



SWOT Analysis of Entrepreneurship on Cultured Meat in India

Kandeepan Gurunathan

ICAR-National Meat Research Institute, Hyderabad, Telangana, INDIA

*Corresponding Author: drandee@gmail.com

How to cite this paper

Gurunathan, K. (2026). **SWOT Analysis of Entrepreneurship on Cultured Meat in India**. *International Journal of Livestock Research*, 16(8), 43–57.

Received : Apr 17, 2026
Accepted : Aug 06, 2026
Published : Aug 31, 2026

Copyright @ Gurunathan, 2026

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).
<http://creativecommons.org/licenses/by/4.0/>



Abstract

Cultured meat, an emerging alternative to traditional animal protein, is at a nascent stage in India but holds significant potential as a disruptive technology for entrepreneurship. Despite its promise, limited market data poses challenges for potential entrepreneurs. To address this gap, a survey was conducted to analyze demographic patterns and perform a SWOT analysis based on participant responses, providing baseline insights for future business ventures in this domain. Data were collected using a structured questionnaire and analyzed using percentage methods. The findings revealed unanimous agreement among respondents that key strengths of cultured meat technology include its cutting-edge nature, close resemblance to conventional meat, sustainability, ethical and slaughter-free production, adaptability to diverse culinary preferences, steady raw material supply, health and safety benefits, and long-term market viability. Identified weaknesses included skepticism toward lab-grown products, high production costs, uncertainty in regulatory approvals, difficulty replicating traditional meat's sensory qualities, potential market saturation, limited research, scaling challenges, and the resource-intensive process of educating consumers. Opportunities recognized by all participants included meeting ethical and environmental demands through reduced greenhouse gas emissions, land, and water use, fostering collaborations across the food sector, attracting conscious consumers, penetrating new markets, leveraging rising demand for protein, and securing growing investments from government and private sectors. Threats noted involved intense market competition, public misconceptions, regulatory and compliance hurdles, risks of negative media coverage, and inadequate supply of essential cell culture inputs. This study provides crucial baseline data for establishing cultured meat start-ups in India.

Keywords: Cultured Meat, Entrepreneurship, SWOT.

Introduction

A recent study demonstrates that animal-derived protein, such as meat and dairy, uses 83 percent of farmland and is responsible for 60 percent of agriculture's greenhouse gas emissions (GFI, 2023). As global temperatures rise, it is estimated that India will be one of the worst affected countries due to climate change. This data points to why we must develop a resilient and sustainable protein strategy for India. Novel foods like cultured meat have the opportunity to utilize fewer inputs, have shorter supply chains, reduce the risks of zoonotic diseases, and decrease overall carbon emissions while serving the growing demand for protein. Over the last decade, USD 2.8 billion has been invested in cultured meat, with investments on average tripling every year. With the right interventions, cultured meat could provide billions of dollars' worth of the world's meat supply by 2030, with implications across global food systems and for multiple other cross-cutting sectors. There are about 156 companies involved in the cultured meat industry worldwide by the year end 2022 (GFI, 2023).

Cultured protein can supplement the existing protein supply chain while coexisting with traditional livestock farming and still boosting foreign exchange through exports. Countries across the world are recognizing the need to include alternative protein within their national economic and agricultural strategies. India can be the next leader in cultured proteins through public investments, ramping up R&D, scaling up manufacturing, training a future-ready talent pool, and building strong regulatory and policy pathways. Cultured meat as a clean-tech solution could help India become an alternative protein powerhouse.

With a transition to higher-protein diets in developing countries, the production and demand for meat is expected to rise by more than 50% by 2050 (FAO, 2018). Cultured meat will form one part of a varied landscape of future protein sources, achieving an overall reduction in conventional meat consumption. Cultured meat is a solution to existing food safety problems. The widespread acceptance will depend in large part on the price and taste (Bryant and Barnett, 2020).

India is anticipated to be one of the world's most populated countries with the expected surge in meat consumption. An imbalance has been noted in: (a) the demand–supply aspect of meat consumption patterns; (b) the limited availability of livestock husbandry; and (c) the depletion of grasslands and forest cover due to the overgrazing of animals, which poses environmental concerns (Hiranandani, 2024). Meat consumption offers nutritional benefits along with potential health risks associated with unhygienic meat processing and supply chain management practices (Rubio et al., 2020). Increased meat consumption tends to create global opportunities for alternative protein (cultured meat) markets, allowing the food industry to re-strategise sustainable future foods in realms of existing food security challenges. Consumption of meat in India is projected to rise with an increase in consumer incomes. Hence, novel alternative protein, cultured meat is being developed to satisfy the demand for meat-derived proteins in the diet. These exciting developments undoubtedly instil curiosity in stakeholders and consumers about the cultured meat product variants to be developed with respect to the diversity and uniqueness of the Indian food palate.

Indian companies and skilled workers have tremendous potential to be at the forefront in the global cultured meat market, driving novel gastronomical experiences and cultural appeal with transformative cultured meat products of relevance to food sustainability. Stakeholders, including investors, entrepreneurs, and strategic partners, possess a broad range of opportunities at various stages of the cultured meat development process, leading to a substantial ability to capitalise on the global shift occurring in meat production. Public-private partnerships among universities, companies, and non-profit organisations (e.g., Good Food Institute India, Humane Society International) are accelerating the momentum needed to set up funding initiatives and research infrastructure (Kamalapuram et al., 2021). Fundraising and proofs-of-concept for products play a pivotal role in accelerating the Indian cultured meat industry. B2B (Business to Business) enterprises stationed at India's strategic locations can promote the co-manufacture and distribution of low-cost and specialised cultured meat components, including cell line development, cell banking, and bioreactor operations (Martyn-Hemphill, 2024). Synergism between the cultured meat industry and innovative technologies, including artificial intelligence, bioprinting, data science and analytics, design thinking, the internet of things, lean methodologies and applications, lean manufacturing, machine learning, machine intelligence, and nanotechnology, promises to foster cultured meat innovations in India and globally. Cost-effective and sustainable cultured meat products can be created to address food sustainability and security aspects of the meat industry with the upcoming research initiatives from governmental and private sectors coupled with the enormous funding possibilities.

The environmental sustainability bolster market growth of the cultured meat. Whereas the high production cost hinders the market growth. The challenging business poses a lot of scope for a new segment of market growth in India. The entrepreneurship on cultured meat has huge demand for the animal protein but needs exploratory ideas. Hence cultured meat has a great avenue for entrepreneurship in India.

In December 2020, Singapore Food Agency (SFA) gave the world's first regulatory approval for the sale of cultured meat branded as "Good Meat-Cultured chicken bites" manufactured by USA based startup 'Eat Just Inc' (Joe, 2024). The historic tasting event of cultured meat nuggets held in Singapore received positive acclaim (Waltz, 2024). In June 2023, the United States now has legal authority to offer lab-grown meat to people for the first time. The US Department of Agriculture has approved Upside Foods and Good Meat, two companies that specialize in cultured meat, to manufacture and market chicken products that are cultivated in massive metal vats from clusters of sample animal cells (SphericalInsights, 2024).

Entrepreneurship research is concerned with why, when, and how individuals identify and exploit the opportunities (Shane and Venkataraman, 2000). Agri-business includes enterprises related with the production, propagation, and distribution of products and services related with agriculture, floriculture, sericulture, horticulture, aquaculture and animal husbandry. Agribusiness entrepreneurship has potential to generate growth, diversify income, and provide widespread employment and entrepreneurial opportunities (Regmi and Naharki, 2020).

