owing to design and material innovation, innovative marketing strategies, and increased spending on personal goods due to growing fashion-consciousness. However, fluctuating operational costs, the impact of trade wars, and the availability of counterfeit products may hamper the growth of the leather goods industry over the forecast period.

MARKET DYNAMICS:

Market Driver : increasing spending on personal goods due to growing fashion-consciousness

Market Trend : increase in demand for luxury handbags made of eco-friendly materials

Market Challenge : fluctuating operational costs

Increasing spending on personal goods due to growing fashion-consciousness. Fashion-conscious consumers seek unique designs, styles, and colors that can provide an aesthetic and modern look to leather goods. In addition also, the rise in customer spending power, evolving lifestyles, and rising penetration of smart phones are also contributing to the growth of the market. Increasing awareness through online channels is encouraging consumers to purchase the latest and unique designs of leather goods. Furthermore, the growing number of working women across the world is also resulting in an increased interest in personal goods, such as handbags and footwear. This increasing spending on personal goods will lead to the expansion of the global leather goods market at a CAGR of over 5% during the forecast period.

Increase in demand for luxury handbags made of eco-friendly materials. The growing demand for leather goods has increased the use of tanning agents for leather, and the improper disposal of these agents has resulted in ecological imbalance. Thus, governments have devised stringent laws on the proper treatment of these tanning agents and related solutions before disposal. Thus therefore, the increasing use of organic leather is expected to have a positive impact on the overall market growth.

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The Report comprises complete research of Leather Goods industry chain structure, R & D, raw materials, manufacturing plants, regional trading (import export and local sales), online sales channel, offline channel, key target consumers, development trends which can help to make a top market place universally.

Why should one buy this report ?

- ❖ This Leather Goods Market report gives an essence of market size, CAGR values, profiles of key companies, and different game plans used by Leather Goods stakeholders to make vital business decisions.
- ❖ It gives a thorough Leather Goods product knowledge, competitive analysis of Leather Goods market, growth, driving and restraining factors.
- ❖ The Leather Goods report gives the clear understanding of Leather Goods market with 6 years of the forecast from 2019 to 2023.
- ❖ Management ascendancy, global Leather Goods marketers, and business traders can invest their precious time in product launches, Leather Goods marketing strategies and marketing tactics after examining this research report.
- ❖ Report gives an in-depth knowledge of Leather Goods product manufacturers, new entrants, financial analysts, Leather Goods suppliers, product portfolio, distribution strategies, and future plans.
- ❖ Lastly Leather Goods Market report analyzes different driving factors associated with Leather Goods market growth, major challenges, and Leather Goods opportunities. Report surveys on dynamics, the scope of production, a study on the complete pricing of the top manufacturer.

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- Tapestry Inc.
- VF Corp.

Genuine Leather Market Report Delivering Growth Analysis With Key Trends Of Top Companies (2020-2026)



The Global Genuine Leather Market analysis report published on Upmarketresearch.com is a detailed study of market size, share and dynamics covered in XX pages and is an illustrative sample demonstrating market trends. This is a latest report, covering the current COVID-19 impact on the market. The pandemic of Coronavirus (COVID-19) has affected every aspect of life globally. This has brought along several changes in market conditions. The rapidly changing market scenario and initial and future assessment of the impact is covered in the report. It covers the entire market with an in-depth study on revenue growth and profitability. The report also delivers on key players along with strategic standpoint pertaining to price and promotion.

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The Global Genuine Leather Market report entails a comprehensive database on future market estimation based on historical data analysis. It enables the clients with quantified data for current market perusal. It is a professional and a detailed report focusing on primary and secondary drivers, market share, leading segments and regional analysis. Listed out are key players, major collaborations, merger & acquisitions along with upcoming and trending innovation. Business policies are reviewed from the techno-commercial perspective demonstrating better results. The report contains granular information & analysis pertaining to the Global Genuine Leather Market size, share, growth, trends, segment and forecasts from 2020-2026.

With an all-round approach for data accumulation, the market scenarios comprise major players, cost and pricing operating in the specific geography/ies. Statistical surveying used are SWOT analysis, PESTLE analysis, predictive analysis, and real-time analytics. Graphs are clearly used to support the data format for clear understanding of facts and figures.

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The report segments the Global Genuine Leather Market as :

Global Genuine Leather Market Size & Share, by Regions

- ❖ Asia Pacific
- ❖ North America
- ❖ Latin America
- ❖ Europe
- ❖ Middle East & Africa

Global Genuine Leather Market Size & Share, by Products

- ❖ Top-Grain
- ❖ Split Leather

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- ❖ Consumer Goods
- ❖ Furniture
- ❖ Automobile
- ❖ Other

Key Players

- ❖ Garrett Leather
- ❖ Winter Company
- ❖ Buckskin Leather Company
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(Source : The Hindu - 20/07/2020)

UP TO SET UP MSME INDUSTRIAL PARKS; MARKS DPR FOR NORTH INDIA'S LONGEST EXPRESSWAY



Uttar Pradesh government will set up industrial parks for micro, small and medium enterprises (MSME) in six of its most industrialized districts, including Varanasi and Kanpur, and has invited proposals from consultants for it.

The state government has also started work on a detailed project report (DPR) for the proposed 601km-long Ganga Expressway between Meerut and Prayagraj, officials aware of these developments told ET.

The Centre has relaxed the eligibility criteria for the MSME sector for the Rs 3 lakh-crore credit guarantee scheme that was announced in May as part of the 'Aatmnirbhar Bharat' package and changed the definition of MSME.

States have also been encouraged to promote such units in a bid to help the economy recover from the disruption caused by the lockdowns. In line with this, UP has decided to set up MSME parks in Varanasi, Agra, Kanpur, Moradabad, Gorakhpur and Azamgarh. The state has the largest number of MSM units in the country at 14%.

A July 29 document inviting consultants for the project says industrialisation in these districts has taken place in an unorganised way due to which the existing industries are facing problems.

"The objective is to develop state-of-the-art integrated industrial parks in the vicinity of existing clusters that fulfill requirement in areas of technology enhancement and physical infrastructure, provide industrial ecosystem to the existing units of the clusters, increases export, strengthen the supply chain, leverage the hidden strengths to expand inclusive development agenda and increase employment opportunities," says the document, inviting consultants for the project. ET has reviewed a copy of the document.

In 2018-19, UP clocked over Rs 1.14 lakh crore in exports, registering a growth of 28%.

The document lists problems faced by micro, small and medium units—such as the silk industry in Varanasi, the leather industry in Kanpur and Agra, metal craft in Moradabad and textile industry in Azamgarh and Gorakhpur—saying the industrial units are either scattered or have become a core part of the city, which has expanded over time and there is no common facility available due to lack of space.

Citing the example of Varanasi, the document says the city generates up to Rs 4,500 crore annually from sale of silk products, but the industry still uses traditional ways to dye cloth and faces the issue of discharging the water.

UP has also started the process of DPR for its most ambitious expressway project which will connect Meerut with Prayagraj through a six-lane, 601km-long road passing through the districts of Ghaziabad, Hapur, Bulandshahar, Amroha, Sambhal, Badaun, Shajahanpur, Hardoi, Unnao, Raibareli and Pratapgarh.

