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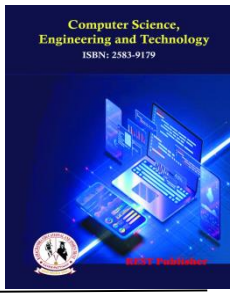

Future Research Opportunities Agricultural Sector Using Weighted sum method (WSM)

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Abstract. *Agricultural sector Introduction: Crop and animal production, agricultural machinery, fertilizers, fertilizers, and agriculture agricultural machinery to support other types of products including manufacturing a branch of economics. Learn more: rural areas recreation and tourism to demonstrate ability as an innovative approach clustering. World's staple food staples as wheat and india is the second largest producer of rice big india is now the world the second largest fruit, based on agriculture textile raw materials, roots, and tuber crops, pulses varieties, farmed fish, eggs, coconut, sugarcane and more produces vegetables. Research significance: Primarily agricultural sectors growing crops and animals raising, and a farm, on the farm or theirs from natural habitats fish and other animals engaged in harvesting. The agriculture sector today has many challenges faced, i.e. Climate the change is dramatic in statistics for changes and feeding enormous increase in demands. Agriculture 4.0, industry 4.0 was created in light of name, cross-industry technologies, and connecting applications by addressing these challenges aims to crop to improve products with the ultimate goal of agriculture 4.0 information and communication using technologies. For measuring related data it defines methods, analyzing measurements near real-time, if necessary. Define actions accordingly using, for example, the weather and soil conditions data through special sensors collect and then each individual the right amount of water for the plant, pesticides, and fertilizers machine learning to determine can be analyzed by methods. Methodology: the weighted sum method is a multi-criteria decision-making systematic, with many alternatives there are many more criteria basically what is the best alternative we have to decide. Weighted average or weighted a group of sums is a group a machine learning approach, it makes predictions from multiple models integrates, where each a contribution of the model is its capacity or in proportion to skill is weighed. Weighted with the mean ensemble voting ensemble related to this method advantages of using it ease of use, esp working with convergent problems including when disadvantages an all in non-convex solution space unable to find solutions being and goals a straightforward way to assign weights there is no way. Alternative: 2015, 2018, 2020, 2021. Evaluation preference: agriculture marketing, milk-fed financial institute and social forestry, dairy farming, soil and water conservation, animal husbandry. Results: the result is seen that agriculture marketing got the first rank whereas is dairy farming is having the lowest rank. Conclusion: it can be seen that agricultural marketing gets the top rank, whereas dairy farming has the lowest rank.*

Keywords: *agriculture marketing, agricultural sector, weighted sum method.*

1. INTRODUCTION

Entrepreneurship research to contextualize, entrepreneurs on the role of the department in research also calling for more attention, existing in agricultural entrepreneurship systematic literature on research we conduct the review. Recent and within the agricultural sector rapid vertical integration and reasoning is for scholar's entrepreneurship theory and a dynamic to investigate practice provides system. Agriculture three main situation of the sector dimensions we identify [1]. Current integration in India a watershed for the economy means, it is for the agriculture sector can have profound implications. At the same time, the world economy advances, in article and multilateral trade organization, world important for publication may have consequences for world trade in agriculture [2]. Secular, democratic public the role of religion within disciplines a renewed focus on commentary on sexism has arrived of the secular the focus of the latter project is, is an amalgamation of lyceum may hold different beliefs, the same belief is different can practice or perspective by others who may be non-religious into a shared public arena way of being. Sunni Islam's increasingly public role as a secular state, religion, politics, and public new configurations of life a staple of study the base is turkey [3]. In Indonesia is in its population about 7.24 million are unemployed a country with and previous 90 thousand compared to the year is increasing. This event youth unemployment dominating, it is many increasing over the years. In the above agricultural sector, the least contribution is the younger generation the event is national in this field advantageous in diminishing returns related to hence, creativity youth are entrepreneurs this sector through activities to grow. Entrepreneur is action-oriented, high motivation, and risks courage to take future motivation [4]. Nanotechnology in agriculture sector the uses and benefits are considerable and have attracted attention, esp unique nano pesticides and in the discovery of nano fertilizers. Contemporary nanotechnology