The potential for the success of the cultured meat market is primarily based on scientific advances from both industry and academia. A possible target for the Indian cultured meat industry is a reduction in both upstream and downstream production costs by the creation of robust and flexible bioprocesses (Neo, 2019). India's cultured meat industry is expected to diversify in terms of company specialisation and business creation opportunities and emphasise research and development. Large companies and startups in the cultured meat sector are primarily focused on technical challenges, including cell line optimisation, the design of cost-effective procedures such as procedures for the production of media variants, scaffolding methodologies, and the design of scalable bioprocesses (Choudhury et al., 2020). It would certainly be advantageous for leading life sciences and protein manufacturing firms to create specialised divisions and cultivate B2B partnerships along with cultured meat value chain entry points. Multinational life-sciences-related and biomanufacturing companies could set up their accelerator or incubator programs for designing novel cultured meat ingredients in India. Indian research organisations could accelerate the transfer of technology in the cultured meat domain by promoting open-access and shared resources, including manufacturing protocols, cell line banking, scaffolding, and tissue engineering concepts (Neo, 2019).

Startups and established companies in India are indeed uniquely placed to capitalise upon this massive cultured meat market opportunity. Startups are best positioned to spin off new products and technologies due to their agility and adaptability. Working with established firms can add value as it makes use of their expertise, resources, and skilled professionals in product development, scale-up, production infrastructure, marketing strategies, distribution, and sales paradigms for the startup sector. Increasingly, startups and established companies are engaging in mutual collaboration and skill strengthening. There is a quintessential need to set up accelerator units that help small and new brands in order to boost long-term innovation strategies. Regardless of the species or strain of origin of designated cultured meat products, raw material, accessorial support service, and technology development will be commonplace.

Cultured meat is an innovative technology developed for an alternative source of protein. The technology is environment friendly, sustainable and does not need slaughter of animals for meat production. This technology produces a very less carbon footprints compared the traditional meat production. Cultured meat introduces a new market segment in the meat sector. Hence, being novel product vast entrepreneurial opportunities exist. A country like India, having more than 1.4 billion population requires more protein to feed its people. India has more than 70% non-vegetarian population. The growing demand for meat protein, increasing income and the increasing population deserves the need for novel technology to meet the animal protein requirement in the country. This paves ways for entrepreneurship in the cultured meat segment. In order to take up entrepreneurship in the new technology venture, it is necessary to study the strength, weakness, opportunity and threats available in this field before initiating the business. Therefore, a study was undertaken to survey the representative population to get the intricacies of the strength, weakness, opportunity and threats (SWOT) in the cultured meat technology to take up entrepreneurship in this sector in India.

The objectives of the study are listed below.

- i. To conduct a demographic analysis of participants in the survey on cultured meat entrepreneurship in India
- ii. To analyze the strength, weakness, opportunities, and threats (SWOT) of cultured meat entrepreneurship in India

Methodology

The relevant information related to cultured meat technology entrepreneurship and SWOT analysis were obtained from the thorough study of journal articles, research papers, review articles, books, survey reports etc. and extensive review was done to evaluate the internal factors (strengths and weakness) and assess the external factors (opportunities and threats) of cultured meat technology entrepreneurship in India. The data collection was conducted through a structured questionnaire (Annexure I). The data was collected both in physical and online form. The various variables used in data collection included, age, gender, place of respondents, occupation, eating habits, awareness on cultured meat, willingness for consumption of cultured meat, view on cultured meat as disruptive technology, willingness for entrepreneurship, belief on cultured meat as successful enterprise, belief for the strength, weakness, opportunities and threats of cultured meat technology entrepreneurship. A total of 500 respondents was used in the study for data collection. The data were subjected to find the percentage response in each group.

Sample Selection

A total of 500 respondents used in the study for data collection. The participants represented different age, gender, place, occupation, and eating habits to avoid any biasedness and make the data a true representative of the population.

Research Design

Participants

Participants were recruited online and offline through the research panel. The study aimed to recruit representative samples of 500 people to achieve an acceptable margin of error and be well-powered to detect differences between groups (Kotrlik and Higgins, 2001). The quotas for age and gender were set to ensure that the samples were representative of the general population with respect to the variables.

Procedure

All participants used a checkbox on the questionnaire to indicate their choice. Before beginning the survey, participants were given information about the study. Participants were asked for demographic information, including age, and gender. The participants answered questions about the eating habits, preference for cultured meat, preference for entrepreneurship on cultured meat, preference for various variables attached to the strength, weakness, opportunity and threats related to cultured meat entrepreneurship etc. as per the structured questionnaire. A randomized block design was used for various variables.

Materials

The survey instrument, a structured questionnaire was distributed in English. The full survey instrument, a structured questionnaire can be viewed in Annexure I.

Sources of Data

The data was collected both in physical and online form from a representative population considering various factors such as age, gender, place, occupation and eating habits.

Tools for Data Collection

The data was collected through physical and online form by using a structured questionnaire (Annexure I).

Statistical Analysis

A total of 500 respondents (n=500) was used in the study for data collection. The data were subjected to find the percentage response in each group.

Results and discussion

Demographic analysis of participants in the survey on cultured meat entrepreneurship in India

Age of Participants in the Survey

The age of the participants in the survey revealed a difference among the groups. The majority of the participants in the survey belonged to the age group of 25-45 years. The minimum participation was observed in the age group of >65 years with zero participants in the survey. The age of participants indicated 48% in 25-45 years, 32% in 45-65 years, 20% in <25 years and 0% in >65 years (Figure 1). The age group difference states that the young people take more interest in the survey and exhibit active involvement.