Consultants were invited on August 1 for a road safety audit at the stage of the DPR for this project, which is expected to spur industrial growth and high-speed connectivity in the state. UP already had the 302km-long Agra-Lucknow Expressway and has also started construction of the 340km-long Purvanchal Expressway, 296km-long Bundelkhand Expressway, and the 91km-long Gorakhpur Link Expressway.

(Source : Economic Times – 03/08/2020)

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**ROLE OF DYESTUFFS FOR THE DEVELOPMENT OF INDUSTRIES.
A SHORT REVIEW OF THE SYNTHETIC DYESTUFFS***

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Ghosh Professor of Applied Chemistry**

University College of Science and Technology, Calcutta

The era of the synthetic dyestuffs dates from the discovery of Mauveine in 1856 by W. H. Perkin and its commercial manufacture in 1857 by Perkin and sons at Greenford Greed, near London.

Perkin's discovery that a colouring matter could be produced by the oxidation of aniline, led to the study of the behaviour of this base towards various oxidising agents, with the result that in 1859 Verguin prepared Fuschin (Magenta) by the oxidation of crude aniline by tin chloride and manufactured it in collaboration with the firm of Renould Francis of Lyons.

In 1860 a method of preparing Magenta by oxidising aniline, with arsenic acids was introduced by Nicholson, Girard and de Laire and in the same year Girard and Laire prepared the first synthetic dyestuff "Rosaniline blue" by treating magenta with aniline.

The phenylation of Rosaniline by Hofmann led him to try effects of introducing alkyl groups instead of phenyl groups into the Rosaniline molecule and by this method he prepared Hofmann's violet in 1863.

In 1862 Nicholson converted Rosaniline blue into a sulphonic acid by treatment with sulphonic acid and the sodium salt of this sulphonic acid was soluble in water. In this way soluble Rosaniline blue (water blue, Nicholson blue) was prepared.

In 1861 Lanth prepared methyl violet by treatment of dimethyl aniline with oxidising agents. Methyl violet quickly replaced Hofmann's violet.

The first green dyestuff was aldehyde green (clupren, 1862) but it was quickly replaced by iodine green (Keissen, 1866) which was replaced by methyl green prepared by the action of methyl chloride in methyl violet (Wischin, 1873)

*First "Professor B. M. Das Memorial Lecture" delivered at the College of Leather Technology, Calcutta.

In 1861 Nicholson isolated chrysanline from Magenta melt and its nitrate was prepared under the name Phosphine. In 1866 Compries discovered the nitrobenze process for the manufacture of Magenta and this led him to prepare the first soluble induline in 1867.

During 1860-1870 also witnessed the introduction of Bismarck brown (Martins, 1863), Martins yellow (1864), Palatine orange (1869) and Magdale red (Calvel, 1868).

Establishment of Kekule's Benzene theory opened up a new era in the manufacture of synthetic dyestuffs. The first example is afforded by the synthetic production of Alizarine by Graebe and Liebermann in 1868 and its commercial production by the method of Graebe, Liebermann and Perkin in 1869. Another class of dyestuffs-the azo-compounds-appeared in 1876 in commerce. In 1875 Caro discovered chrysodine and also indicated the technical value of Griess method of preparing AZO compounds. When the AZO dyestuffs were first introduced, it was believed that only orange and yellow dyestuffs could be formed by this means. This idea was, however, dispelled by the discovery of Fast Red A by Caro in 1878. The introduction of a number of important dyestuffs e.g. Alizarine blue, Malachite green, Ponceaux etc. also were discovered in 1878. In the preparation of Ponceaux, naphthol and naphthylamine sulphonic acids were for the first time used commercially and their great value as second components in the preparation of AZO dyestuffs indicated. Sulphonic acid group plays an important part in the preparation of AZO compounds. The application of Nicholson's method of sulphonation to the members of triphenyl-methane series of dyes enabled Caro in 1887 to prepare Acid Magenta, Acid violet etc.

In 1879 Nietzki prepared the first Diazo-dyestuff "Bicbrich scarlet", in the same year Caro prepared the important nitro dyestuff, naphthol yellow S.

The year 1880 witnessed the completion of the Bayer synthesis of Indigo and in 1863 the introduction of phosgene gave rise to phosgene colours (Caro and Kerv). Crystal violet was prepared by this method followed by a number of colouring matters of this class during this period.

In 1884 Botliger discovered that Cargo red was substantive to cotton which led to the preparation of a large number of AZO-compounds from Benzidine and allied bases which now-a-days constitute the important group of substantive cotton AZO-dyestuffs.

Tartrazene was also prepared in 1884.



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The property of fuming sulphuric acid of introducing hydroxyl groups in the Alizarine and its derivatives was discovered by Bohn in 1888 and this technique was applied by R. Schmidt for the preparation of a number of valuable dyestuffs. Fischen and Hepp in 1888 introduced oxazines and Rosindulines.

Hoechst Farwerke in 1899 introduced formaldehyde to the synthesis of new members of triphenyl methane series such as new Magenta and also for the production of the Pyronine and Acridine dyestuffs.

The method of producing insoluble AZO-compounds directly on the fibre was indicated by the discovery of primuline by Green in 1887. The year 1897 marks the introduction of Indigo by Badische Co and the process has been so improved that the natural product has been ultimately practically displaced.

Halogen (particularly bromo) derivatives of indigo have been prepared and are now extensively used in dyeing.

Recently great advances have been made in the synthesis of Vat dyes (dyeing like indigo) and the first red vat dye of this class was thioindigo red, discovered by Friedlinder and placed in the market in 1906. This was followed by thio indigo scarlet in 1907. Vat dyes of anthracene and Fluorenone series have been extensively manufactured of which indanthrene is the most important. Great activity has been displayed now a days in the manufacture of sulphide dyestuff amongst which sulphur black T and the immediat blues and blacks are important. The constitution of these substances are, however, still unsolved.

The general trend of dyestuff industry to day is in the direction of the production of fast colouring matters and it seems that this object may be best attained in the field of the vat dyestuffs.

Applications of the Dyestuffs and practical classification.

Various theories have, from time to time, been brought forward having for their object of the nature of dyeing.

Among these may be mentioned :—

- (a) The mechanical theory
- (b) The chemical theory
- (c) The Solid solution theory
- (d) The absorption theory

None of these, however, satisfactorily explain the facts and the nature of dyeing must be regarded as still but little understood.

The mechanical theory supposes a purely mechanical absorption of the dyestuff by the pores of the fibres, which, on being closed by astringents, retain the colour.

The chemical theory supposes a direct combination between the dye base and the fibre, which is presumed to possess both acid and basic properties.

The solid solution theory supposes that the fibre plays towards the dye stuff the part of a solid solvent. This theory must be regarded as inadequate.

The absorption theory, proposed by V. Georgievics, states that "dyeing is a phenomenon of absorption, the dye being retained on and in the fibre by adhesion".

The classification of the dyestuffs from the practical stand point, is best considered from the point of view of their behaviour towards the various fibres.

They may be divided into six classes—

- (1) Acid dyestuffs
- (2) Basic or tannin dyestuffs
- (3) Dyesalts or substantive cotton dyes
- (4) Mordant dyes.
- (5) Vat dyes
- (6) Developed dyes.