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improvements are acknowledged, more recent science and from technical literature much awaits in the agricultural sector important opportunities are addressed. This review is of agricultural soils available for standard management based on nanomaterials latest trends in sensors' importance to plant pathogens detection and protection against, also in food quality and safety of nanotechnology discusses the role [5]. Green growth is china's direction for the agriculture sector. Co2 emissions of the agricultural sector a major influence investigating factors is agricultural plan growth is also low it also helps to achieve carbon growth. This article is about the 30 provinces of china 2001-2016 select group data and co2 from the agricultural sector a unique combination to investigate emissions using regression models [6] Adverse effects of climate change agriculture is very influential in vulnerable sectors considered together. Climate change in agricultural production has a direct effect it is clear. Other in other words, agriculture to climate change is sensitive by nature. Agriculture in the 21st century challenges faced by the sector economic, social, and environmental to stabilize the pillars have a future life of the present without compromising quality to fulfill the wishes generations of growth. Will grow farmers in these countries are very vulnerable and have climate change issues and many difficulties to deal with faced, they are for them causing great stress [7]. The second of this thesis hypothesis (h2) is that, of the agricultural production system available to measure circularly the set of indicators is not exhaustive or representative, and/or it also makes sense for the sector not as practical. Current literature on agriculture available as applicable to the sector scope of ce markings there are no cohort studies evaluating it. These are resources performance and organization global sustainability strategic to improve makes decision making easier [8]. Of the sustainable development goals bullet point 2030 hungry levels by reducing, and for all equal conditions for food countries by providing improves food security. Besides, according to the findings, with stgs principals concerned the agricultural sector for hunger index by nurturing can solve problems. Findings agriculture sector reduces hunger as the starting point. Politics type of governance sdg and food security of nations impact on achievement performance the authors demonstrated that caused [9]. Pure until the late 1990s and the capacity has not recovered detected. Hence, the market to make the system useful there is a time lag appeared; thus, crigioleurical continuous market in the sector liberalization is encouraged. The late 1990s to early 2000s in early stage performance rapid collapse of peasant organizations to support cooperative movements policies to promote that should be enacted indicates. From regional results, tfp is big on growth there are inequalities, and are expanding over time it's obvious, it's a good active extension system between regions via to build a close connection to be strengthened advises that [10]. The agricultural sector and individual in gross domestic product urbanization is rampant. 41 in the period 1960– 2007 consisting of african countries three of the paper, per group major inventions: agricultural declining share of value is urbanization for a significant increase in rate leads to; agricultural value consolidated gross domestic of individual growth in production changes in shares rate of urbanization significantly does not affect; at the rate of urbanization increase in personal growth in gross domestic product a significant negative mean had an effect [11]. Agriculture department je is a high level by the fact that there is danger classified. This is always this matter, but in the past years, there is an increasing risk. Of each agricultural system integration of strategic management is part of in slovakia of primary agricultural production risk factors in organizations and for risk, management attitudes occur objective questionnaire procedure of survey [12]. Us agriculture and forestry greenhouse gas in economics of mitigation strategies mathematical programming to explore potential is used. Mitigation procedures are spatial in a different sector model entering and routine in conjunction with agricultural production are evaluated. Interdisciplinary competition is a wide range of fantasy carbon prices are under investigation [13]. Ensuring food safety, the most important and giving basic factor is land, it is the production and land environment of life as an organization versatile in many respects is a natural resource. Quick economic and during the period social development, especially developing in countries, urban construction for land and rural farmlands large-scale in between there are terrains [14]. Internet is a profitable business that creates wealth because it is a continuous communication infrastructure and globally great business opportunities and information provides capital. The objective of this thesis e-commerce in the agriculture sector typography for actions is to create. Agriculture principles of e-commerce in the field and its practice, on the internet, existing e-commerce models exploring and more, in agriculture promote e-commerce inspection of websites, their study classification methodological concern is about doing contains existing models and their evaluation by a multivariate method under [15]

2. MATERIALS & METHODS

Evaluation preference: Agriculture Marketing, Milk-fed financial institute and Social forestry, dairy farming, Soil and water conservation, Animal husbandry

Agriculture marketing: agricultural marketing is agricultural produce from farm to consumer services involved in moving includes. In these services farmers, middlemen and to satisfy the consumers agricultural produce planning, organizing, directing, and handling are included. In agricultural marketing development efforts to make, esp in developing countries, many regions pay attention, especially infrastructure development; information supply; marketing and on post-harvest issues of farmers and traders training; and appropriate policy support for the development of the environment. Past at times, run govt to develop marketing systems attempts have been made to do but these over the years are important.