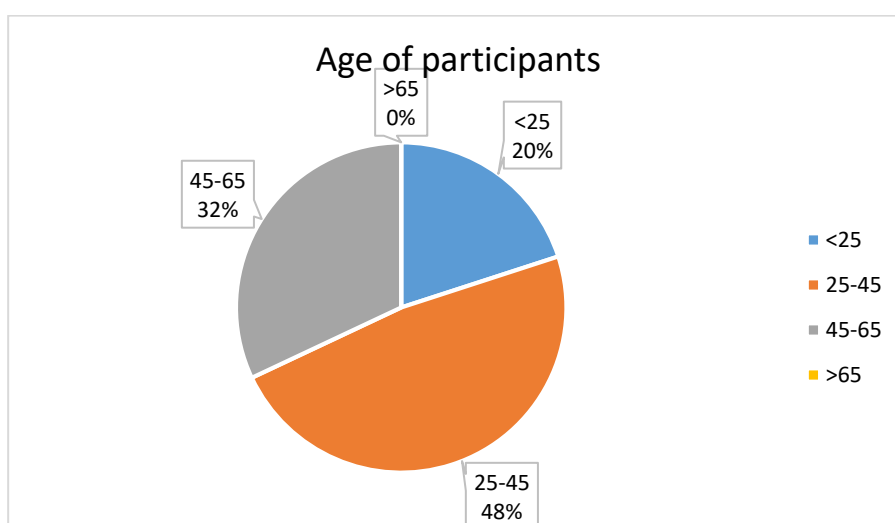


Fig 1: Age of participants in the survey

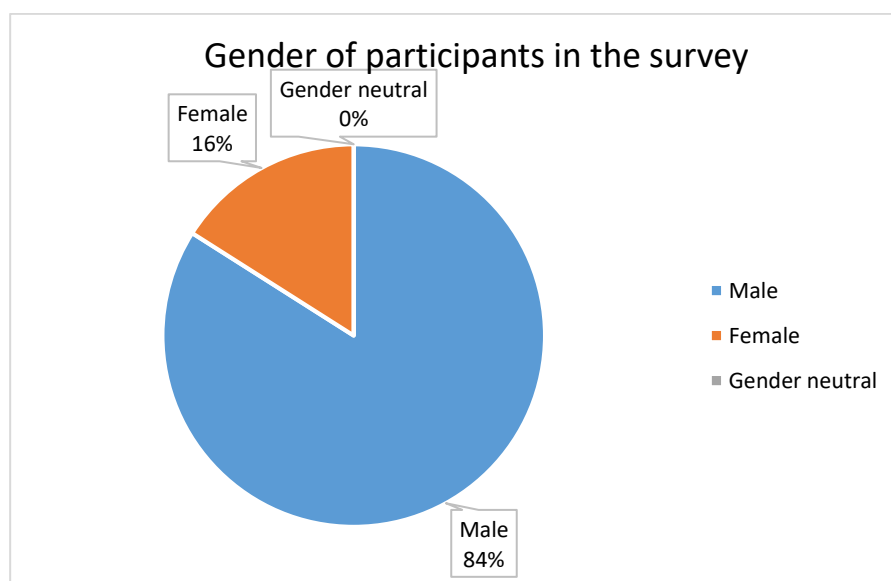


Fig 2: Gender of participants in the survey

Gender of Participants in the Survey

The gender of the participants in the survey indicated a clear difference between genders. The majority of the participants in the survey were males which was about 84% (Figure 2). The female participants in the survey were about 16%. There was no gender-neutral participants in the survey. The results reveal that males actively take part in survey related to meat business studies. Besides, the result shows the cultural practice in country like India that males majorly do the meat shopping for the family. In another report, Choudhary et al. (2023) recorded that 70% of respondents were male meat scientist for a study related to acceptance and perception towards cultured meat. Choudhary et al. (2024) also observed that 54% were males in a study on awareness and acceptance of informed and professional consumers towards cultured meat.

Place of Respondents in the Survey from Different Parts of India

The place of participants in the survey revealed no difference between the groups. The participants were equally represented from North, South, Central, East and West parts of India. There was about 20% each representation of participants from each North, South, Central, East and West parts of India. (Figure 3). The indifference among number of participants were related to the unbiasedness of the representation from each part of India to have true representation in response and unbiased result.

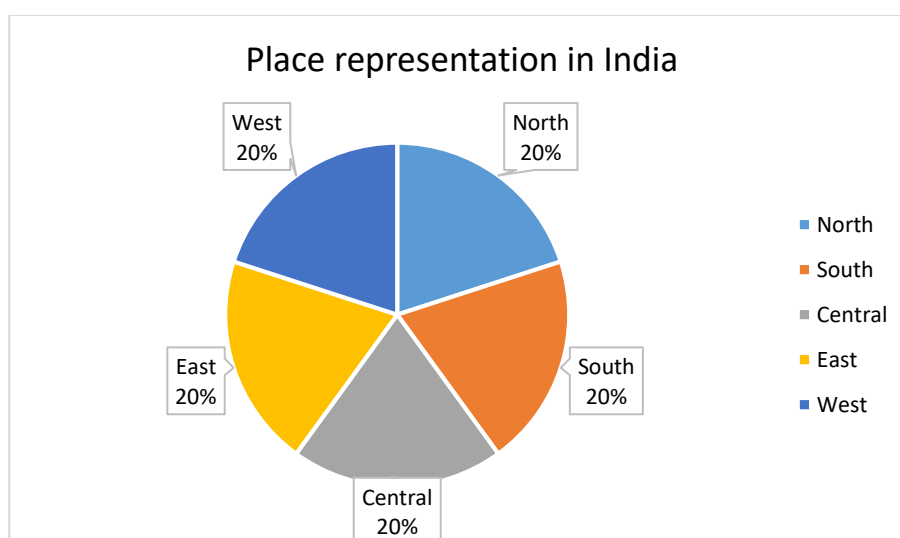


Fig 3: Place of respondents in the survey

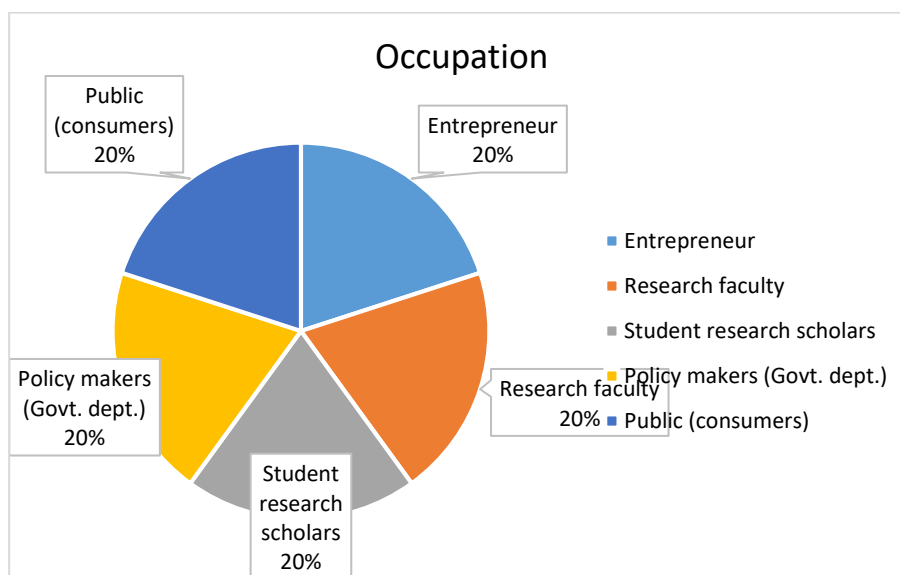


Fig 4: Occupation of respondents in the survey

Occupation of Respondents in the Survey

The results revealed that there was no difference between the numbers of participants representing each occupation in the survey. Each of the occupation represented in the survey such as entrepreneur, research faculty, student research scholars, policy makers (govt. dept.), and public (consumers) constituted about 20% each (Figure 4). This showed that each occupation was equally represented to derive a holistic and unbiased data to arrive at the proper result. In another study, Choudhary et al. (2024) conducted a survey based on 295 food science scholars and 105 veterinary professionals as respondents.

Eating Habits of Respondents in the Survey

The eating habits of the participants showed a difference between the groups. The majority of the participants in the survey were meat water (non-vegetarian). There was no vegan among the participants in the survey. The results of the eating habits showed that 72% were meat eater (non-vegetarian), 28% were non-meat eater (vegetarian), and none were vegan. This showed that majority of the population represented non-vegetarian in India and this was related to the meat consumption and demand in the country. In another report, Choudhary et al. (2023) reported that 86% of respondents were meat eaters in a study related to acceptance and perception towards cultured meat. Also, Choudhary et al. (2024) observed that 73% were meat eaters in a consumer study related to cultured meat. This corroborates with the findings in the present study.

