

Thesis Summary

論文の内容の要旨

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論文題目

Defining Craft Chocolate and Specialty Cacao: Standards, Trade, Equity, and Sustainable Development

(クラフトチョコレートおよびスペシャリティカカオを定義する：標準、取引、公平性、持続可能な開発)

Craft chocolate is an artisan chocolate product, made from specialty cacao beans. This industry is made up of many small businesses, acclaimed for actively progressing farmer welfare and environmental resource conservation standards, and is well-positioned to propel the global chocolate industry to be more accountable, sustainable, transparent, and ethical. However, research that specifically investigates craft chocolate and specialty cacao is scarce and this industry faces poor coherency, definition, and standardization.

This research defines craft chocolate and specialty cacao with respect to industry standards, trade practices, equity priorities, and roles in sustainable development, through an industry assessment on specialty cacao trading and prices, providing a timely systems-level set of definitions to quantify quality parameters, and identifying primary pathways found to define characteristics for specialty cacao. In addition, craft chocolate maker priorities for quality standards, direct trade, farmer equity, and sustainable development are identified to reveal distinct sourcing methods and geographies for this industry. This research also validated low-investment opportunities to improve smallholder farmer access to specialty cacao markets through key factors that farmers can leverage to meet specialty cacao quality market standards. Lastly, this research includes a discussion on disruptions due to the COVID-19 pandemic exposing the unique vulnerabilities of craft chocolate and specialty cacao industry.

クラフトチョコレートは、スペシャリティカカオ豆を原料にして職人技術で作られたチョコレート製品である。この業界は多くの中小企業で構成されており、カカオ農家の福祉と環境資源保護の基準を高める積極的な活動でも高く評価され、世界のチョコレート産業を、持続可能で、説明責任と透明性のある、かつ倫理的なものへと前進させる存在でもある。しかしながら、クラフトチョコレートとスペシャリティカカオを具体的に調査する研究は少なく、この業界は、一貫性、定義、標準化が不十分な現実に直面している。

この研究では、スペシャリティカカオの取引方法やカカオ生産者への支払い価格など業界の評価を鑑み、クラフトチョコレートとスペシャリティカカオ業界の標準、取引慣行、公平性、持続可能な開発における役割を定義する。その結果、品質のパラメーターを定量化するためのタイムリーなシステムレベルでの定義を提供し、スペシャリティカカオの特性を明らかにする主な経路を見出した。さらに、この業界における調達方法と生産地域を明確にするために、品質基準、直接取引、農家の公平性、持続可能な開発において、クラフトチョコレートメーカーにとっての優先事項が認知されている。この研究はまた、スペシャリティカカオの市場品質基準を満たすために農家が活用できる最優先事項を認知し、小規模農家のスペシャリティカカオ市場へのアクセスを改善するための低投資の機会を有効なものとした。最後に、この研究には、クラフトチョコレートとスペシャリティカカオ産業の特有の脆弱性を明らかにする COVID-19 パンデミックによる混乱についての議論も含まれる。

Theory

Specialty cacao and craft chocolate is presented as an alternative model to traditional methods of producing and sourcing cacao or making chocolate. Through the use of direct sourcing strategies and prioritizing farmer welfare and environmental conservation, proponents of specialty cacao and craft chocolate have identified the importance of transparency, relationships between the consumers and the chocolate, and the role of every actor in the supply chain. Despite the potential for cacao as an ideal crop for sustainable agroforestry systems, the chocolate industry as a whole has been recognized for facilitating unsustainable production practices as well as ethical human welfare concerns for the millions of smallholder living under the poverty line, without access to alternative income strategies. Craft chocolate and specialty cacao have been touted as well-positioned to move the chocolate industry in the direction of more ethical sourcing strategies, improved environmental production practices, and higher quality products targeted to a growing consumer base seeking more sustainable and socially responsible products. However, this assertion of higher ethical and environmental standards has not been established through research, and such industry identifiers or environmental and social buzzwords have been easily adopted as marketing terms by groups that do not incorporate the same values into their business models. Additionally, prior research on quality analysis and postharvest production have not considered the specific analytical and logistic needs of specialty cacao. The poor consistency of quality quantifiers, standardization, and cohesion have been problematic for both advancements in farmer accessibility to specialty cacao markets and the long term resilience of small craft chocolate businesses. This research investigates the current definitions, gaps, trajectory of this industry.

Research Questions

What are the significant differentiators that distinguish the specialty cacao and craft chocolate industry?
In what ways can this industry support the sustainable development of cacao producing regions?
What is current industry trajectory and what practices are commonly being used?

Research Objectives

Identify the current definitions and gaps in knowledge for specialty cacao and craft chocolate.
Measure the parameters for sourcing and prices paid to farmers for specialty cacao.
Understand the industry-specific parameters for quality and identify gaps.
Demonstrate industry trajectory and challenges.