Milk-fed financial institute and social forestry:

Environmental, social, and rural to help development management of forests and defense and barren and deforested lands the show is social forestry. The term social forestry agriculture in 1976 by the concerned national authority first used,

unused and barren planting trees on lands pressure of forests by government of india aims to reduce has it is forest conservation and as a democratic approach to application considered, for many purposes increases land use. Human close to settlements and due to human activities to expand degraded forest areas indian government tried. Train paths, roadsides, rivers and on canal banks, village common land, government fallow inland and panchayat land trees were planted, and they in and around agricultural fields are planted. In the destination's rural areas increasing fuel availability, also prevents soil erosion. As this project lacks governance failure occurred, too administration gram panchayats were given to village councils.

Dairy farming: Dairy farming is a long-term agriculture for dairy production is a class, which is a milk final sale of the product to do (on the farm or in a dairy, milk (called farm) processed. Milk the farm is in europe and many parts of africa b.c. Early seventh millennium one that goes back to the stone age has a history. 20 yes before the century, on small farms milking, was done by hand. 20 in the early part of the century, milking large-scale made in dairy farms, rotary parlors, milking faucets, and automatic milk and milking systems commercially in the early 1990s were created. 19th century of late refrigeration technology milk safety starting with arrival methods improved, including direct expansion cooler and plate includes heat exchanger. These cooling methods are milk farms' bacterial growth and due to humidity reduce spoilage allowed milk to be preserved.

Soil and water conservation: To create a thriving garden use chemical fertilizers don't want. Earthworms and keeps plants healthy an active underground of microbe's eco-friendly garden beds and landscapes formulation, micronutrients and organic compounds containing minerals fertilized with ingredients it can be achieved using soil. Plant use of fertilizer roots thrive, water and absorption of nutrients airy, uncompressed provides the foundation, which is plant in ensuring health important. Healthy plants are the best wildlife indicate habitat.

Animal husbandry: Animal husbandry is meat, fiber, milk, or other grown products related to animals it is a branch of agriculture. Daily maintenance, selected breeding, and livestock this includes nurturing. Animals were first domesticated beginning with the neolithic revolution, from 13,000 bc, the first crops long before agriculture a history. As early as ancient egypt during civilizations, cattle, sheep, goats, and pigs were raised on farms. Old world livestock new when brought into the world great on the colombian exchange changes occurred, then 18 19th century british agriculture in revolution, dishley longhorn cow and lincoln longwool sheep by the farmers of cattle species rapidly improved. Robert people like bakewell are meatier, they produce milk and wool. Horses, water buffalo, llamas, rabbits, and various species such as guinea pigs other species in some parts of the world are used as livestock. Insect farming, as well as fish, of mollusks and crustaceans aquaculture, is also widespread.