(1) Acid dyestuffs are the sodium salts of the sulphonic acids as well as of such dyes containing phenol groups associated with nitro groups. They are substantive to wool upon which they affix themselves from a bath acidified with potassium hydrogen sulphate or dilute sulphuric acid. They do not form links with tannin and hence can be readily distinguished from basic or tannin dyes. They have little affinity for cotton and are rarely used for dyeing the fibre.

(2) Basic or tannin dyestuffs—

These are colour bases with hydrochloric acid or zinc chloride. Now a days they are mainly used for the printing of cotton, on a tannin mordant. The best method of dyeing cotton with these colouring matter is first to prepare the material with either.



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- (a) tannic acid and tartaremetic
- (b) A fatty salt of alumina

(3) Direct or substantive cotton dyes (salt colors):—The discovery of the direct cotton dyes in 1884 by Botliges caused a revolution in the cotton dyeing industry. They are for the most part AZO compounds derived from Benzadin $\left(\begin{array}{c} \text{C}_6\text{H}_4 - \text{NH}_2 \\ | \\ \text{C}_6\text{H}_4 - \text{NH}_2 \end{array} \right)$ and allied bases.

(4) Ingrain colours:—It frequently happens that substantive dyestuff employed for the dyeing of cotton fibre contains a free amino group which is capable of diazotization. When this is case, the absorbed dye may be treated directly on the fibre with nitrous acid which converts the amide group into a diazo group and then can combine with any naphthol or amine. In this way fast shade of colour can be produced.

(5) The mordant dyes consist of large number of very differently constituted dyes, all of which possess an acid character and are indebted to the presence in their molecule of hydroxyl or carboxyl groups for their property of forming lakes with mordants.

The methods by which mordant colours can be affixed to the fibres are very diverse, depending (1) upon the nature of the dyestuff and (2) upon the fibre. The most important application of the mordant dye to cotton is in the dyeing of turkey red. This colour, which has been known from earliest times, is produced on the cotton fibre by the interaction of Alizarine, alumina, lime and fatty acid.

In the dyeing of wool the mordant dyestuffs receive their most important application. The methods are roughly of two kinds:—

- (a) Dyeing previously mordanted wool
- (b) Dyeing in a single bath

The exact chemical nature of the process is not clearly understood.

(6) Vat-dyes:—To this class belong indigo, indophenol and to a certain extent the sulphur colours. The dyestuffs are insoluble in water and hence cannot be used directly for dyeing.

However, on reduction, they are converted into "Leuco" compounds which are soluble in dilute alkali, have (in this condition) a marked affinity for the fibre and further possess the property of being readily reconverted into dyestuff by the action of weak oxidising agents.

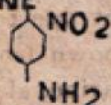
Consequently, in order to dye with these compounds it is only necessary to impregnate the fibre with reduced dye in alkaline solution and by exposing it to the action of air to cause the reoxidation of the leuco compound to the insoluble dyestuff which then remain firmly fixed in and on the fibre. The colours produced in this manner are among the fastest known and research during the last few years have revealed the existence of a large number of substances belonging to this group which under the name of indurthrene colours, the algol colours, the ciba colours, fluorence colours etc have enabled the dyer to produce almost any shade of colour by this process.

The developed dyes : As the name implies the dyes are developed on the fibre by the interaction of the constituents which produce them. They may be subdivided into two classes :—

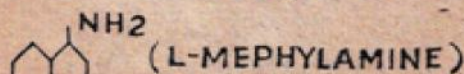
- (a) The ice colours
- (b) Aniline black

a) The ice colours are produced on the fibre by the interaction of some second component (with which the fibre has been impregnated) with a solution of a diazo salt cooled with ice. The colour varies with nature of the amine. Thus :—

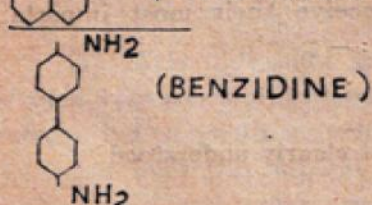
P-NITRO ANILINE



WITH B-NAPHTHOL
SCARLET

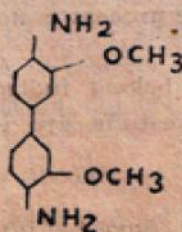


CLARET



BROWN

DIAMINIDINE



BLUE

(b) Aniline black—It is the black formed by oxidation of an aniline salt and may be formed either by oxidising a fibre impregnated with an aniline salt



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or by heating the fibre with a solution of an aniline salt containing an oxidising agent.

The older method is carried out by paddling the fibre with a solution of aniline hydrochloride containing the oxidising agent (potassium chlorate) with ammonium chloride and a salt of vanadium (oxygen carrier), the black being by the process known as ageing, which consists in subjecting the impregnated fibre to the action of air at a high temp.

The second method consists in dyeing the fibre in a bath containing aniline hydrochloride, potassium bichromate and either hydrochloric acid or sulphuric acid.

Theoretical classification of the Dyestuffs.

The large number of organic dyestuffs which have been synthetically prepared show that the dyeing property is dependent upon the structure and that the dyestuffs belong to certain well defined classes of organic compounds. This has been expressed by O. N. Witt in the following way :—

- (a) The character of a dyestuff is derived from some group contained in it which he calls "Chromophore".
- (b) The Chromogen is not a dyestuff but is converted into dyestuff by the entrance of some salt forming group which destroys the chemically inert character of the chromogen.

The groups which confer salt forming properties upon the chromogen are usually the amino group and the hydroxyl group and these are termed by Witt as "Axochrome" generally speaking, only those organic compounds which contain either acid or basic groups reduced by nascent hydrogen, passing into "leuco" compounds, which yield the dyestuff again on oxidation.

The classification, according to structure, divides the dyestuff into the following chief groups :—

444	INDIAN LEATHER TECHNOLOGISTS' ASSOCIATION		
NAME OF DYESTUFF GROUP		CHROMOPHORE	TYPICAL DYESTUFF
(1) NITROSO OR OXIME			(RESORCIN GREEN)
(2) NITRO			(NAPHTHOL YELLOWS)
(3) AZO			(p-OXYAZO BENZENE)
(4) TRIPHENYL METHANE			(MAGENTA)
(5) OXY KETONE (MORDANT)			(ALIZARINE)
(6) PYRONINES			(RHODAMINE)
(7) DIPHENYLAMINE			(PHENYLENE BLUE)
(a) INDOMINE			(INDOPHENOL BLUE)
(b) INDOPHENOL			(METHYLENE BLUE)
(c) THIAZINE			(MELDOLA'S BLUE)
(d) OXAZINE			(SUFRAMINE)
(e) SUFRAMINE			



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The relationship between colour, that is, the production of absorption bonds in the visible range of spectrum and the presence of conjugated linkages within the molecule has been clearly established.

Though philosophically incorrect it is necessary from the point of view of colour chemically to distinguish between visible and invisible colour. Researches of Hartley, Bay and others have shown that many apparently colourless substances which contain the various aromatic nuclei, such as, for example, the hydrocarbon benzene produce definite absorption bonds, in the ultra-violet region of the spectrum. Consequently these colourless substances may reasonably be regarded as possessing colour which cannot be detected by the eye.

