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Research on Generative AI-Driven Cross-Cultural Financial Product Customization and Marketing Model Innovation

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Abstract: Against the backdrop of an accelerating once-in-a-century global transformation and the profound development of the digital economy, generative artificial intelligence, as a new generation of general-purpose technology, has emerged as a critical pathway to overcoming cultural barriers and demand mismatches in cross-cultural finance. This paper focuses on the application of generative AI in customized cross-cultural financial products and innovative global marketing models. It begins by systematically outlining the key technological components, evolutionary stages, and practical scenarios of generative AI in finance to clarify the inherent value of its technological foundation. Subsequently, drawing upon theories such as cross-cultural communication and financial product design, it constructs a three-dimensional framework for generative AI-driven customization of cross-cultural financial products: in-depth cultural demand identification, automated generation of product elements, and real-time optimization of customization effects. The validity of this framework in multi-ethnic cultural contexts is demonstrated through case studies of Fudian Bank's Jinludai and Jinyidai products. The paper then analyzes how generative AI innovatively empowers cross-cultural financial marketing models across four dimensions: demand insight, content production, channel operations, and effect feedback, revealing its mechanism for reconstructing marketing communication pathways. Finally, it summarizes the advantages and challenges of the cross-cultural financial product customization model. Advantages include precise alignment with cultural needs, strengthened brand identity, and reduced compliance risks, while challenges encompass cultural cognitive biases, technological prejudices, and global coordination difficulties. The paper concludes by envisioning future development directions where products achieve deeper cultural value integration and services evolve toward seamless global connectivity amid technological advancements. This research provides theoretical support for the deep integration of generative artificial intelligence with cross-cultural financial services, contributing to the construction of an open, inclusive, and intelligent global financial ecosystem.

Keywords: Generative Artificial Intelligence; Cross-Cultural Finance; Product Customization; Global Marketing; Model Innovation

1. Introduction

"The once-in-a-century transformation of the world is accelerating," and the industrial revolution led by technological advancements is the core driving force behind this transformation [1]. The deep integration of cutting-edge technologies such as mobile internet, supercomputing, deep learning, and big data has given rise to a new generation of general technologies represented by generative artificial intelligence [2]. As a foundational technology for informatization, digitization, and intelligent transformation, generative artificial intelligence

holds significant implications for enhancing a nation's strategic position and international competitiveness. It has reshaped humanity's cognitive paradigms while exerting profound influence on the evolutionary trajectory of scientific and industrial systems through its remarkable spillover and leading-goose effects. Having emerged as a pivotal strategic element driving China's high-quality economic development, it now plays an indispensable role in contemporary global economic growth. At the current stage, China's economy has transitioned from a phase of high-speed growth to a phase of high-quality development. "Accelerating the development of the digital economy, promoting the deep integration of the digital economy and the real economy, and building internationally competitive digital industry clusters" [3]. High-quality development of the digital economy refers to leveraging digital technologies to deepen digital transformation, optimize industrial structures, enhance innovation capabilities, and foster the integrated development of digital technologies with the real economy. This process involves the comprehensive application of digital technologies to achieve intelligent, green, and sustainable economic growth, thereby improving the quality and competitiveness of the overall economic system. Although the digital economy presents significant opportunities for societal development, the challenge lies in how to effectively unleash its potential.

In the financial sector, the application potential of generative artificial intelligence is particularly prominent, with its powerful data processing capabilities and intelligent decision-making support functions reshaping traditional financial service models. With the continuous optimization of algorithmic models and the enhancement of computing power, generative artificial intelligence is gradually transitioning from theoretical research to commercial applications, emerging as a pivotal technological force driving industrial upgrading. The future holds vast potential for the development and application of generative AI. Leveraging multilingual real-time translation models (such as GPT-4's multilingual dialogue capabilities) [4], cultural semantic graph construction technologies, and dynamic demand prediction algorithms [5-7], generative AI can precisely capture cultural customs [8],

consumption preferences, and financial regulatory disparities across different countries and regions [9-10]. This provides technical support for the customization of cross-cultural financial products. To lower the investment threshold for emerging markets and adjust the fee structure of wealth management products, generative AI can leverage multimodal marketing content creation. This includes producing Spanish short video marketing materials tailored for the Latin American market, designing visually appealing graphic posters that cater to East Asian aesthetic preferences, and enabling predictive user behavior recommendations. Such approaches reconstruct the communication pathways and engagement logic of global financial marketing, achieving a profound adaptation to cultural contexts. By harnessing generative AI alongside localized expertise, this strategy delivers a disruptive impact on traditional cross-border financial services and marketing models, which are often characterized by highly homogenized products.