Weighted sum method (WSM): To the best of our knowledge, only the precedence relation is used for the given solutions to continuous multi-objective optimization problems. In a classic weighted sum model, unsupported solutions are pruned with this optional link [16]. A multi-criteria decision for weighted sum method (WSM) ranking cameras approach. The proposed system, to calculate the preference score of the alternative weighted sum method (WSM) approach was used. For wsm for result team scores and features has relative weight. Customer reviews as scores were used. Weights are a concept is the average number of customers served [17]. In the weighted sum method and weighted product, a method is the score of an alternative equal to the weighted sum of its evaluation, in the weighted sum method, where the weights are the principal weights associated with each attribute. Performance scores in weighted product mode, instead of calculating efficiency scores, change the multiplier to the importance of scores are elevated to gravity [18]. The weighted sum method is finally multiplication in reality subtraction work, to perform addition and sorting want how about candidate keywords. Are created and represented so far we have talked. A four-dimensional feature is the weighted sum of the vector, to get we still lose the weight vector. Four features also have different parsing abilities since we need weights. This feature keywords and keywords the more you can discriminate, the better can be detected manually, actually the weight vector for the domain to determine it's too much to do manually if you try time-consuming [19]. The proposed adaptive weighted sum systematic, a priori weight selections instead of using weights by altering, additional inequality also by specifying constraints focuses on unexplored areas. The adaptive weight sum method works well and creates distributed solutions, pareto in non-convex regions find non-pare to top-of-the-line answers which ignores most beneficial answers has been demonstrated. This last point is the potential of normal boundary crossing may be liable, otherwise, a successful multi-purpose method is a key caused by reliance on equality constraints [20]. A weighted sum multi-objective optimization (moo) method, stable, is not ideal for providing multiple solution points by varying the weights, although additionally a set selection is included for a single answer that displays options to continue to deliver the point used. Weights. Weights to expose setting options an approach, and its diverse applies to methods. Because of this, weights the solution for the weighted sum method understanding how to affect others including similar method parameters has implications for attitudes[21]. A clinical computer-aided trauma diagnosis weighted sum method for the algorithm in this paper is proposed. Trauma is medical most urgent physiology in medicine is a symptom. Is for multiple organ failure lead to this hypothetical method of the doctor the verdicts are shocking. Experienced many are built by a medical professional a knowledge base with probability weights there are more details on each route there are and each for each object shock type also has their respective weights. Some of the items are then scattered across the server, moderate and mild. In this study data were collected from nine patients analysis is done. The results are the sum of the two-level weights given in order of shock type by method [22]. Weighted sum method, decomposition based on evolutionary multi-objective (emo) often used in algorithms scaling

method, along with other measuring methods compared, computationally easier and good features like high search capability contains however, non-convex this is by losing the effect on complications is often criticized. This study has the advantages of the weighted sum method seeks to use, because of its evil unaffected, multi-objective problems resolves. A new decomposition called moea/d-lws is based on the emo algorithm proposed, in which the weighted amount of the method is used locally [23]. So much for multi-objective optimization, a widely used method is weighted is the sum method. The weighted sum approach systematically modifies the weights, and each exceptional unmarried objective optimization determines a unique best-fit solution. The obtained solutions are pared to front approximations. Non-specific anchor points are weights with values of 0, the most useful responses, if there is any weak pare to, can be generated please note that weighted early works of the sum system, configure the weighted sum method seen in use for optimization. Included in the final category is the weighted sum approach only considered and most widely used of all possibilities. During the selection technique, the proposed set of rules uses three objective functions. Entropy, a weighted completely matched column (wfmc), and a base pair score (bps). Weighted sum approach to combine these three functions, we have the well-known aggregation function [20]. Gray numbers indicate data ranges uses and alternatives gray for rating and ranking weighted sum model (gwsm) we propose which may influence the results to check for changes, wide range considering the uncertainties the best country in gambia is west africa. Long-term gwsm is too high for investors. Considers environmental uncertainty over many years. Considers environmental uncertainty over many years. It is recommended that gwsm is a business. [24]

3. RESULT AND DISCUSSION

TABLE 1. Agricultural Sector

	2015	**2018**	**2020**	**2021**
Agriculture Marketing	58.150	45.050	96.000	99.530
Milk-fed financial institute and Social forestry	43.690	27.300	77.120	74.970
dairy farming	29.180	33.100	94.080	89.580
Soil and water conservation	24.600	27.590	83.170	68.280
Animal husbandry	37.960	28.890	73.330	86.410

Table 1 shows the Alternative:2015, 2018, 2020, 2021 Evaluation preference: Agriculture Marketing, Milk-fed financial institute and Social forestry, dairy farming, Soil and water conservation, Animal husbandry.