It has been shown that it is possible so far to retard the intramolecular vibrations within the aromatic nuclei which produce ultra violet absorption so as to throw the absorption into the visible range of the spectrum and hence lead to visible colour. This effect is always produced when the "Quinone linkage" appears in a aromatic compound and consequently every substances which contain this linkage is visibly coloured. In fact, it is probable that the cause of visible colour in all organic dyestuffs of aromatic series can be ascribed to the presence in them of one or more quinone linkages and since the only dyestuffs of importance belong to the aromatic series, it may be stated that form of conjugated double linkages which is known as quinone linkage is the chromophore in the wide sense of the term. But it is still open to question whether the AZO-colours fall within this generalization.

Dyes in the development of Medical Research

Synthetic organic dyestuffs have played a pre-eminent part in the investigation of Zymotic diseases. Bacteria and protozoa were recognised as causative factors in disease by the aid of such dyes as will stain the micro-organisms, in order to allow of their differentiation in the course of microscopical examination. This staining of bacteria by means of aniline dyes, first applied by C. Weigert subsequently improved by Robert Koch led to the staining of bacteriological preparations. The method was also later applied in the case of protozoa.

Of the large number of synthetic dyes, only few are included in pharmacopia and are very important. These were mainly dyes with strong antiseptic properties, which proved to be of great service in the treatment of lesions during world war II. Now a days, derivatives of acridine are the main dyes of antiseptic and therapeutic value in the treatment of infections diseases and a certain practical value must be ascribed to methylene blue. In medicine, dyes are extensively used in the histological technique, also for diagnostic purposes in cases

where, in the human body, the behaviour and excretion of a dye previously introduced, will supply valuable information regarding the function of the secretory organ.

While the dyes have thus acquired importance with regard to knowledge of pathogenic organisms and diseases and of their treatment, they have also provided an orientation of exceptional value with regard to synthesis of remedies. EH Rlich, in his investigations of the action of organic compound in protozoal diseases, paid attention to organic dyes. He found that some dye-stuffs definitely destroyed trypanosome infections in the animal body. Although none of the effective dye-stuffs proved to be of practical value, nevertheless, the first important foundation of chemotherapy were initiated, which led EH Rlich finally to arsenic compounds and salvarsan.

Among the dyes tested in medical and chemical research methylene blue, proved to be a fertile source of further discovery. Robert Koch had used this stain for the demonstration of tubercle bacilli. As early as 1891, E H: Rlich, in the course of his research with dyes, established the fact methylene blue is very suitable for staining the plasmodia of malaria. This led him to believe that there is a close affinity between the parasite and stain and this induced him together with Guttman, to try out the dye methylene blue on malaria patients. It was actually found possible to influence, favourably and even to cure, cases of certain malaria with methylene blue. Since then methylene blue has been applied in many cases of malaria but its effect has been hotly contested in scientific literature. In malaria therapy, methylene blue however could not be ranked with quinine.

The idea originated by E. H. Rlich, to utilise the specific affinity of dyes to particular tissues and to particular micro organisms in the practice of chemotherapy and to develop this idea further by discovering more effective substances by means of introductions of new groups into the molecule of the dye has acted as a fertile and stimulating hypothesis.

Now a days purely dyeing properties of the dye have become of secondly importance. In modern, chemotherapeutical research, efforts are made to utilise the chemical structure of the dyes, to discover new and effective compounds by the aid of hypothesis and practical experience, followed by systematic chemical research work. The experiences and successes of the chemistry of dyes will therefore be of great use in chemico-medical research.

The discovery (E. H. Rlich, Quastel and Hiro) of substances capable of dehydration by means of reactions in which dye stuffs are reduced is of consider-



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able biological interest because such substances may be built up into oxidation reduction systems and thus, directly or following by activation by a cell ferment, can set up definite oxidation reduction potential in the region of the cell. The development of a definite reduction oxidation potential (Redox Potential) in a bacterial culture is of great importance for the viability and growth of the culture.

Finally, it must be pointed out that the reduction or oxidation of dye stuffs by bacteria in addition to its significance as a test for bacterial metabolism and for the function of bacterial ferments deserves attention from the stand point of chemical synthesis. By employing suitable dyestuff the utilization of bacterial ferments in the absence of oxygen appears to be of value for preparing substances of biological importance whose production by chemical means is not yet possible. Among these must be included the primary oxidation products of sugar, which in connection with the discovery of ascorbic acid (Szevi-GyOr Gyl, Till Mars, Michell, Rebchsteis, Harst, Haworwth) is worthy of mention.

INDIA'S ECONOMY IS AILING FROM MORE THAN COVID-19



According to the International Monetary Fund, India will be the large economy worst hit by the **Covid-19** pandemic. The Fund now says that Indian GDP in the ongoing financial year, which began in March 2020, will contract by 4.5%. Just a few weeks ago, it had been predicting 2% growth for the year.

The IMF's projection is by and large in line with estimates from investment banks and other international organizations. Indian officials have been reticent about their own estimates. This is not surprising: India's economy has not contracted since 1979. For the government, this is uncharted territory.

A slowdown of this magnitude will have enormous human consequences. By some estimates, the loss of three months' income would leave nearly half of the country's population mired in poverty, reversing all the gains made since the economy was liberalized in the early 1990s.

Worse, the government's finances are strained. Tax revenues are set to crash and India's hitherto relatively stable debt-to-GDP ratio may spike up toward 90%. Controlling the spread of the pandemic will bleed state resources, leaving little for the welfare measures that will be essential in coming months.

Such economic pressures help explain why the government lifted India's stringent **lockdown** even though the spread of Covid-19 clearly hadn't been controlled. India now has the world's fourth-largest number of Covid-19 cases. While the country may be partly protected from a tide of deaths by its favorable age distribution, there is every reason to suppose that more lockdowns to protect its inadequate health infrastructure will be required. If nothing else, this complicates predictions for the medium term and makes the task of reviving the economy that much harder.

But don't let anyone tell you the pandemic is the main reason India's growth has gone off a cliff. The economy had already been weakened by years of mismanagement before this crisis struck.

Figures released by national statisticians at the end of May explain what went wrong. Even before the pandemic properly hit India, in the financial year ending in March, GDP only grew at 4.2%. The sequence of quarterly GDP growth numbers leading up to that point tells a clear story: 7% growth shrunk to 6.2%, then to 5.6%, 5.7%, 4.4% and finally 3.1% in the quarter that ended with the lockdown.

What was behind this slowdown? The answer is a lack of investment. Investment shrank by almost 3% over the year. Until then, India hadn't seen investment shrink for almost two decades, according to World Bank data. (It grew about 10% in 2018-19.) And this shrinkage began well before the pandemic — in April 2019. In India, the virus struck an economy with pre-existing conditions. The investment crisis and India's large debt pile have the same cause: a government that thinks its own spending is what will fuel economic growth. According to official statistics, government spending increased by 12% last year, more than twice the growth rate of private consumption. Government spending was similarly higher than the other components of GDP in the previous year as well.

As a consequence, the government last year — again, before the pandemic properly hit — had a fiscal deficit 4.6% higher than the one it inherited six years ago. This is pretty embarrassing, given the government has long claimed that its stewardship had provided macroeconomic stability following the turbulent last years of its predecessor.