Current research in the intersection of cross-cultural finance and artificial intelligence exhibits significant limitations, with most studies narrowly focusing on financial product design within single markets. Investigations into internet insurance product innovation for the Chinese market have remained superficial, primarily applying generic marketing techniques to construct user profiles through AI technologies. In terms of research depth and breadth, existing achievements have yet to achieve comprehensive integration of generative artificial intelligence's core application dimensions in cross-cultural scenarios. First, regarding the customization of financial product elements, there is a notable lack of systematic analysis concerning the dynamic customization logic for key components such as fee structures, service terms, and maturity settings. This logic necessitates automated adjustments to the yield calculation methods of wealth management products based on interest rate policies across various countries, a technical application scenario that remains insufficiently explored. Second, in the domain of multicultural user communication, research on strategy optimization is limited: emotional communication content requires enhancement for high-context cultural regions, while data-driven information presentation should be prioritized in low-context cultural areas. This

gap has led to the absence of a communication paradigm tailored to diverse cultural characteristics. Third, within the field of global marketing resource allocation, there exists a research gap regarding collaborative mechanisms for integrating traffic across regional social media platforms to facilitate precise distribution of marketing content. This deficiency obstructs the effective implementation of generative AI in global financial marketing scenarios.

Unlike traditional artificial intelligence confined to single-function applications, this research focuses on the groundbreaking application of generative AI in cross-cultural financial scenarios, striving to analyze its pathways for resolving two core dilemmas: "cultural barriers" and "demand mismatch". Here, "cultural barriers" manifest as insufficient market acceptance of financial products due to cultural cognitive differences, while "demand mismatch" reflects the maladaptation issues arising from simply replicating mature-market financial products in emerging markets. Building upon this foundation, the study investigates how generative artificial intelligence can facilitate the transition of financial product development from localized adaptation to culturally native customization, thereby deeply embedding the cultural characteristics and financial needs of target markets. Simultaneously, it aims to achieve an innovative transformation of global marketing models from one-way dissemination to interactive cultural resonance. The research on generative AI-driven cross-cultural financial product customization and global marketing model innovation addresses both the opportunities and challenges posed by technological transformation, while aligning with the developmental trends of economic globalization. This study explores the pathways for deep integration between artificial intelligence technology and financial services, providing new insights for the innovative advancement of the financial industry. In the future, as technological advancements continue and applications deepen, related studies will evolve, offering theoretical support and practical guidance for constructing a more open, inclusive, and intelligent global financial ecosystem.

2. Theoretical Foundations of Generative Artificial Intelligence

2.1 Key Technical Components of Generative Artificial Intelligence

Artificial intelligence can be categorized by purpose into decision-making AI [11] and generative AI [12]. Decision-making AI focuses on data insights and decision-making, with applications in automated decision-making fields such as autonomous driving, intelligent recommendations, and facial recognition. Generative AI, on the other hand, leverages model training to produce novel and meaningful content, such as text, images, code, or videos. Content automatically generated by AI technology rather than created by humans is referred to as AI-generated content (AIGC), while corresponding human-created content is termed HGC. The key technologies of generative artificial intelligence include Generative Adversarial Networks [13], Variational Autoencoders [14], diffusion models, reinforcement learning [15], and Transformer [16], among others. Generative Adversarial Networks generate data that closely resembles real data through adversarial training between the generator and discriminator, and have been widely applied in artistic creation and image generation. The variational autoencoder maps input data to a low-dimensional space through an encoder and then generates new data via a decoder. Diffusion models excel in image generation tasks by progressively adding noise to data and learning the reverse denoising process to produce high-resolution images. Reinforcement learning optimizes generation strategies through trial-and-error learning and environmental feedback signals, evaluating the quality of generated content via environmental interactions to adjust strategies and enhance the diversity and adaptability of outputs. Transformer, with its self-attention mechanism, efficiently captures and generates contextual information in sequential data, laying the foundation for generative AI's success in text generation tasks. Moreover, the parallel computing capability of Transformer can significantly enhance training efficiency, making it feasible to pre-train and fine-tune these models on large-scale datasets. This advancement drives the application and development of generative AI across multiple domains including text generation, question-answering systems, and machine translation.