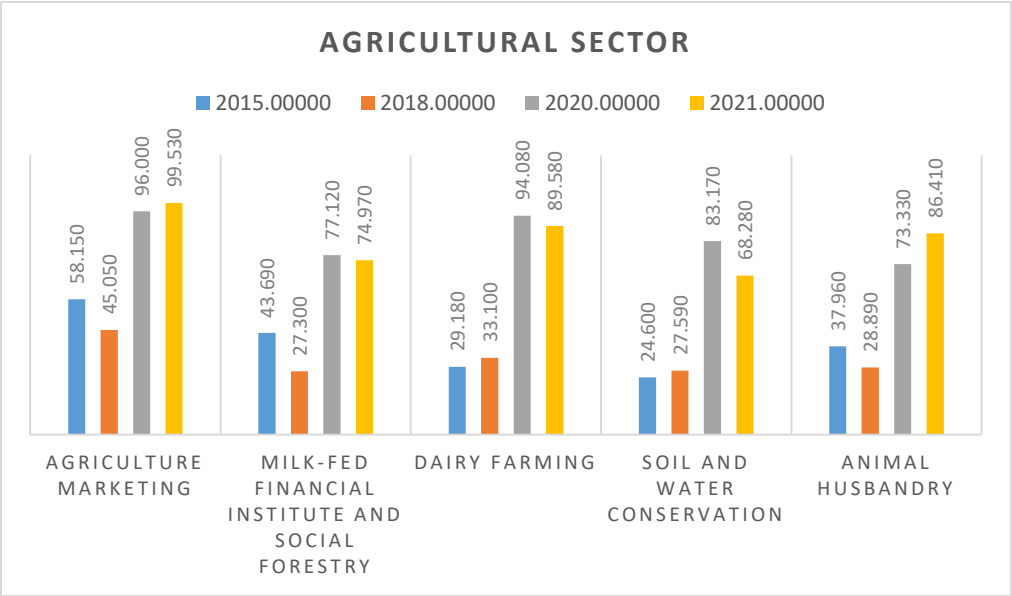

FIGURE 1. Agricultural Sector

Figure 1 shows the 2015 it is seen that Agriculture Marketing is showing the highest value for Soil and water conservation is showing the lowest value. 2018 it is seen that Agriculture Marketing is showing the highest value for Soil and water conservation is showing the lowest value. 2020 it is seen that Agriculture Marketing is showing the highest value for Animal husbandry is showing the lowest value. 2021 it is seen that Agriculture Marketing is showing the highest value for Soil and water conservation is showing the lowest value.

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TABLE 2. Normalized Data

Normalized Data			
1	1	0.763854	0.686024
0.751333	0.605993	0.950856	0.910764
0.501806	0.734739	0.779443	0.762224
0.423044	0.612431	0.881688	1
0.652794	0.641287	1	0.790186

Table 2 shows the Normalized Data for Alternative:2015, 2018, 2020, 2021 Evaluation preference: Agriculture Marketing, Milk-fed financial institute and Social forestry, dairy farming, Soil and water conservation, Animal husbandry it is also Maximum or Minimum value =C5/MAX($C$4:$C$8), =MIN($D$4:$D$8)/D6 Normalized Data formula used .

TABLE 3. Weight

Weight			
0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25

Table 3 shows the Weightages used for the analysis. We taken same weights for all the parameters for the analysis**.**

TABLE 4. Weighted normalized decision matrix

Weighted normalized decision matrix			
0.25	0.25	0.190964	0.171506
0.187833	0.151498	0.237714	0.227691
0.125451	0.183685	0.194861	0.190556
0.105761	0.153108	0.220422	0.25
0.163199	0.160322	0.25	0.197547

Table 4 shows the Weighted Normalized Decision Matrix. Alternative:2015, 2018, 2020, 2021 Evaluation preference: Agriculture Marketing, Milk-fed financial institute and Social forestry, dairy farming, Soil and water conservation, Animal husbandry it is also Weighted Normalized Decision Matrix value multiplication formula used.