This should all be enough to sober any government. Yet, policymakers in New Delhi seem to be oddly sanguine. On Tuesday, they posted a cheerful update praising their "prompt policy measures" and touting an "increase in economic activity." It's true that May looked like a better month than April, when the lockdown was at its height. But pretty much every indicator for May 2020 is in the red when compared to May 2019. And most analysts believe any recovery will now take two years or so, rather than a couple of months.

The government's confidence is inexplicable. It has not done enough to reinvigorate the economy. Its big weapon — spending — has failed and there is little left in its armory. Recovery needs reform. India has postponed competitiveness-enhancing measures long enough. In a crisis of this magnitude, there are no excuses left.

(Source : Economic Times – 26/06/2020)

THE ROAD AHEAD FOR THE GOVERNMENT'S FISCAL MANAGEMENT WILL BE FULL OF MANY NEW CHALLENGES



Provisional actuals of the Union government's revenue and expenditure in the first two months of the current financial year, released recently, lend greater clarity to the nature of the stress that government finances are likely to face in the coming months during 2020-2021.

Challenges will, of course, arise because of a significant widening of the fiscal deficit, compared to the Budget estimate of 3.5 per cent of gross domestic product made in February.

But the nature of the fiscal challenge can be better understood by studying the granular details in those provisional numbers.

They shed more light on the actual level of increase in borrowing, how the government has tried so far to finance the growing deficit, the areas of revenue flows that have been adversely affected and the specific areas of government expenditure which have been subjected to a squeeze. Five trends are worth noting.

One, in April-May 2020, the government's fiscal deficit or its total borrowing was estimated at Rs 4.66 trillion, which was almost 59 per cent of the annual Budget estimate of Rs 7.96 trillion.

Compared with the borrowing in the first two months of 2019-2020, the current year has seen a 27 per cent increase in borrowing.

There is, however, another way of looking at the slippage. Already, the government has raised its annual borrowing target to Rs 12 trillion from the Budget estimate of Rs 7.96 trillion. So, as a proportion of the enhanced borrowing level, Rs 4.66 trillion of borrowing in the first two months of the year is just about 39 per cent.

This is not a hugely comforting number, but better than the 59 per cent figure calculated in comparison with the Budget estimate, which for all practical purposes has become irrelevant.

In the first two months of 2019-2020, the government's total borrowing or fiscal deficit was 52 per cent of the figure mentioned in the Budget estimate.

But compared with last year's actual deficit figure of Rs 9.35 trillion, the share of the deficit in the first two months came to 48 per cent.

In other words, the current year's borrowing so far does not show any significant deviation, when compared with the enhanced borrowing level already decided by the government. Indeed, it may provide some cushion in the coming months.

Two, a quick look at the sources of financing the deficit in the first two months of 2020-2021 shows a sharp increase in the government's reliance on external financing.

During the entire period of 2019-2020, external financing accounted for about Rs 11,600 crore in the total borrowing of Rs 9.36 trillion. But external financing in the first two months of 2020-2021 has already risen to over Rs 29,000 crore.

The increase in external financing is in addition to fresh borrowing of Rs 53,000 crore from the National Small Savings Fund, which was not budgeted earlier.

Three, the government's receipts during April-May 2020 have been hit on account of a decline in both tax and non-tax revenues.

Gross tax revenues in this period were estimated at Rs 1.26 trillion, a decline of 41 per cent over what was collected in the same period of 2019.

This was an obvious impact of COVID-19 and the lockdown imposed in this period, which significantly slowed economic activities across sectors.

Non-tax revenues in the April-May period have seen a bigger drop of 62 per cent — down to Rs 10,817 crore this year, compared to Rs 28,423 crore in 2019.

Similarly, non-debt capital receipts, which largely include the government's revenues from disinvestment, have fallen by 73 per cent to Rs 831 crore.

With over Rs 2.1 trillion of revenues depending on divestment, a 73 per cent drop in non-debt capital receipts is a cause for concern.

Four, the government's overall expenditure in the first two months of 2020-2021 at Rs 5.12 trillion represented a marginal decline of 0.22 per cent over the same period of 2019-2020.

Interestingly, however, the government's capital expenditure grew in this period by 16 per cent to Rs 55,206 crore.

Its revenue expenditure fell by 1.85 per cent to Rs 4.57 trillion, but the break-down of the decline reveals the government's changed focus in view of the pandemic.

For instance, its spending on the departments of agriculture, cooperation and farmers' welfare (largely for the PM Kisan scheme) shot up by 89 per cent to Rs 30,580 crore in April-May 2020 over the same period of 2019.

Similar increases were noticed in rural development (largely for the national rural employment guarantee scheme) by 131 per cent to Rs 59,612 crore, animal husbandry, dairying and fisheries (up 446 per cent to Rs 295 crore), health and family welfare (up 39 per cent to Rs 16,878 crore and labour (up 345 per cent to Rs 1,501 crore).

There is also a huge increase in the expenditure on road and highways-from Rs 328 crore last year to Rs 12,636 crore this year.

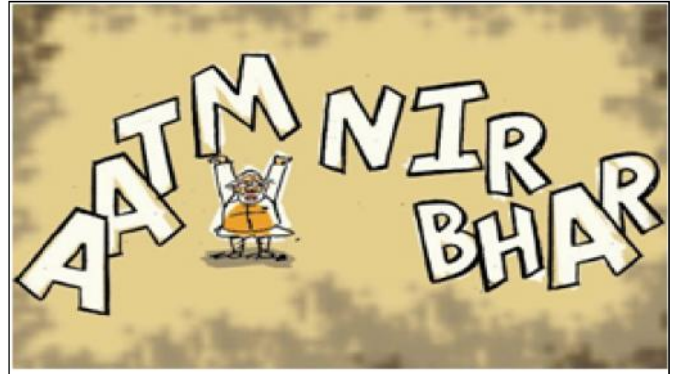
These increases also mean other departments, not connected with the welfare schemes needed during the COVID-19 pandemic, had to suffer a bigger decline in their spending.

Finally, the government's expenditure on major subsidies on food, fertilizer and petroleum products declined by 41 per cent to Rs 67,469 crore in the April-May months of 2020-2021. This was largely because of lower oil prices and the gains may well be temporary.

The road ahead for the government's fiscal management will be full of many new challenges. The trends in the first two months show that the government needs to be on its guard.

(Source : Business Standard – 20/07/2020)

MODI SHOULD FOCUS ON WEALTH CREATION, NOT WEALTH DISTRIBUTION



'When you start distributing wealth, you end up distributing poverty.'

Where is India's economy heading ?

After more than 100 days of lockdown, have the green shoots of growth finally started appearing, like what the Government of India claims ?

M R Venkatesh, the well known chartered accountant, lawyer and political commentator, along with other professionals came together under the banner *Artha Yagna* and wrote a letter recently to Prime Minister Narendra Damodardas Modi with suggestions on how to revive the economy.

"The government must focus on a 10%-12% growth in agriculture. We feel strongly that the revival of the economy post-Covid will be in the rural areas and in the agri sector... We feel the engines of growth will not be the cities, but will be several small towns and probably villages," Venkatesh, *below*, tells **Shobha Warrier/Rediff.com** in the first part of the interview.