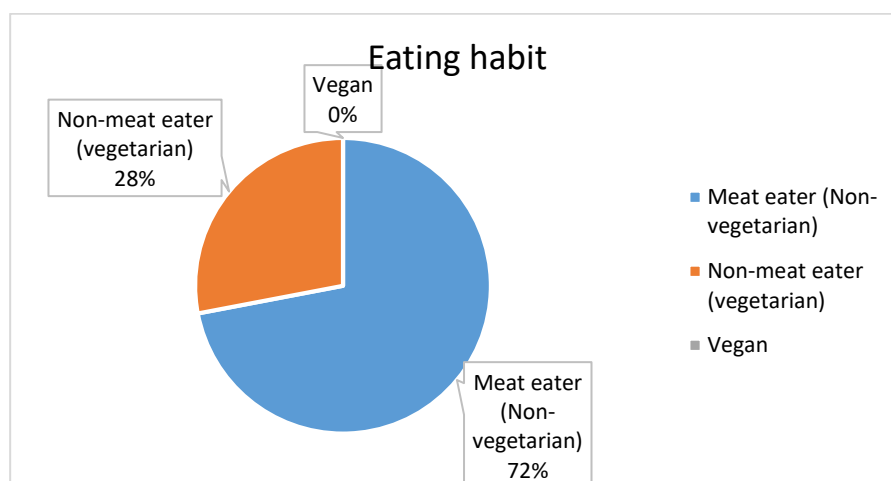


Fig 5: Eating habits of respondents in the survey

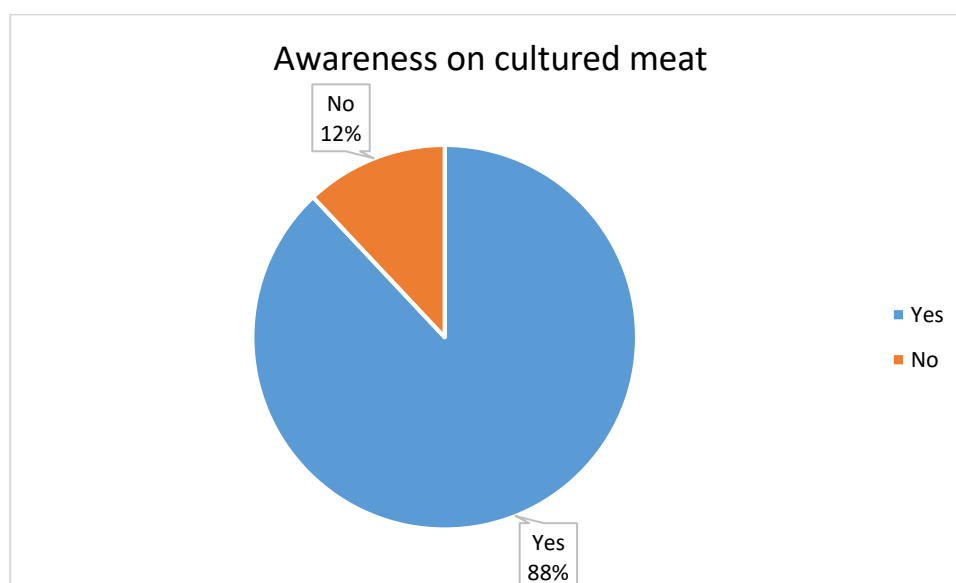


Fig 6: Awareness of respondents on cultured meat

Awareness of Respondents on Cultured Meat

The results of the response on cultured meat awareness by the participants indicated that the majority were aware of the new technology. Only a minimum number of participants were unaware of the cultured meat technology. About 88% of the participants were aware of the cultured meat technology, while about 12% were not aware of the cultured meat (Figure 6). This may be attributed to the increased availability of the mobile phone, internet connectivity, and social media platforms among the consumers. So, majority of the consumers remain updated with the latest information in various fields. Besides, a lot of campaign is also being undertaken by environmental groups and startups worldwide to promote this technology among the consumers.

Willingness of Respondents for Consumption of Cultured Meat

In the present study, the results have indicated that majority of the participants were willing to consume the cultured meat. About 76% of the participants were willing to consume the cultured meat if made available in the market. Whereas, 24% of the participants were unwilling to consume cultured meat (Figure 7). The majority of the respondents showing eagerness to consume the cultured meat might be due to the fact that the cultured meat would be made to look like a conventional meat and taste like a conventional meat, the only difference being it is obtained from the cells of live animals and cultured in the lab to grow as muscle mass with all the meat characteristics. Surprisingly, the majority group has acted as Innovators, to adopt a new idea, eager to try new products and take risks.

In another study, Dupont et al. (2022) has found that 65% of German consumers were willing to try a cultured meat burger, and nearly 47% reported to be willing to replace conventional meat with cultured meat. Choudhary et al. (2023) reported 38% of the meat scientists were willing to try cultured meat at least once. Liking conventional meat, fear of new untested technological products and high cost were reported as the main reasons for unwillingness to try cultured meat. Bryant et al. (2019) found significantly higher acceptance of cultured meat in India. In India, 10.7% were not at all likely to purchase clean meat; 32.9% were somewhat or moderately likely, and 56.3% were very or extremely likely. Girish et al. (2024) analyzed the perception of Indian consumers towards cultured meat by conducting a survey and revealed that about 60.52% of the respondents are willing to buy the cultured meat if made available.

Respondents View on Cultured Meat as a Disruptive Technology

The results of the current study revealed that all the participants agreed to the point that the cultured meat is disruptive technology to the modern world and is going to bring a lot of changes in the meat industry and its market in near future. The survey indicated that 100% of the participants agreed to the view that cultured meat is disruptive technology in the domain of meat, its market and consumption pattern (Figure 8). The technology disruption has been foreseen by many scientific community which is illustrated in their publications.

Cultured meat, i.e. meat produced in-vitro through the cultivation of animal stem cells, is a radical innovation that prepares to enter the market in the near future (Lin-Hi et al., 2023). It has the potential to substantially reduce the negative externalities of today's meat production and consumption and pave the way for a more sustainable global food system. Girish et al. (2024) reported that among the respondents, 54.0, 59.1 and 66.5% opined that cultured meat is a potential alternative to traditional meat in view of challenges like sustainability, nutritional security, and animal welfare, respectively. Dutch start-up Mosa Meat claims that a single cell sample can create up to 10,000 kg of cultured meat, with the production process requiring 99% less land and 96% less water than traditional livestock agriculture (IDTechEx, 2020). Cultured cells double in number every few days, meaning that cultured meat could also be produced far quicker than conventional meat -Israeli start-up Aleph Farms claims that it can produce a batch of cultured steaks within three weeks, a much shorter timeframe than the two years it takes to grow a cow.