A Large Language Model (LLM) refers to a

language model containing hundreds of billions or even more parameters. Through training on massive corpora, it can accomplish various natural language processing tasks. Before the advent of Transformer models, Recurrent Neural Networks (RNNs) were widely used in natural language text processing. However, these relatively outdated model architectures suffered from slow training speeds on long sequence data and an inability to perform parallel processing. The Transformer model can effectively utilize computational resources for parallel training. Its full attention architecture enables easier capture of global dependencies, creating favorable conditions for building large-scale language models and serving as the foundation for numerous tasks in the NLP field. Architectures and approaches based on the Transformer model are diverse and abundant. Bidirectional Encoder Representations from Transformers (BERT) is a bidirectional model constructed using the Transformer encoder module, while Generative Pretrained Transformer (GPT) is a unidirectional model built upon the Transformer decoder module. Large language models can answer complex questions and perform challenging creative tasks, such as writing scripts, solving intricate mathematical problems, generating code for specific tasks, creating descriptions from images, etc. They can also produce random text from advanced instructions, combine two or more texts, create variations of existing texts, while maintaining semantic consistency in the generated content.

2.2 The Evolutionary Stages of Generative Artificial Intelligence

The technological evolution of generative artificial intelligence encompasses three distinct phases. The initial origin phase emerged during the 1950s and 1960s, primarily relying on rule-driven approaches that utilized predefined sets of rules for content generation. This was followed by an early exploration phase, during which generative technologies gradually developed upon machine learning foundations. Researchers began employing statistical methods to generate new types of data, including text and images. Representative techniques from this phase include Hidden Markov Models and Gaussian Mixture Models, among others. However, these methods often lacked coherence and creativity in generating textual and image content. Subsequently, as the

field matured and deep learning algorithms advanced rapidly, the performance of generative models improved significantly. Technologies such as Generative Adversarial Networks, Variational Autoencoders, and Diffusion Models emerged successively, strongly propelling the development of generative techniques. These three types of technologies are widely applied across multiple domains, including text, image, and audio-video generation. Although generative models have followed distinct developmental paths in different fields, they ultimately converge at a common intersection—the Transformer architecture. First introduced for natural language processing (NLP) tasks in 2017, the Transformer has since become the foundational framework for numerous generative models across various disciplines. Building upon these technological advancements, recent years have witnessed the emergence of multimodal generative models such as DALL-E and CLIP, alongside large language models like ChatGPT, which have driven significant progress in generative AI. These innovations have markedly enhanced both the quality of generated content and user experience. Sora integrates the technological advantages of the ChatGPT series, enabling it to simulate physical interactions and dynamic changes in the real world, thereby generating complex video scenes. This represents a significant breakthrough in generative artificial intelligence. In the future, intelligent agents derived from large models will be capable of understanding and responding to users' natural language instructions through natural language processing technology. By continuously learning from user interaction data, these agents will improve their service capabilities. Through dynamic interactive dialogues, task automation, and intelligent recommendations, they will effectively align with users' complex needs.

2.3 Practical Application Scenarios of Generative AI

Since 2024, the application of large AI models in the financial industry has accelerated with expanding scenarios, bringing profound transformations to the sector. These changes are reflected in three aspects and six specific scenarios [17-19]. First, technology penetration has steadily increased. In 2023, the adoption rate of financial large models was below 40%, primarily applied in non-core business areas

such as customer service Q&A, office assistance, and information summarization, where the industry mainly leveraged the language processing capabilities of large models to enhance operational efficiency. Since 2024, the penetration rate of large models has risen significantly to approximately 50%, with growing application shares in core business scenarios like investment research and risk control. Second, model capabilities have achieved leapfrog advancements.