Before the government announced the Rs 20 lakh stimulus package to revive the economy, some well-known economists wrote to the government with suggestions on how to revive the economy. It is another matter that they were not given much attention by the government.

Why did you and other professionals decide to write to the prime minister on the same lines ?

We were not comfortable with two things. One, we felt the government was not getting proper feedback in terms of what it was doing.

And two, this is not limited to the post-Covid lockdown. Even before Covid, in our view, the government was quite oblivious of the kind of development that was happening.

So, some of us were quite keen on providing inputs. Yes, it is for the government to decide whether they are workable, feasible or appropriate. We have put in some alternate thoughts which we felt was necessary.

You said the government was not getting proper feedback. But the letter written by the economists was genuine feedback on the economy. So, how can you say the government was not getting proper feedback ?

Yes, there are many people who are giving various suggestions to the government. Feedback or suggestion is not the issue. The challenge is action.

Moreover, we felt those suggestions were predominantly not concentrating on wealth generation, but only on wealth distribution. We felt that a genuine change can happen only when you start generating wealth. When you start distributing wealth, you end up distributing poverty.

I don't know whether we can call ourselves Right-leaning economists, but we definitely are not Left-leaning economists. We thought it was time we reached out to the highest in the land with our views.

It was Mr Giridhar Mamidi, an economic, political and strategic affairs analyst, who welded us all together. We brainstormed for many days to prepare the document.

I would say what we have prepared is predominantly an alternate thought on reviving the economy and nation building. Now, it is for the government to decide what they want to do and how they want to do.

It is an honest feedback from a set of people who do not expect any benefit out of this. We are neutral to the outcome of the document.

You spoke about wealth creation. Don't you feel in India even today wealth creators are looked at as villains ?

Absolutely. there is a theory in this country for the last 70 years that those who are successful are villains. Wealth creators are abhorred, thanks to Nehruvian socialism.

The reason is because the government thinks laws are created not to make anyone prosperous but only to distribute poverty.

Consequently, it is assumed even to this day that only when you break a law that you can be prosperous. So, anybody who is prosperous is a law-breaker. This is very clearly etched in the collective wisdom of *babudom*. We wanted to attack precisely this particular thought.

Last time we spoke, you had said the Rs 20 lakh stimulus package was like asking a patient in the ICU to start exercising.

More than two months have passed since the stimulus was announced, is the patient still in ICU, or is he dead ?

He is alternating between ICU and ICCU!

But finance ministry officials are saying they are able to see some green shoots of recovery. That's the phraseology used for the last 10 years. It is very strange that the green shoots are visible to finmin officials and not to us!

I guess it must be the bamboo shoots; as bamboo takes such a long time to grow. It is definitely not the green shoots of the economy. So, there is going to be a long haul.

That's why one of the important things we have suggested is that for the next three years, the government must focus on a 10%-12% growth in agriculture.

We feel strongly that the revival of the Indian economy post-Covid will be in the rural areas and in the agri sector. We also feel this is going to be the biggest and surest route to wealth creation.

We feel the engines of growth will not be the cities like Bangalore, Hyderabad or Chennai, but will be several small towns and probably villages.

We have also suggested the need to focus on the health sector. The government should focus on building hospitals.

You mean, not public-private partnerships, but the government should start spending on various projects ? We believe that the government must spend.

In fact, one of our first suggestions was to suspend FRBM (*the Fiscal Responsibility and Budget Management*) Act.

The government should not be worrying about fiscal deficit now. Of course, they should worry about revenue deficit. They should start spending large amounts of money on infrastructure and the pipeline should be frontloaded.

They should concentrate on sectors like healthcare. This is the right time to make India the healthcare capital of the world.

For the last five years, ever since the economy started slowing down, we have been hearing experts talking about the need for the government to spend on infrastructure for the lending cycle to start for an economic revival. But nothing is happening...

Nothing is happening is a very harsh term to use. I would say, things are not happening at the pace at which we would all be happy.

Yes, you are right, the pace is very slow, and we are moving at a glacial pace. That is why we have suggested two important things. One is to appoint an expert committee to suggest appropriate income recognition and asset classification norm which is the NPA norm. They should look at the NPA 90-day law thoroughly.

Second is to appoint an expert group to look into the role of the RBI. It means they have to look into the entire banking system. Let us be very clear that lending, including infrastructure lending, is not happening. We are clear that there are certain constraints put on us by our own policy-makers and we want this to be addressed.

(Source : Rediffmail.com/Business - 20/07/2020)

WHY DEMAND FOR CASH COULD RISE DESPITE DIGITIZATION ?



For the first time, the value of card and mobile payments of Rs 10.57 trillion was more than ATM withdrawals of Rs 9.12 trillion in Q4 of fiscal 2019-20.

In the months of lockdown, the gap may have widened further, but cash could be back in vogue when the situation normalizes.

Demand for currency rises in a low interest rate environment and falls when the rates are high, a Reserve Bank of India (RBI) staff study has found.

The country, therefore, will have to live with higher currency in circulation in the coming days despite higher penetration of digital transactions, it has pointed out.

According to the latest RBI data, for the first time, the value of card and mobile payments of Rs 10.57 trillion was more than ATM withdrawals of Rs 9.12 trillion in the fourth quarter of fiscal 2019-20.

In the months of lockdown, the gap may have widened further as people did not want to touch public ATM machines for fear of contracting virus, say experts, but cash could be back in vogue when the situation normalizes.

The RBI paper, 'Modelling and Forecasting Currency Demand in India: A Heterodox Approach', has been authored by former executive director and member of the monetary policy committee (MPC) Janak Raj, Indranil Bhattacharyya, Samir Ranjan Behera, Joice John, and Bhimappa Arjun Talwar.

The authors argue that digital transactions should be widely used to counter the 'dash for cash' as Governor Shaktikanta Das recently put it, but the tone of the paper suggests that the outcome is unlikely to be realised in the immediate future. To start with, the authors argue that income continues to be a key determinant of currency demand.

"Therefore, currency demand in the foreseeable future is expected to grow broadly at the same rate as nominal income, which serves as an important guide for policy making."

Analysts are predicting that the nominal GDP growth rate could be negative in the present fiscal year, but that doesn't mean that the currency in circulation would fall in tandem.

Despite fall in economic growth, the CIC in the first four months of calendar 2020 was higher than the entire year of

2019, *Business Standard* had reported earlier. The CIC between January and May 1 was Rs 2.66 trillion. In comparison, it increased by Rs 2.40 trillion in the entire 2019 (January to December).

According to the RBI's latest Weekly Statistical Supplement (WSS), currency in circulation increased by Rs 2.31 trillion in 2020-21 (up to July 10) which is more than threefold increase from that of last year.

At the same time, payments through Unified Payments Interface (UPI) reached an all-time high of 1.34 billion transactions in June, growing 9 per cent from May's 1.23 billion.

In April, transactions had fallen to 999 million due to strict lockdown measures. The value was up 18 per cent in June to Rs 2.62 trillion, from Rs 2.18 trillion in May. "It needs to be recognised that the Covid situation is unprecedented (a tail event), which cannot be predicted by any model.