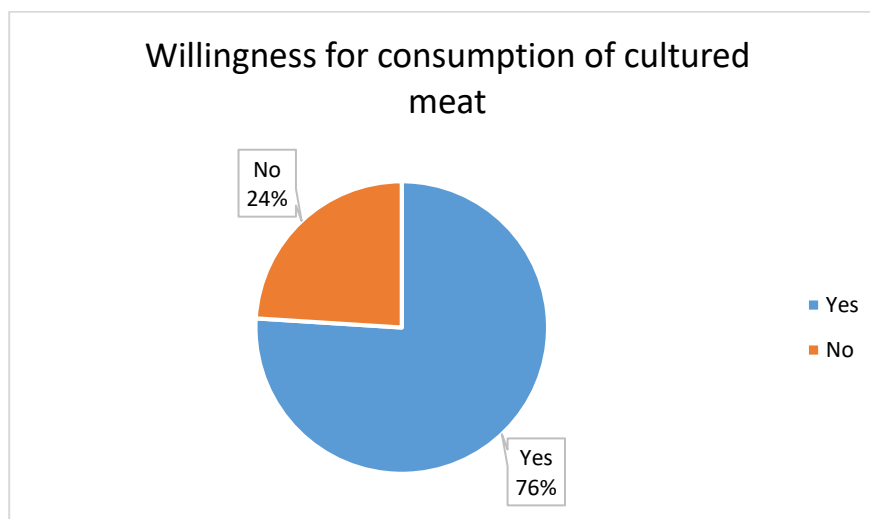


Fig 7: Willingness of respondents for consumption of cultured meat

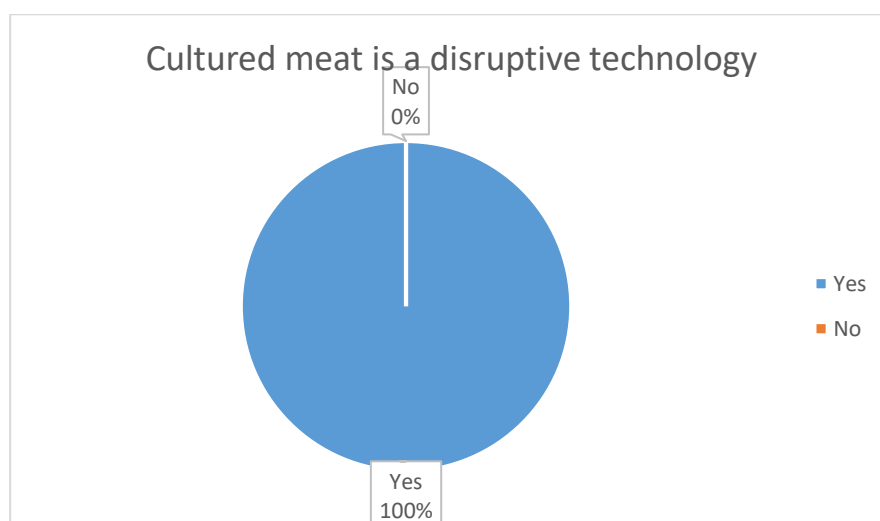


Fig 8: Respondents view on cultured meat as a disruptive technology

Respondents' Willingness for Entrepreneurship in Cultured Meat

The results of the present study indicated that the majority of the participants in the survey were not willing to take up entrepreneurship in cultured meat. The study revealed that 76% were unwilling for entrepreneurship on cultured meat, while only 24% were willing to take up entrepreneurship in this technology (Figure 9). This might be due to the fact that in India, the technology is still under research and nobody has developed the market ready product yet. The majority of the respondent's unwillingness for the entrepreneurship in cultured meat is also owed to its high risk and resource unavailability.

Respondents' Belief for Cultured Meat as a Successful Enterprise in Future

The results have shown that the majority of the participants believe that cultured meat will be successful enterprise in future. About 88% of the respondents believed that the cultured meat technology would lead to a successful business in the day to come, while 12% did not believe that cultured meat is going to be a successful business model (Figure 10). This can be attributed to the fact that this technology is an innovative, sustainable, environment friendly, solution for increasing protein demand by the consumers, increasing govt. support through policy and funding, venture capitalist fund availability etc. In another study, Choudhary et al. (2023) reported that 25% of the meat scientists supported development of cultured meat.

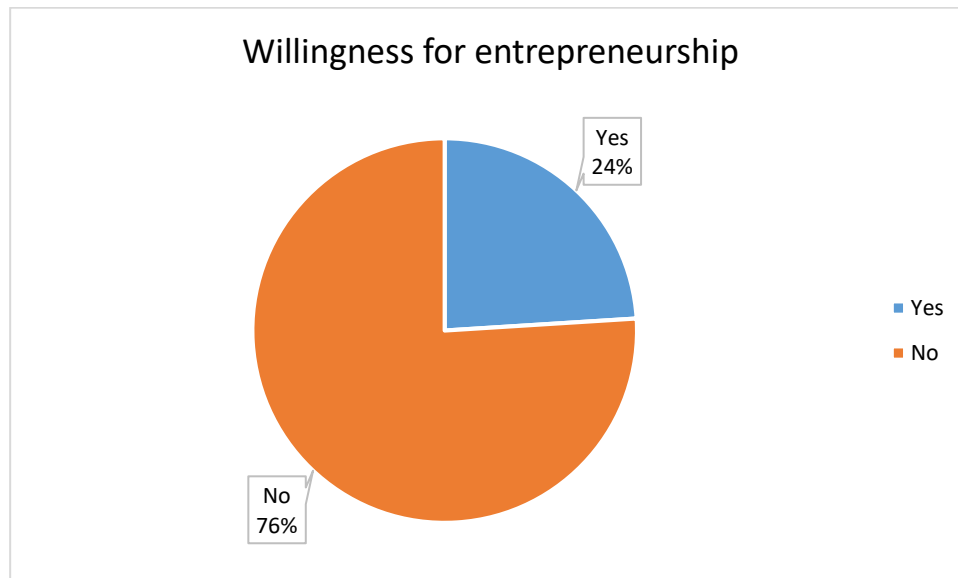


Fig 9: Respondents' willingness for entrepreneurship in cultured meat

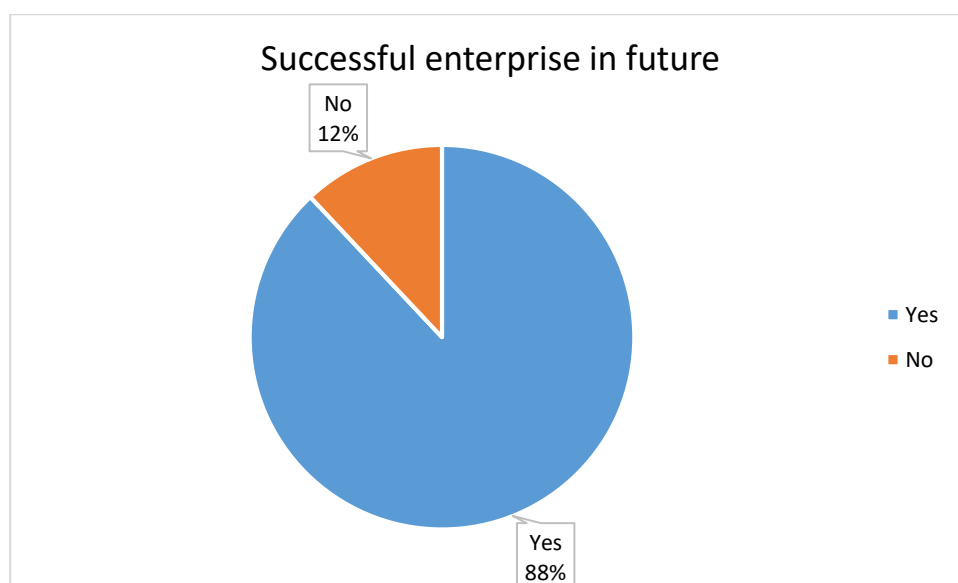


Fig 10: Respondents' belief for cultured meat as a successful enterprise in future

Strength, weakness, opportunities, and threats (SWOT) analysis of cultured meat entrepreneurship in India

Respondents' Belief for the Strength of Cultured Meat Technology Entrepreneurship

The results indicated that all the respondents believed that cutting-edge technology, closely resembling traditional meat, sustainable, environment friendly meat production, ethical, cruelty free, slaughter free meat production, product meets the demand for versatile culinary practices and consumer preferences, steady supply of raw material in the market, ensures clean, healthy and safe product, and highly viable product for a long-term stable market aspects as the strength of the cultured meat technology (Figure 11). The finding affirms the fact that environmental sustainability of the product or technology bolster market growth. Choudhary et al. (2023) reported that the majority of the meat scientist agreed that cultured meat is good for the environment, and animal welfare. Tzu (2023) stated that the SWOT analysis of alternative proteins indicated its strength as consumer appetite, stakeholder engagement, sustainability imperative, and multiple technologies.