Currently, there are two primary technical approaches for applying large AI models in the financial sector: "general-purpose models combined with financial data training" and "financial vertical large models." In 2023, general-purpose large models dominated the market due to their robust language understanding and generation capabilities, with parameter scales exceeding hundreds of billions. In contrast, financial vertical large models typically had parameter counts in the tens of billions, which rendered them insufficient for addressing the complex demands of core financial business scenarios. By 2024, financial vertical large models advanced rapidly,

exemplified by the Industrial and Commercial Bank of China's self-developed large model and Du Xiaoman's "Xuanyuan" financial large model, both of which successfully surpassed the hundred-billion parameter threshold. Additionally, the enhancement of multimodal processing capabilities has injected new vitality into the applications of financial large models. These models can now not only process text but also integrate multi-source data such as images and audio, thereby creating greater value in scenarios such as intelligent investment advisory and risk monitoring. Furthermore, economic benefits have significantly improved. In terms of market size, China's financial vertical large models experienced explosive growth in 2024, increasing from 1.59 billion yuan in 2023 to 4.27 billion yuan in 2024, which represents a remarkable annual growth rate of 169%. Financial institutions continue to enhance their recognition and investment in large model technology. Regarding cost efficiency, model invocation costs are consistently decreasing. Table 1 presents the current technological roadmap for financial large models.

Table 1. Comparison of Technical Approaches for Large AI Models in the Financial Sector

Classification	General-purpose language model	Financial Vertical Large Model
Advantages	Capable of handling diverse tasks including text generation, translation, and question-answering; Requires no domain-specific investment advice or risk management; Widely applicable with specific training data.	Specialising in financial data, we deliver precise investment advice and risk management, excelling in stock analysis and risk management.
Disadvantage	May lack sufficient depth in specific domains, resulting in limited analytical precision; Requires extended training periods.	It can only handle finance-related tasks and cannot be extended to other domains. It requires substantial financial data, which may result in poor generalisation capabilities in non-financial fields.
Competitive Landscape Model	DeepSeek is poised to surpass GPT-4 <GPT series; Wenxin Yiyan; DeepSeek; Doubao, etc.	Domestic products gradually making their debut: FinGPT; Tencent Cloud Financial Large Model; Ant Financial Large Model, etc.

From the perspective of application scenarios, financial product customization and design represents one of the key directions for implementing generative AI in the financial sector. This scenario leverages in-depth analysis of customer needs and regional regulatory characteristics to achieve automated generation of personalized product solutions. Specifically, it enables the customization of fund portfolios that comply with target market regulations for cross-border investors, the design of credit products with flexible repayment cycles for

small and micro enterprises, and the simultaneous generation of compliance documents such as product prospectuses and risk disclosure statements. Ultimately, this approach significantly shortens product development cycles. The second is the intelligent customer service scenario. Leveraging multimodal interaction, this scenario provides 24/7 uninterrupted financial services. It can efficiently address basic inquiries such as account queries and transfer operations through natural language dialogues, generate customized

wealth management recommendations based on customers' financial status and preferences, and even simulate human financial advisors for complex business communications-thereby enhancing service responsiveness and customer experience. The third is the financial risk prevention and control scenario. Relying on generative AI technology, this scenario analyzes massive transaction data, public sentiment information, and other multidimensional data to generate risk early warning reports. From a practical perspective, it can identify abnormal transaction patterns and generate corresponding risk analysis reports, as well as produce credit assessment reports based on corporate financial data and industry trends. This provides robust support for financial institutions in accurately identifying credit risks, market risks, and operational risks. The fourth scenario involves marketing content generation and precision targeting, which produces tailored marketing materials based on the characteristics of different customer segments. For instance, it drafts private banking service proposals for high-net-worth clients and optimizes content distribution channels by leveraging user behavioral data, ultimately enhancing marketing conversion rates. The fifth scenario pertains to financial compliance and document processing, where it automatically generates regulatory-compliant reports, conducts intelligent reviews of existing financial contracts and agreements to produce compliance amendment suggestions, and translates complex financial regulatory texts into accessible internal implementation guidelines for institutions, effectively reducing compliance operational costs. The sixth scenario focuses on market analysis and investment research support, integrating multi-source information such as global financial market data, industry research reports, and news updates to generate multidimensional market analysis reports. These reports encompass stock market trend analysis, commodity price forecasting, and other content, providing data support for investment managers' decision-making. Additionally, it can simulate various market scenarios to generate portfolio stress test results, assisting in the optimization of investment strategies.