Research Findings

The significant differentiators for specialty cacao were identified through five primary pathways: (1) quality, (2) genetics, (3) origin, (4) certification, and (5) direct trade. In addition, landed cost price for conventionally grown cacao offered by specialty cacao buyers from 2015-2018 were, on average, 140% higher than the world market price for commodity cacao, and 205% more than the ones of fair trade cacao, not inclusive of fair trade premiums. The average farm gate price paid per kg of conventionally grown cacao by craft chocolate makers and specialty cacao buyers were, on average, 95% more than average producer price for West Africa, Brazil, and Ecuador markets between 2014 and 2019.

In stark contrast to commodity cacao acquisition strategies, 38% of craft chocolate makers find and contract individual farmers for cacao acquisition. In addition, a majority of chocolate makers (60%) believe routinely used quality assessment techniques do not meet the needs of bean to bar chocolate makers or could use improvement. Additionally, specialty cacao buyers primarily source beans from South and Central America (over 65%), in direct contrast to commodity cacao systems, which predominantly source from West Africa.

Investigating pulp quality characteristics under postharvest treatment conditions from the perspective of specialty cacao and conducting farmer interviews, measurements of disease, Brix, pH, pod weight, and seed with pulp weight in the pre-fermentation, early postharvest processing stage revealed that pod storage treatments significantly influence pulp quality. Lastly, the fragility of the craft chocolate has been recognized by industry members for years and the global crisis has further highlighted the need for investments in farmer relief, improved access to technology for business needs, and farmer empowerment for negotiations with buyers to mitigate risks.

Discussion

As global demand for chocolate continues to rise, the share of the revenue for cacao farmers continues to fall. Farmers, often living under the poverty line, also bear the risks of producing a commodity subject to extreme price volatility and seasonal fluctuation. Expansion of cacao frontiers is also destructive and contributes to the loss of biodiversity habitats. The significant differentiators that allow specialty cacao and craft chocolate to support the sustainable development of cacao producing regions include quality, genetics, origin, direct trade, and certification. Craft chocolate producers prioritize fine flavor notes, and product diversity, which can be quantified through the five pathways and promote business models that allow sourcing materials that contribute to better living conditions for farmers and addressing environmental impacts at the same time.

Specialty chocolate, also known as fine, craft, flavor, or premium chocolate, holds a small portion of the total chocolate market but is well recognized for a focus on high flavor attributes, quality, and origin specificity. The current practices for industry members include participating in direct trade acquisition strategies and offering significant price premiums. Industry members also agree on the need to establish a more inclusive quality assessment technique and prioritize farmer welfare. Unlike commodity cacao products, specialty cacao systems present substantial opportunity to refine identifiable differentiators that justify the premium pricing and educate buyers on value throughout the supply chain. Farmers can achieve significant changes in quality through easily adopted postharvest practices and improved quality assessment protocols.

The demographics of Japanese craft chocolate businesses are unique in that many small businesses make up the total market share, which is starkly different from the few industrial chocolate production companies commanding global market share since the late 1980s. Through specialized distribution channels that cater to a targeted consumer base, diverse business proprietorship, and distinct pricing strategies and quality requirements, this industry certainly employs organizational ambidexterity from an emerging market context.

Specialty cacao buyers have done well to encourage transparency and accountability systems, including publishing annual sourcing reports and which describe on-farm production practices, highlight farmer profiles, and divulge prices paid to farmers for specialty cacao. Due to the nature of direct sourcing strategies, these personal relationships have facilitated communication channels, including on health messaging to farmers and through farmer networks such as grower cooperatives and allow for more flexibility when forming buying contracts.

Craft chocolate makers impart a strong focus on craftsmanship, social responsibility, and transparency, which has highlighted the negative social and environmental impacts of chocolate production and propelled the industry to more urgently address these challenges. In an era where government support, public technical assistance, and financial resources are spread so thin, it is imperative that businesses continue to implement policies that support sustainability goals. The craft chocolate and specialty cacao industry openly claims to allocate resources that address critical issues within the industry such as deforestation, illegal and child labor, land degradation, and ethical farmer welfare, and as such, merits special support; if this nascent specialty sector can survive the pandemic, it can continue to model possibilities for ethical chocolate.

These practices propel the current trajectory of the industry as a whole, moving towards more ethical sourcing strategies and superior quality products. Buyers also often practice individual assessments, limited to farming entities they contract, and inclusive conversations about quality standards with farmers could elevate their bargaining power.

This emerging industry has the potential to support the future of the chocolate industry as well as the sustainable development for cacao-producing regions through environmental, social, economic, and sensory excellence.