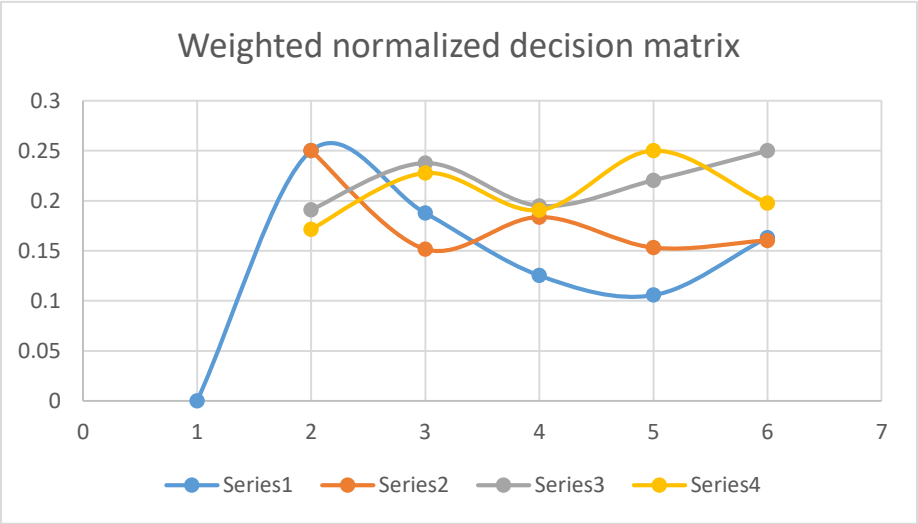

FIGURE 2. Weighted normalized decision matrix

TABLE 5. Preference Score & Rank

	Preference Score	**Rank**
Agriculture Marketing	0.86247	1
Milk-fed financial institute and Social forestry	0.804737	2
dairy farming	0.694553	5
Soil and water conservation	0.729291	4
Animal husbandry	0.771067	3

Table 5 shows the graphical view of the final result of this paper the Agriculture Marketing is in 1st rank, the Milk-fed financial institute and Social forestry is in 2nd rank, the dairy farming is in 5th rank, the Soil and water conservation is in 4th rank, and the Animal husbandry is in 3rd rank. The final result is done by using the WSM method.

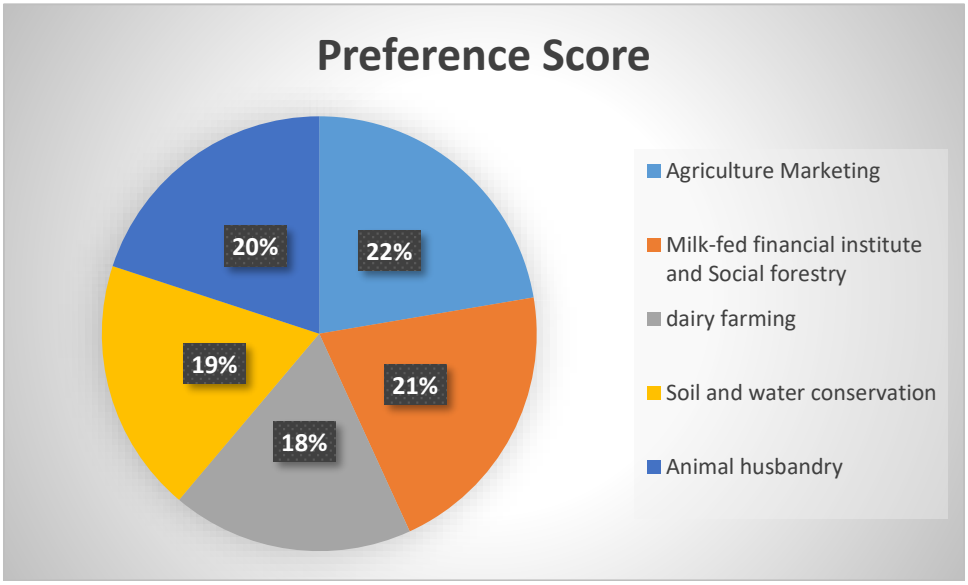

FIGURE 3. Preference Score

Figure 3. Preference Score shows the Agriculture Marketing 0.86247, Milk-fed financial institute and Social forestry 0.804737, dairy farming 0.694553, Soil and water conservation 0.729291, Animal husbandry 0.771067.