2.4 Theory of Cross-Cultural Financial Product Customization

Cross-cultural financial product customization is not merely "localization adjustment," but rather a systematic design based on multidisciplinary theories, requiring cross-cultural communication, financial product design, and cross-cultural technology enablement [20]. The technological enablement logic of generative AI represents a shift from "passive adaptation" to "active customization." The traditional cross-cultural financial product customization model follows a core process of local team research, headquarters design, and regional adjustments, which has significant limitations. Firstly, localized research relies on manual execution and is constrained by sample size, geographical coverage, and research cycles, making it difficult to comprehensively capture the cultural demand characteristics of target markets. Secondly, the design phase at headquarters necessitates the integration of multi-regional research data, which is hindered by delays and discrepancies in information transmission. This results in a disconnect between product design and actual market demands. Thirdly, the regional adaptation stage often involves superficial modifications to standardized products, which fail to thoroughly align with the cultural perceptions and regulatory requirements of various markets. Consequently, this leads to prolonged cycles, elevated costs, and delayed responses to demand, complicating the need for rapid iteration of financial products in a globalized context. Generative AI, with its technical advantages in multimodal data processing, dynamic model construction, and real-time feedback optimization, facilitates the transformation of cross-cultural financial product customization through its technological logic.

2.4.1 In-depth identification of cultural needs

Generative artificial intelligence leverages multimodal large models for cultural demand identification. These models can simultaneously process diverse data types including text, images, and audio, covering multiple data sources such as financial advertising content, user online reviews, regulatory policy documents, and social media interactions in target markets. Through semantic analysis, sentiment mining, and feature extraction technologies, they construct knowledge graphs encompassing cultural preferences, risk perceptions, consumption habits, and product preferences. Compared to traditional manual research, multimodal large models can transcend

geographical and sample limitations to achieve panoramic capture of cultural demands in target markets [21]. Taking the demand identification practices in India's financial market as an example, generative AI can accurately identify the prominent social attributes sought by young user groups in financial products. This is achieved by analyzing user discussions on local mainstream social platforms, marketing materials from financial institutions, and consumer protection documents issued by regulatory authorities. The core demand characteristics are specifically manifested as a preference for obtaining value-added financial services through social interactions. Such demands can be directly translated into product design elements; for instance, by incorporating user invitation mechanisms into the design of wealth management products, thereby leveraging social propagation effects to enhance product market penetration rates.

2.4.2 Automated generation of product elements
Through an in-depth identification of cultural needs, generative artificial intelligence employs the "Cultural Needs-Product Elements" mapping model as its core framework to facilitate end-to-end automated generation of financial product components. This mapping model leverages machine learning algorithms to analyze the correlations between demand characteristics and product elements across diverse cultural contexts. It dissects financial products into essential modules, including core functionalities, fee structures, and compliance documentation, automatically aligning design parameters for each module with the cultural demand features of target markets. In terms of core functionality design, it can generate differentiated features that cater to cultural preferences in various markets. For instance, when targeting East Asian markets that prioritize family wealth management, it develops comprehensive financial planning functions that encompass integrated family asset management and intergenerational inheritance planning. In terms of fee structure calculation, dynamically adjust the minimum investment amount, profit calculation method, and fee deduction standards by incorporating the income levels, interest rate policies, and consumption capacity of the target market. For example, lower the investment threshold for wealth management products in emerging markets and adopt profit settlement cycles that better align with local users'

perceptions. Regarding compliance documentation, generative AI can leverage natural language processing technology to analyze the financial regulatory policies of target markets, translating regulatory requirements into product compliance clauses. This ensures product compliance while avoiding omissions and deviations caused by manual drafting.

2.4.3 Real-time optimization of customized effects
Generative artificial intelligence establishes a "customization-feedback-optimization" closed-loop mechanism through reinforcement learning algorithms to achieve real-time optimization of cross-cultural financial product customization. After products are launched in target markets, the AI system can collect user behavior data and market feedback in real time. This data encompasses dimensions such as purchase conversion rates, product holding periods, surrender rates, satisfaction scores, and online review content. Leveraging data mining technologies, it analyzes cultural adaptability shortcomings in products and precisely identifies key areas requiring optimization. When data indicates that users in a specific region exhibit comprehension deviations regarding product term descriptions, leading to delayed purchasing decisions, generative AI can automatically adjust the presentation of terms. This includes converting abstract annualized yield calculations into monthly or quarterly returns denominated in local currency units, thereby enhancing users' clarity in understanding product yields. Additionally, upon detecting that the utilization rate of a specific product feature falls below expectations in the target market, the system can identify functional design-to-market demand alignment issues by incorporating cultural demand data. This approach ultimately improves users' willingness to adopt the product. Through continuous real-time optimization, generative AI dynamically adapts product elements to ensure ongoing alignment with the cultural demands of target markets, thereby strengthening both product competitiveness and user satisfaction.