"Moreover, the estimates in the paper are long period average impact, which cannot be juxtaposed on a tail event like Covid; hence, it may be misleading to derive conclusions from the paper," said a senior economist considered to be an expert in RBI matters. The study also implies that it takes many quarters to reflect the full effect of a current GDP slowdown on currency demand. If slowdown persists for long, the impact will slowly reflect in currency demand.

"Thus, a sharp decline in currency to the magnitude of the GDP slowdown is not imminent in the current context," said the expert. But the growth of currency could be moderated by sustained usage of digital transactions, especially credit and debit cards.

Therefore, the thrust on these should continue, the paper argued. Currency demand is higher in the festive season, especially during Diwali, while lower during the monsoons. The demand increases by about 1 per cent during general elections spanning about five weeks.

The impact depends on the nature of elections - size of states, or Lok Sabha elections, it said. While policy-induced measures such as demonetization had lowered the trajectory of currency significantly, increasing sophistication of financial markets is also bringing forward several alternative investment avenues for economic agents instead of relying solely on bank deposits.

"Therefore, the opportunity cost of currency holding has shifted from bank deposits to new instruments," the paper said.

(Source : *Financial Express* – 10/07/2020)

EARLY CONTAINMENT OF THE PANDEMIC COULD IMPART AN "UPSIDE" TO THE ECONOMIC GROWTH OUTLOOK : RBI GOVERNOR S. K. DAS



The Reserve Bank of India on Thursday sounded a note of caution saying that protracted spread of the COVID-19 pandemic poses "downside risk" to the economy which is expected to remain in the negative zone in the current fiscal.

RBI Governor Shaktikanta Das, while unveiling the bi-monthly monetary policy, also said that early containment of the pandemic could impart an "upside" to the economic growth outlook.

Regarding growth outlook, the Monetary Policy Committee (MPC) noted that the recovery of the rural economy is expected to be robust, buoyed by the progress in kharif sowing.

Manufacturing firms expect domestic demand to recover gradually from the second quarter and to sustain through the first quarter of the fiscal 2021-22.

On the other hand, consumer confidence turned more pessimistic in July relative to the preceding round of the Reserve Bank's survey, Das said.

External demand is expected to remain anemic under the weight of the global recession and contraction in global trade. "... real GDP growth in the first half of the year is estimated to remain in the contraction zone.

"For the year 2020-21 as a whole, real GDP growth is also estimated to be negative," Das said. An early containment of

the COVID-19 pandemic may impart an upside to the outlook. A more protracted spread of the pandemic, deviations from the forecast of a normal monsoon and global financial market volatility are the key downside risks, he noted.

The governor also that said in the the MPC's assessment, global economic activity has remained fragile and in retrenchment in the first half of 2020.

"A renewed surge in COVID-19 infections in major economies in July has subdued some early signs of revival that had appeared in May and June," he said.

(Source: PTI - 06/08/2020)

RBI ATTEMPTS A DELICATE BALANCING ACT TO EASE CORONAVIRUS RELATED STRESS ON ECONOMY



The RBI had previously announced a regulatory package to help borrowers mitigate the burden of debt servicing brought about by disruptions on account of the COVID 19 pandemic, maintain continuity of viable businesses and to stabilise financial markets. These measures, particularly the moratorium on loan repayment and the standstill on asset classification, were intended to deal with the immediate crisis. However, as the end of the moratorium period approaches, it was apparent that more permanent measures would be required to address the financial conditions caused by the pandemic. These permanent measures have been announced by the RBI by way of the "Resolution Framework for Covid Related Stress".

A two-year moratorium, sectoral approach in resolution benchmarks, continuation of existing management, focus on the real sector and exclusion of financial service providers are key highlights of this framework. The special framework makes a number of variations to the general resolution framework prescribed under the June 7, 2019 directions of the RBI to

facilitate resolution of assets that are stressed only on account of the pandemic. The framework is a balance between the imperative of addressing the immediate distress and longer-term safeguards. While the framework deals with personal loans and corporate exposures, in this article we look at the latter.

In its most significant feature, the framework enables lenders to implement a resolution plan without a change in ownership while classifying such exposures as 'standard assets', subject to specified conditions. In the absence of this dispensation, any restructuring would result in a standard asset being downgraded to a 'non-performing asset' (NPA) (with prescribed provisions to be maintained) until the restructured asset demonstrates 'satisfactory performance', or there is a change of control of the borrower. Such change of control could be an unfair penalty for promoters of borrowers already suffering from the effect of the pandemic. Further, implementing a change of control takes more time as lenders typically need to run a process to identify new owners. In this background, the new framework is a relief to both borrowers and lenders.

The framework provides flexibility in the manner of restructuring, including rescheduling of payments, conversion of any interest accrued, or to be accrued, into another credit facility, or granting of moratorium, subject to a maximum of two years. To prevent misuse, the framework takes a calibrated approach.

- ❖ First, the relief is limited only to COVID affected borrowers – only if loans of the borrower were 'standard' as on March 1, 2020 (and not in default for more than 30 days on that date), is it eligible under the framework. This condition is narrower than the asset classification standstill that the RBI had previously allowed (which applied even if the asset was SMA2 on February 29, 2020), and shows the RBI's intent to provide relief to otherwise viable businesses distressed solely on account of the pandemic. This will prevent moral hazard issues.
- ❖ Second, the framework incentivises a time-bound approach by providing a limited window during which the resolution process can be invoked. The process is required to be invoked by December 31, 2020 and must be implemented within 90 days of invocation.
- ❖ Third, the resolution process can be considered to be invoked only if the borrower agrees to proceed with a resolution under this framework. This will prevent

recalcitrant borrowers from subsequently obstructing the implementation of agreed resolution plans.

- ❖ Fourth, the RBI has constituted an expert committee chaired by Mr. K.V. Kamath, an industry veteran, to recommend the financial parameters, with sector-specific benchmark ranges, that may be factored into the assumptions that go into each resolution plan. This will help demarcate the necessary boundary conditions to avail of the restructuring and permit a nuanced approach for providing relief to sectors that are affected by the pandemic. The expert committee will also vet the resolution plans for larger corporate exposures to be implemented under this framework, including verification of compliance with all processes, while retaining the commercial judgment of lenders.

Finally, the RBI continues to incentivize collective action by lenders, by requiring additional provisioning for lenders who do not sign the inter creditor agreement. This requirement is necessary to maintain the sanctity of any collective process and should be made applicable for resolution processes outside this special window also.

Further, the RBI has recognized need for the participation by lenders that are not regulated by the RBI in the collective resolution process and it is hoped that other sectoral regulators also provide an enabling framework for resolution by entities that they regulate. We believe that the new Resolution Framework for Covid Related Stress will give the necessary relief required to rebuild the real sector in view of the COVID distress and is welcome for its calibrated and thoughtful approach.