Respondents' Belief for the Weakness of Cultured Meat Technology Entrepreneurship

The results showed that the all the participants completely agreed that the weakness of cultured meat technology

based entrepreneurship were skepticism about consumer acceptance due to lab production, highly expensive product due to high production cost, uncertainty for getting regulatory approval and certification, technical limitation to reproduce same taste, texture and experience to traditional meat, risk of increased competition and saturation in the market as the source is same, consumer education and awareness is time consuming, resource intensive, limited dedicated research on this area, and scaling up of the technology (Figure 12). The major reason for the weakness of cultured meat technology entrepreneurship is viewed as high technology cost, product not readily available in the market, sophisticated machineries and trained technologists' requirement, and consumers' acceptance for the new product compared to the conventional meat. Tzu (2023) stated that the SWOT analysis of alternative proteins indicated its weaknesses as taste & price, supply chain, scale-up challenges and schizophrenic branding. The high production cost hinders the market growth of the cultured meat.

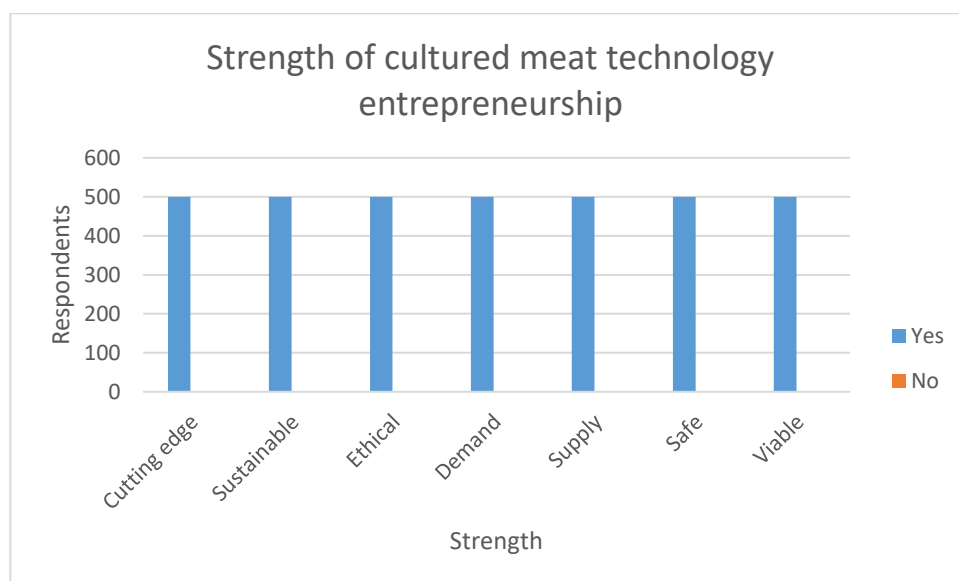


Figure 11. Respondents' belief for the strength of cultured meat technology entrepreneurship

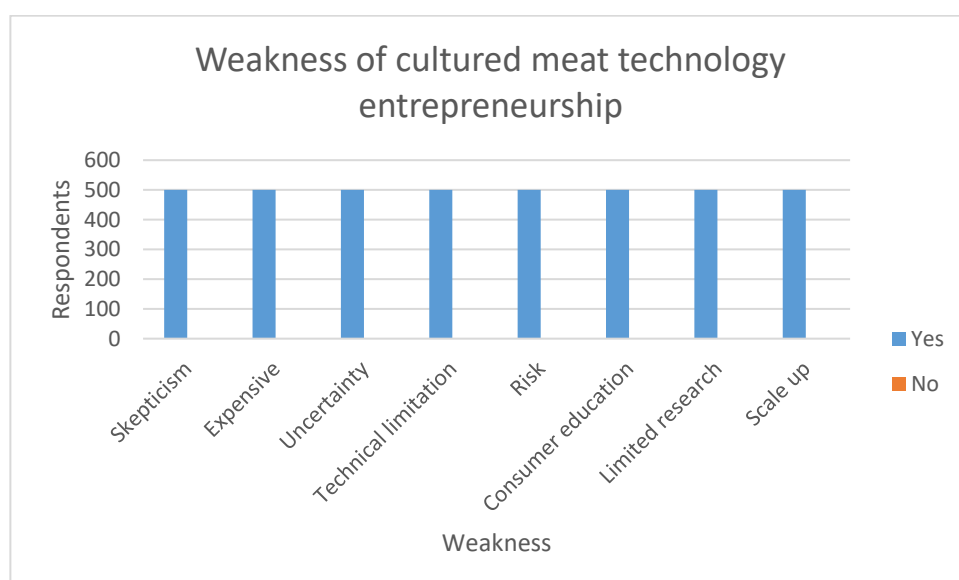


Figure 12. Respondents' belief for the weakness of cultured meat technology entrepreneurship

Respondents' Belief for the Opportunities of Cultured Meat Technology Entrepreneurship

The results indicated that the all the participants said yes to the opportunities existing for the cultured meat technology entrepreneurship. The various accepted opportunities in cultured meat technology entrepreneurship included innovative technology for transforming traditional meat production, can meet the ethical demand of animal welfare, offers environmentally sustainable meat production due to reduced greenhouse gas emission, reduced land usage and water consumption compared to traditional livestock farming, the lab can collaborate with farms and restaurants to expand the market for consumers and business, opportunity to attract consumers seeking high quality product and alternative to traditional meat, opportunity to tap the new market segment and capture the market share, growing population with increased demand for meat protein, and growing funding opportunity from govt. private and venture capitalists (Figure 13). There are several opportunities existing for the cultured meat entrepreneurship, the main aspects being, a novel technology, sustainable, environment friendly, funders readily available, government flagship program, huge alternative protein demand in the market, and a new market segment in meat sector etc. Tzu (2023) stated that the SWOT analysis of alternative proteins indicated its opportunities as additional funding, younger generation, attracting talent and product innovation. The global sector is going from strength to strength with cultured meat investments surpassing \$1 billion. Thus far, companies have raised a total of US \$1.3 billion in venture capital funding in the field globally until 2021. Cultured meat boasts 125 unique investors spanning 21 countries, with nearly half of these in the United States. The field of cultured meat involves numerous Intellectual Property Rights and researchers are filing patents for various technologies involved in the production of cultured meat (Pasudhan Praharee, 2023).

Respondents' Belief for the Threats of Cultured Meat Technology Entrepreneurship

The results of the current study revealed that all the participants in the survey completely agreed that the threats of cultured meat technology entrepreneurship include highly competitive market as many new companies will venture with similar offerings, overcoming skepticism and misconception about cultured meat among consumers, regulatory challenges and compliance on production, safety, and labelling, negative publicity on the safety concerns of the technology will be a barrier to the business, and inadequate supply of cell culture and growth media to produce cultured meat (Figure 14). The major threats to cultured meat technology entrepreneurship are consumers belief in conventional meat for its natural, and high nutritional quality, inadequate availability of raw materials for cultured meat production, government regulation, and product safety. Choudhary et al. (2023) stated that the meat scientists believed quick transition to cultured meat can be risky. Tzu (2023) stated that the SWOT analysis of alternative proteins indicated its threats as incumbent activity, irrational regulation, misinformation overload, and safety concerns. Competition from traditional meat producers, consumer perception and acceptance, regulatory hurdles, technological limitations, supply chain disruptions and market acceptance were identified as threats for cultured meat production facility business SWOT analysis (Finmodelslab, 2023).