2.5 Generative AI Empowers Marketing Model Innovation
In cross-cultural financial marketing scenarios, traditional models exhibit significant shortcomings, including inadequate cultural

adaptation, low response efficiency, and suboptimal resource allocation. These deficiencies hinder the ability to meet the global market's demand for precise and dynamic marketing strategies. Generative AI, with its advanced capabilities in data processing, content generation, and strategy optimization, transcends the inherent limitations of conventional marketing approaches. It fosters innovation throughout the entire spectrum of cross-cultural financial marketing-from demand insight and content creation to channel operations and performance feedback-thereby establishing a new marketing paradigm characterized by cultural adaptability, real-time responsiveness, and precision efficiency. This innovation provides essential technological support for multinational financial institutions striving to navigate cross-cultural marketing challenges.

2.5.1 Demand Insight Innovation: From Surface Research to Deep Semantic Mining

Traditional cross-cultural financial marketing insights predominantly rely on methods such as questionnaires and interviews, which primarily capture consumers' surface-level needs and are susceptible to cultural cognitive biases. In contrast, generative artificial intelligence employs semantic analysis, sentiment computing, and knowledge graph technologies to perform in-depth mining of cross-cultural financial consumers' demands. Firstly, it integrates multimodal data, including social media interactions, financial product reviews, and regulatory policy interpretations, to extract cultural preferences and latent needs concealed within linguistic expressions. For instance, by analyzing discussions on Sharia-compliant finance among Middle Eastern financial consumers, it identifies their core demands for interest-free wealth management and risk-sharing products. Secondly, based on associated financial demand characteristics, such as consumers' risk tolerance and investment preferences, it facilitates precise categorization and prediction of needs across diverse cultural segments. This approach provides a robust foundation for subsequent marketing strategy formulation.

2.5.2 Content production innovation: From standardized Replication to culturally native generation

The core challenge in cross-cultural financial marketing lies in the inadequate cultural adaptation of content. Traditional approaches predominantly rely on manual translation and superficial visual adjustments for localization, often failing to convey value propositions that align with the cultural cognition of the target market. Generative AI is driving the production of marketing content toward culturally native innovation. On one hand, it automatically generates contextually appropriate content based on the cultural characteristics of target markets: creating financial product campaigns that emphasize family asset planning and intergenerational wealth transfer for collectivist cultures in East Asia, while producing content focused on personal asset growth and autonomous financial decision-making for individualist cultures in Western markets. The content formats encompass multimodal outputs, including text, visual posters, and audiovisual materials tailored to the information consumption habits of different cultural consumers. On the other hand, it achieves simultaneous adaptation of content compliance and cultural appropriateness. When generating marketing materials, the system automatically embeds the financial regulatory requirements of target markets-such as the EU's disclosure regulations mandating specific risk warning formats-ensuring that content satisfies both cultural expectations and compliance standards, thereby avoiding the dual issues of cultural mismatch and regulatory risks.

2.5.3 Channel operation Innovation: From Extensive Placement to Dynamic Collaborative Adaptation

Traditional cross-cultural financial marketing channel operations predominantly adopt a standardized channel approach combined with regional deployment models. This approach presents several issues, such as mismatches between channels and the engagement habits of consumers within cultural circles, leading to resource wastage. By leveraging reinforcement learning and multi-channel data integration technologies, generative artificial intelligence has achieved innovation in channel operations. The analysis will first examine media usage preferences among consumer groups from different cultural circles. For instance, it may identify that young financial consumers in Southeast Asia tend to access financial information through TikTok and Facebook, while middle-aged and older consumers in Europe rely more on professional financial

websites and offline branches. Based on these insights, channel mix optimization will be implemented to enable dynamic allocation of channel resources. Real-time marketing data will be collected across all channels, with algorithms autonomously optimizing campaign strategies. For example, when detecting declining conversion rates in social media channels within a specific region, the system will automatically increase investment in professional financial platforms or adjust content presentation formats within channels. This ensures marketing resources are allocated to high-performing channels, thereby enhancing the resource allocation efficiency of cross-cultural financial marketing.