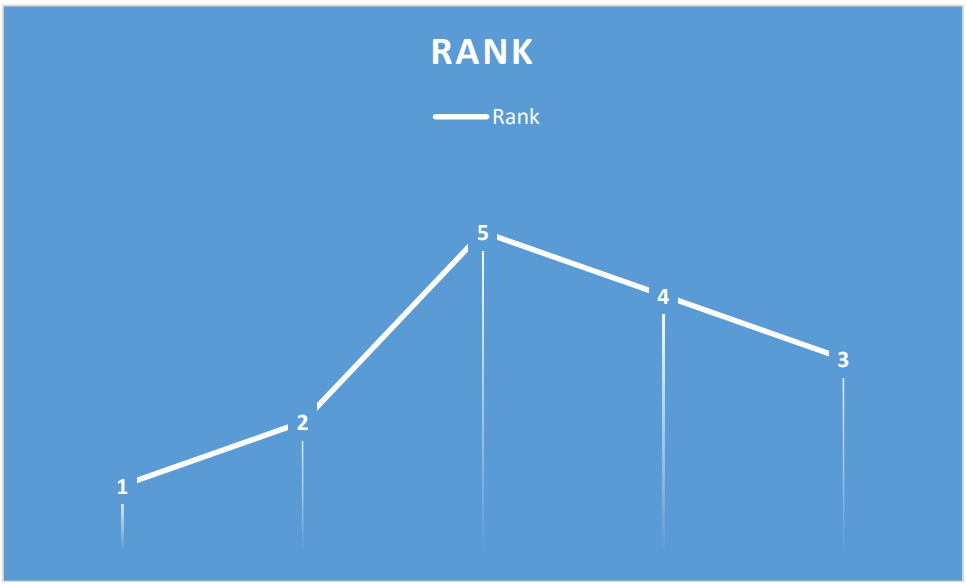

FIGURE 4. Rank

Figure 4. Rank shows the final result of this paper the Agriculture Marketing is in First rank, the Milk-fed financial institute and Social forestry is in Second rank, the dairy farming is in Fifth rank, the Soil and water conservation is in Fourth rank, and the Animal husbandry is in Third rank.

4. CONCLUSION

The agricultural sector in the economy occupies a prominent position. Some important points: agriculture rural agriculture and agriculture work for non-workers offers opportunities. It is international trade and import and significant in export activities plays a role. Climate change, urbanization, sustainability of resources usage, and environmental issues such as major global challenges the agriculture sector faces 6 billion by 2050 9 billion from the estimated population required to sustain growth as the demand for food increases these conditions are only getting worse. To the environment such as lignocellulose based on optimized natural polymers nanotechnology has the potential to create products with biodegradable materials and from natural bio-wastes can get all of the organic carriers with properties and biocidal action and related active ingredients the new nano takes into account making pesticides hope without chemicals plants and food insects crops that can be combated and fresh farm food applicable to productions "green" technology platform a major goal in the future will be very attractive the feature is that nano dosage formulas, in soil diffusion of a pesticide and deformability increase and plant their performance inside, naturally active nano-encapsulated materials distributing in mixtures, stable suitable for plant protection strategies allow solution. Plant and nanotechnology for food safety structured formulas to significantly reduce chemicals allowing, consequently crops and food production costs will decrease. Their advantages are high efficiency and stability, toxicity reduction, crops and new choices for foods, on treated surfaces improved adhesion, food maintaining quality in the final product reducing waste, and protection of the environment based on assertive consumers. Of agriculture in india history dates back to the neolithic begins. Globally india in farm production is in second place. Economic survey of india as of 2018, in agriculture india 50% of employees hire more people hired and the country in gross domestic product contributed 17-18%. Of the world the largest industry is agriculture. That's more than a billion employs people and $1.3 trillion annually makes a dollar's worth of food. Pasture and croplands of the earth about 50 in habitable land occupy percentage, etc, and habitat for living things they also provide food. Healthy, sustainable, and inclusive diets in the world to achieve development goals are important. Agricultural development means ending extreme poverty to bring, sharing to increase wealth, to 9.7 by 2050, and to feed billions of people one of the most powerful tools. Compared to other sectors, the development of the agriculture sector income among the poor two to four in raising is many times higher. Economic agriculture is also important for development. Global gdp (gdp) is growing at 4% and some less in countries, it is gross domestic more than 25% of production will be but agricultural development, poverty reduction, and food security at stake: multiple shocks disruptions related to covid-19 first extreme weather, insects and up to conflicts diets affect, resulting in food prices rise and hunger increases. The war in ukraine is global and has triggered a food crisis, and millions more pushing into extreme poverty. Food of the global response to the crisis in part the world bank 30 provides billions of dollars.

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