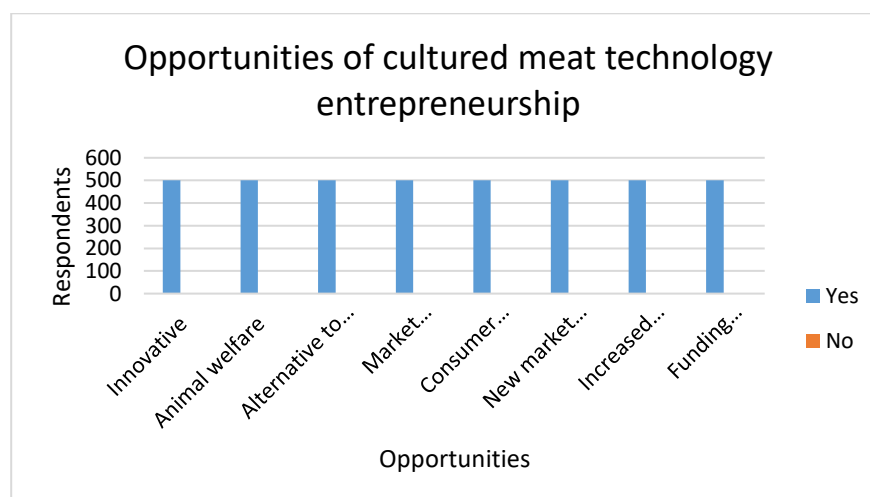


Fig 13: Respondents' belief for the opportunities of cultured meat technology entrepreneurship

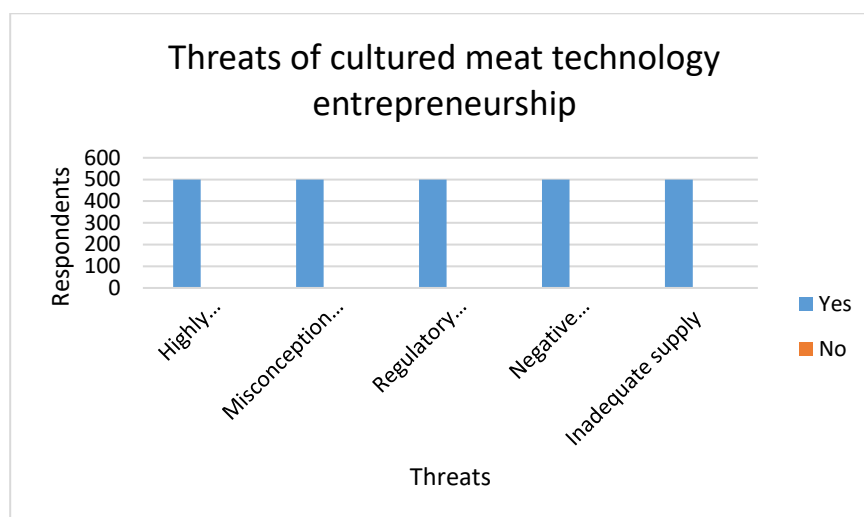


Fig 14: Respondents' belief for the opportunities of cultured meat technology entrepreneurship

Conclusion

The demographic analysis revealed the majority of the participants in the survey were males and the majority participants were in the age group of 25-45 years. All the respondents believed cultured meat as a disruptive technology and majority believed that would be successful enterprise in the future, but majority of the respondents were not willing for entrepreneurship in cultured meat. The SWOT analysis revealed that cutting-edge technology, closely resembling traditional meat, sustainable, environment friendly meat production, ethical, cruelty free, slaughter free meat production, product meets the demand for versatile culinary practices and consumer preferences, steady supply of raw material in the market, ensures clean, healthy and safe product, and highly viable product for a long-term stable market as the strength of the cultured meat technology. The weakness of cultured meat technology entrepreneurship were skepticism about consumer acceptance due to lab production, highly expensive product due to high production cost, uncertainty for getting regulatory approval and certification, technical limitation to reproduce same taste, texture and experience to traditional meat, risk of increased competition and saturation in the market as the source is same, consumer education and awareness is time consuming, resource intensive, limited dedicated research on this area, and scaling up of the technology. The opportunities for the cultured meat technology entrepreneurship included innovative technology for transforming traditional meat production, can meet the ethical demand of animal welfare, offers environmentally sustainable meat production due to reduced greenhouse gas emission, reduced land usage and water consumption compared to traditional livestock farming, the lab can collaborate with farms and restaurants to expand the market for consumers and business, opportunity to attract consumers seeking high quality product and alternative to traditional meat, opportunity to tap the new market segment and capture the market share, growing population with increased demand for meat protein, and growing funding opportunity from govt. private and venture capitalists. The threats of cultured meat technology entrepreneurship included highly competitive market as many new companies will venture with similar offerings, overcoming skepticism and misconception about cultured meat among consumers, regulatory challenges and compliance on production, safety, and labelling, negative publicity on the safety concerns of the technology will be a barrier to the business, and inadequate supply of cell culture and growth media to produce cultured meat.

Conflict of Interests

There is no conflict of interest.

Publisher Disclaimer

IJLR remains neutral concerning jurisdictional claims in published institutional affiliation.