2.5.4 Effect feedback Innovation: From Lag Analysis to Real-time Iterative Optimization
Traditional cross-cultural financial marketing performance feedback relies on post-event manual statistics and analysis, which results in prolonged feedback cycles and delayed optimization, making it challenging to respond promptly to dynamic market demand changes. Generative artificial intelligence has established a mechanism for real-time performance feedback and iteration. On one hand, it collects data across all stages of cross-cultural marketing in real time, including content clicks, product inquiries, purchase conversions, user reviews, and other relevant aspects, leveraging data mining technologies to identify weaknesses in marketing strategies. On the other hand, it utilizes reinforcement learning algorithms to facilitate autonomous strategy iteration, continuously optimizing demand insight models, content generation logic, and channel distribution strategies based on feedback data from diverse cultural contexts. In subsequent marketing campaigns, it increases the emphasis on content such as 'invite friends to enjoy financial rewards,' thereby forming a real-time iterative closed loop of feedback, optimization, and re-feedback, which drives continuous improvement in the effectiveness of cross-cultural financial marketing [22].

3. Customized Cross-Cultural Financial Products Driven by Generative Artificial Intelligence

3.1 Analysis of the Demand for Cross-Cultural Financial Products
In the context of economic globalization,

financial service providers are increasingly faced with the challenge of aligning their offerings with the diverse needs of clients across various cultural regions. Cross-cultural financial product demand analysis emerges as a pivotal solution to this challenge. This analysis involves employing systematic market research and data analytics to uncover the characteristics of financial product preferences, demand structures, and the underlying influencing factors within distinct cultural contexts. This process not only facilitates the identification of commonalities and disparities in cross-cultural financial demands but also establishes a theoretical foundation and practical basis for subsequent innovative financial product design and generative AI-driven customization. Financial product innovation is inherently shaped by a confluence of factors, including investor preferences, market competition, regulatory requirements, and economic conditions. While traditional financial product design centers on consumer needs as its core consideration-with asset pricing grounded in risk-return matching-real-world financial environments often reveal investors' paradoxical pursuit of 'high returns coupled with risk aversion.' Striking a balance to accommodate such contradictory preferences has become a focal concern for financial institutions. In this process, financial institutions typically possess strong incentives to strategically adjust their framework structures through product design, launching more tactical or innovative financial products that emphasize returns while obscuring costs. However, if this design logic lacks a comprehensive understanding of cross-cultural demand differences, it can easily result in a misalignment between products and the cultural context of target markets. In reality, within global financial markets, culture fundamentally serves as a core variable influencing consumer decision-making, profoundly shaping the forms and characteristics of financial product demands across regions. Cross-cultural financial product demands do not merely represent singular appeals for capital appreciation or risk protection; rather, they constitute a complex system jointly shaped by cultural values, levels of economic development, regulatory environments, and individual characteristics. The advent of generative AI technology provides new tools for accurately identifying and analyzing these complex demands,

transforming demand analysis from experience-based judgment to data-driven approaches. This establishes a scientific foundation for the customization of cross-cultural financial products while offering technical pathways to address traditional product design shortcomings in cultural adaptation.

3.2 Case Analysis of Customized Cross-Cultural Financial Products: Taking Fudian Bank's "Jinlv Loan" and "Jinyi Loan" as Examples

In the field of cross-cultural financial product customization, the application of generative artificial intelligence is increasingly revealing its unique value and potential. Through the analysis of several representative practical cases, it becomes evident that generative AI primarily facilitates personalized financial product customization via data-driven demand insights, dynamic product design, and optimization for cross-cultural adaptability. Specifically, Fudian Bank capitalizes on Yunnan's unparalleled tourism resources to develop the "resource economy" of cultural tourism fully. By strategically positioning cultural tourism finance as a priority and key focus for future business development, the bank engages in strategic mobilization and resource allocation. Special support policies have been introduced to enhance effective credit supply, proactively reduce fees, share benefits, and innovate financial products and services. These measures effectively address challenges such as financing difficulties faced by cultural and tourism enterprises, high fee rates, and the need to boost consumption vitality [23].