(Source: Financial Express – 06/08/2020)

Read and Let Read :-

-: JILTA :-

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ILTA PUBLICATION

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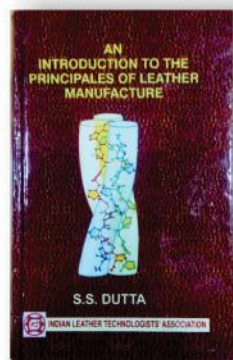
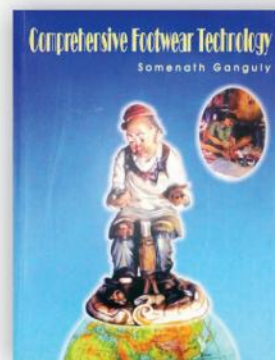
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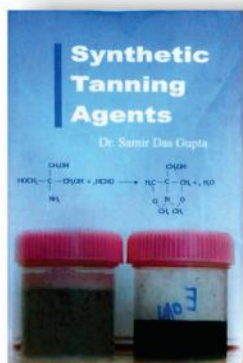
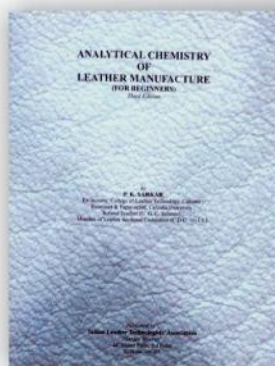
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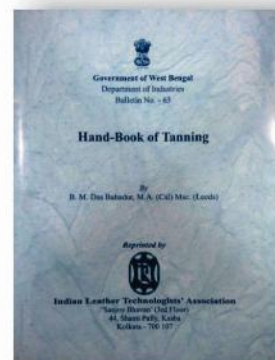
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History and Activities of Indian Leather Technologists' Association

The Indian Leather Technologists' Association (ILTA) was founded by Late Prof. B. M. Das, the originator of Das-Stiasnay theory and father of Indian Leather Science on 14th August 1950.

The primary objectives of the oldest Leather Technologists' Association which celebrated its Diamond Jubilee year in the 2010, are:

- ❖ To bring all concerned with the broad spectrum of the leather industry under one umbrella.
- ❖ To organize seminar, symposium, workshop in order to create information, knowledge and latest development for the benefit of all concerned. To offer a common platform for all to interact with each other in order to understand each other's problems and prospects.
- ❖ To publish monthly journal as a supplement to those above objectives. The monthly journal of ILTA is known as journal of Indian Leather Technologists' Association and is the most widely circulated technical journal concerning leather technology.
- ❖ To publish text books for the benefit of students at various levels of study, for the researchers and industry.
- ❖ To have interface between urban and rural sector.
- ❖ To assist Planning Commission, various Government Institutions, Ministry and autonomous bodies to formulate appropriate policies acceptable and adoptable to the industry.
- ❖ To organize practical training and to provide skilled manpower and to motivate good students for study.
- ❖ To conduct activities related to the growth of the export of leather and leather goods from India.
- ❖ As the part of many social activities ILTA has donated Rs. 1 lac to Consul General of Nepal towards relief of earthquake effected of Nepal on 15th Sept, 2015.

INTERNATIONAL & NATIONAL SEMINAR

- ❖ ILTA is the Member Society of International Union of Leather Technologists & Chemists Societies (IULTCS), a 115 years old organization and for the first time the IULTCS Congress was organized in January 1999 outside the developed countries in India jointly by ILTA and CLRI.
- ❖ 2017 IULTCS Congress is scheduled to be held in India again.
- ❖ 8th Asian International Conference on Leather Science & Technology (AICLST) was organized by ILTA in 2010 during its Diamond Jubilee Celebration year.

SEMINAR & SYMPOSIUM

ILTA organizes Seminar & Symposia on regular basis to share information, knowledge & latest development and interactions for the benefit of all concerned. Few are as under:

- ❖ Prof. B. M. Das Memorial Lecture every year during the Foundation Day Celebrations on 14th August every year.
- ❖ Sanjoy Sen Memorial Lecture on 14th January every year, the birthday of our late President for several decades.
- ❖ Prof. Moni Banerjee Memorial Lecture on 15th March every year, the birthday of this iconic personality.
- ❖ Seminar on the occasion of India International Leather Fair (IILF) at Chennai in February every year.

It has also organized:

- ❖ Prof. Y. Nayudumma Memorial Lecture.
- ❖ Series of Lectures during "Programme on implementing Emerging & Sustainable Technologies (PriEST)".
- ❖ Seminars in occasion of India International Leather Fair, 2014 and 2015 at Chennai etc. Many reputed scientists, industrialists and educationists have delivered these prestigious lectures. Foreign dignitaries during their visits to India have addressed the members of ILTA at various times.

PUBLICATION

ILTA has published the following books:

- ❖ An Introduction to the Principles of Physical Testing of Leather by Prof. S. S. Dutta
- ❖ Practical Aspects of Manufacture of Upper Leather by J. M. Dey
- ❖ An Introduction to the Principles of Leather Manufacture by Prof. S. S. Dutta
- ❖ Analytical Chemistry of Leather Manufacture by P. K. Sarkar
- ❖ Comprehensive Footwear Technology by Mr. Somnath Ganguly
- ❖ Treatise on Fatliquors and Fatliquoring of Leather by Dr. Samir Dasgupta
- ❖ Synthetic Tanning Agents by Dr. Samir Dasgupta
- ❖ Hand Book of Tanning by Prof. B. M. Das

ILTA has a good Library & Archive enriched with a few important Books, Periodicals, Journals etc.

AWARDS OF EXCELLENCE

- ❖ ILTA awards Prof. B. M. Das Memorial, Sanjoy Sen Memorial, J. M. Dey Memorial and Moni Banerjee Memorial Medals to the top rankers at the University / Technical Institute graduate and post graduate levels to encourage the brilliants to evolve with the Industry.
- ❖ J. Sinha Roy Memorial Award for the author of the best contribution for the entire year published in the monthly journal of the Indian Leather Technologists' Association (JILTA).

LEXPOs

To promote and provide marketing facilities, to keep pace with the latest design and technology, to have better interaction with the domestic buyers, ILTA has been organizing LEXPO fairs at Kolkata from 1977, Siliguri from 1992 and Durgapur from 2010. To help the tiny, cottage and small-scale sectors industries in marketing, LEXPO fairs give the exposure for their products. Apart from Kolkata, Siliguri & Durgapur, ILTA has organized LEXPO at Bhubaneswar, Gangtok, Guwahati, Jamshedpur and Ranchi.

MEMBERS

The Association's present (as on 31.03.2018) strength of members is more than 600 from all over India and abroad. Primarily the members are leather technologists passed out from Govt. College of Engineering & Leather Technology, Anna University, Chennai, Harcourt Butler Technological Institute, Kanpur, B. R. Ambedkar National Institute of Technology, Jalandhar and Scientists from Central Leather Research Institute.

ESTABLISHMENTS

In order to strengthen its activities, ILTA have constructed its own six storied building at 44, Shanti Pally, Kasba, Kolkata - 700 107 and have named it "Sanjoy Bhavan".

This Association is managed by an Executive Committee duly elected by the members of the Association. It is absolutely a voluntary organization working for the betterment of the Leather Industry. None of the Executive Committee members gets any remuneration for the services rendered but they get the satisfaction of being a part of this esteemed organization.



ILTA

Since 1950

Indian Leather Technologists' Association

[A Member Society of International Union of Leather Technologists' and Chemists Societies]

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