References

1. Blueweaveconsulting., “India Lab-Grown Meat Market - By Type (Beef, Poultry, Pork, Seafood, Others); By Distribution Channel (Business-to-Business (B2B), Business-to-Consumer (B2C)); By Application (Nuggets, Burger Patties, Meatballs, Steak, Hot Dogs & Sausages), Trend Analysis, Competitive Landscape & Forecast, 2019–2029”, <https://www.blueweaveconsulting.com/report/india-lab-grown-meat-market>, July 2023. (Accessed on 15 June 2024)
2. Bryant, C., Barnett, J., “Consumer Acceptance of Cultured Meat: An Updated Review (2018–2020)”, *Applied Sciences*, Vol. 10, No: 15, 2020, pp. 5201.
3. Bryant, C., Szejda, K., Parekh, N., Deshpande, V., Tse, B., “A Survey of Consumer Perceptions of Plant-Based and Clean Meat in the USA, India, and China”, *Frontiers in Sustainable Food Systems*, Vol. 3, 2019, pp. 11.
4. Choudhary, F., Khandi, S.A., Aadil, R.M., Bekhit, A.E.A., Abdi, G., Bhat, Z.F., “What Do Meat Scientists Think About Cultured Meat?”, *Applied Food Research*, Vol. 3, No:2, 2023, pp. 100360.
5. Choudhary, F., Khandi, S.A., Aadil, R.M., Bekhit, A.E.A., Abdi, G., Bhat, Z.F., “Awareness And Acceptance Of Informed And Professional Consumers Of Jammu And Kashmir About Cultured Meat”, *Applied Food Research*, Vol.4, No:1, 2024, pp.100397.
6. Choudhury, D., Tseng, T.W., Swartz, E., “The Business of Cultured Meat”, *Trends in Biotechnology*, Vol.38, 2020, pp.573–577.
7. Dupont, J., Harms, T., Fiebelkorn, F., “Acceptance of cultured meat in Germany—application of an extended theory of planned behaviour”, *Foods*, Vol.11, 2022, pp.424.
8. FAO., “The Future Of Food And Agriculture: Alternative Pathways To 2050”, Food and Agriculture Organization (FAO), United Nations. Retrieved from <http://www.fao.org/3/CA1564EN/CA1564EN.pdf> (Accessed on 16 May 2024).
9. Finmodelslab, “Cultured Meat Production Facility Business SWOT Analysis”, 2023, <https://finmodelslab.com/products/cultured-meat-production-facility-swot-analysis>. (Accessed on 16 May 2024).
10. GFI., “Cultivated meat: key opportunities and recommendations for India”, Good Food Institute (GFI) India, 2023, <https://gfi-india.org/cultivated-meat-key-opportunities-and-recommendations-for-india>. (Accessed on 15 June, 2024).
11. Girish, P.S., Kacham, S., Praneetha, D.C., Rao, M., Bhaskar, V., Ramakrishna, C., Raja, B., “Perception towards Cultured Meat: A Survey of Potential Consumers in India”, *Journal of Meat Science*, Vol. 19, NO: 1, 2024, pp.20-27.
12. Hiranandani, A. “Plant-Based and Lab-Grown Meat: An Indian Opportunity”. Available online: <https://www.indianexpress.com/article/opinion/plant-based-and-lab-grown-meat-an-indian-opportunity-7260672/> (Accessed on 15 June 2024).
13. IDTechEx, “Plant-based and Cultured Meat 2020-2030 Technologies, markets and forecasts in novel meat replacements, 2020, <https://www.idtechex.com/en/research-report/plant-based-and-cultured-meat-2020-2030>. (Accessed on 15 June 2024).
14. Jha, A., “First lab-grown hamburger gets full marks for ‘mouth feel’”. *The Guardian*. Aug 6, 2013, <https://www.theguardian.com/science/2013/aug/05/world-first-synthetic-hamburger-mouth-feel>. (Accessed on 16 May 2024).
15. Joe, T., “Eat Just Serves Cultured Meat to Diners at 1880 Restaurant Singapore in a World First”. Available online: <https://www.greenqueen.com.hk/eat-just-serves-cultured-meat-to-diners-at-1880-restaurant-singapore-in-a-world-first/> (Accessed on 15 June 2024).
16. Kamalapuram, S.K., Handral, H., Choudhury, D., “Cultured Meat Prospects for a Billion!”, *Foods*, Vol.10, 2021, pp. 2922.
17. Kotlik, J. W., Higgins, C. C., “Organizational research: determining appropriate sample size in survey research appropriate sample size in survey research”. *Information Technology Learning and Performance Journal*, Vol.19, 2001, pp. 43–50.
18. Kumar, P., Sharma, N., Sharma, S., Mehta, N., Verma, A.K., Chemmalar, S., Sazili, A.Q., “In-vitro meat: a promising solution for sustainability of meat sector”, *Journal of Animal Science and Technology*, Vol.63, No:4, 2021, pp.693-724.
19. Lin-Hi, N., Reimer, M., Schäfer, K., Böttcher, J., “Consumer acceptance of cultured meat: an empirical analysis of the role of organizational factors”, *Journal of Business Economics*, Vol. 93, 2023, pp.707–746.
20. Martyn-Hemphill, R., “Where Are the World’s First ‘Lab Burger’ Growers Now? Enlarging Their Series B Raise”. Available online: <https://www.agfundernews.com/where-are-the-worlds-first-lab-burger-growers-now-enlarging-their-series-b-raise.html> (Accessed on 15 June 2024).
21. Meticulous Business Plans, “Lab Grown/Cultured Meat Production Business”, 2020,

- <https://meticulousplans.com/product/lab-grown-cultured-meat-production-business>. (Accessed on 15 June 2024).
22. Miller, R.K., “A 2020 synopsis of the cell-cultured animal industry”, *Animal Frontiers*, Vol.10, 2020, pp.64–72.
 23. NBRIC., “NBRIC—Announcement of Richcore Life Sciences”, Available online: <http://www.nbric.in/announcement/announcement-of-richcore-life-sciences/> (Accessed on 15 June 2024).
 24. Neo, P., “Affordable Lab-Grown Meat: India Looks to Become Global Cell-Based Meat Hub”. Available online: <https://www.foodnavigator-asia.com/Article/2019/05/10/Affordable-lab-grown-meat-India-looks-to-become-global-cell-based-meat-hub> (Accessed on 15 June 2024).
 25. Next Move Strategy Consulting., Cultured meat market by source, September 2023, <https://www.nextmsc.com/report/cultured-meat-market>. (Accessed on 15 June 2024).
 26. Pashudhan Praharee., “Cultured Meat And Its Current Trend”, August 15, 2023, <https://www.pashudhanpraharee.com/cultured-meat-and-its-current-trend/> (Accessed on 19 June, 2024).
 27. Regmi, S., Naharki, K., “A SWOT Analysis Of Agribusiness Entrepreneurship In Nepal”, *Food & Agribusiness Management*, Vol.1, No:2, 2020, pp. 83-88.
 28. Rubio, N.R., Xiang, N., Kaplan, D.L., “Plant-based and cell-based approaches to meat production”, *Natural Communications*, Vol.11, 2020, pp.6276.
 29. Sadhnani, S., Basoya, S., Bhat, A.V., Rocque, N., “Building An Ecosystem For Cultivated Meat In India”, December 2021, CII & GFI India
 30. Shane, S., Venkataraman, S., “The Promise of Entrepreneurship as A Field Of Research”, *The Academy of Management Review*, Vol. 25, No: 1, 2000, pp. 212-226.
 31. Skyquest., Lab Grown Meat Market Size, Share, Growth Analysis, By Product(business-to-business and business-to-consumer), By Region - Industry Forecast 2024-2031, February 2024, <https://www.skyquestt.com/report/lab-grown-meat-market>. (Accessed on 15 June 2024)
 32. SphericalInsights., US Cultured Meat Market Size, Share, and COVID-19 Impact Analysis, By Source (Poultry, Beef, Seafood, Pork, Duck), By End Use (Nuggets, Burgers, Meatballs, Sausages, Hot Dogs), and US Cultured Meat Market Insights Forecasts 2023 – 2033, Mar 2024, <https://www.sphericalinsights.com/reports/us-cultured-meat-market>. (Accessed on 15 June 2024).
 33. Swartz, E., “Meeting the Needs of the Cell-Based Meat Industry”, Available online: <https://www.aiche.org/resources/publications/cep/2019/october/meeting-needs-cell-based-meat-industry> (Accessed on 15 June 2024).
 34. Tzu., S., “A SWOT Analysis Of Alternative Proteins”, July 24, 2023, <https://www.goodsignal.com/p/a-swot-analysis-of-alternative-proteins>. (Accessed on 16 May 2024).
 35. Verified Market Research, “Global Cultured Meat Market Size By Source (Poultry, Beef), By End-Use (Burgers, Hot Dogs), By Geographic Scope And Forecast, March 2024, <https://www.verifiedmarketresearch.com/product/cultured-meat-market/> (Accessed on 16 May 2024).
 36. Waltz, E., “Club-Goers Take First Bites of Lab-Made Chicken”, Available online: <https://www.nature.com/articles/s41587-021-00855-1> (Accessed on 15 June 2024).
 37. Waltz, E., “Lab-Made Chicken Reaches Select Diners in Singapore”. Available online: <https://www.scientificamerican.com/article/lab-made-chicken-reaches-select-diners-in-singapore/> (Accessed on 15 June 2024).
 38. Zhang, G., Zhao, X., Li, X., Du, G., Zhou, J., Chen, J., “Challenges and possibilities for bio-manufacturing cultured meat”, *Trends in Food Science and Technology*, Vol.97, 2020, pp. 443–450.