Yunnan is a province with a multi-ethnic population and abundant cultural tourism resources. Factors such as diverse regional cultural customs and varying levels of economic development have led to unique financial needs among local cultural tourism industry entities and handicraft practitioners. Through in-depth research, Fudian Bank has accurately identified these cross-cultural demands and actively explored customized cross-cultural financial products. Notable examples include its "Jinlv Loan" [24] and "Jinyi Loan". For cultural tourism entities in Dali such as boutique hotels, guesthouses, restaurants, travel agencies, and commercial streets/towns, Fudian Bank has launched the "Jinlv Loan". The homestay sector within Yunnan's cultural tourism industry carries distinct regional cultural attributes. Homestays in the Dali area commonly integrate the architectural styles and cultural elements of ethnic minorities like the Bai people, attracting domestic and international tourists from diverse cultural backgrounds through their unique cultural identity. This culturally-driven operational characteristic also determines the specificity of their financial needs. In designing the "Jinlv Loan," Fudian Bank closely aligned its offerings with the operational characteristics and funding cycles of the cultural tourism industry. The product parameters include a maximum credit limit of 1 million yuan and a term of up to 5 years, addressing the long-term operational and mid-term facility upgrade needs of businesses such as homestays. To enhance service efficiency, the bank utilized technological advancements to facilitate loan disbursement within as little as one day, thereby meeting the urgent funding requirements of cultural tourism businesses for facility renovations and marketing promotions ahead of peak seasons. This approach also accommodates the slower cash flow recovery experienced by some merchants during off-seasons. From product design to service implementation, Fudian Bank demonstrates a profound understanding and precise alignment with the cultural atmosphere and operational dynamics of the local cultural tourism industry. Furthermore, the bank has launched the "Jinyi Loan" program, which focuses on traditional handicrafts such as wood carving, embroidery, tie-dye, pottery, and silverware. These crafts serve as vital carriers of the diverse ethnic cultures in Yunnan, embodying significant cultural heritage and unique artistic value. The handicrafts produced by different ethnic groups exhibit notable variations in production techniques, design styles, and market demand. For example, Yi embroidery is celebrated for its vibrant colors and patterns rich in ethnic characteristics, appealing to domestic tourists seeking souvenirs while also attracting international consumers interested in ethnic culture. Such cross-cultural market dynamics directly influence the financial allocation needs of handicraft practitioners. Fudian Bank's "Jinyi Loan" focuses on providing precise financial support to help artisans expand production scale, enhance craftsmanship, and broaden market channels. In product design, it thoroughly considers the

seasonal characteristics of artisanal production, the cyclical funding needs for raw material procurement, and the industry-specific aspects of valuing handmade products. Through targeted design, it delivers tailored financial services to this demographic that embodies both ethnic cultural attributes and cross-cultural market features. By the end of December 2024, "Jinlv Loan" had cumulatively granted credit to over 300 clients, with a total credit amount reaching 175 million yuan, and online loan disbursements totaling 113 million yuan, achieving full coverage across all 15 prefectures and cities in Yunnan Province. Meanwhile, "Jinyi Loan" continued to expand into sectors such as cultural production, design services, investment operations, and distribution channels. The successful launch of these two products demonstrates how Fudian Bank, by gaining an in-depth understanding of the diverse financial needs under different cultural contexts in Yunnan, has developed targeted product offerings. This approach not only effectively meets the demands of local cultural tourism industries and traditional artisans but also expands the bank's business scope. Additionally, it promotes the preservation and development of Yunnan's regional culture, providing valuable insights for cross-cultural financial product customization.

3.3 The Advantages and Challenges of Cross-Cultural Financial Product Customization Models

Amid the intensifying competition in the global financial market and the increasing demand for cultural diversity, the cross-cultural financial product customization model-known for its profound adaptability to cultural differences-has emerged as a key strategy for multinational financial institutions to navigate market barriers and enhance their core competitiveness. The integration of generative AI technology has further amplified the value of this model; however, it also presents numerous practical challenges stemming from factors such as the complexity of cultural cognition and limitations in technological applications. A comprehensive analysis of the advantages and challenges associated with cross-cultural financial product customization is essential, serving both as a prerequisite for optimizing product customization logic and as a foundation for advancing the deep integration of generative AI

technology within cross-cultural financial contexts.

The core advantages of cross-cultural financial product customization models are primarily manifested in three dimensions. First, precise alignment with cultural needs enhances market penetration efficiency. Given the fundamental differences in risk appetite, value propositions, and usage habits among financial consumers across cultural spheres, this model achieves deep compatibility between financial products and cultural demands through a systematic analysis of target markets' cultural characteristics. It thereby avoids the market acceptance issues caused by cultural mismatches inherent in traditional standardized products. Second, the model strengthens long-term user loyalty through enhanced brand cultural identification. Its essence lies not merely in functional product adaptation, but in integrating the cultural values and symbolic systems of target markets throughout the entire product design process. This transforms financial products from mere transactional tools into carriers of cultural value, deepening users' cultural identification and emotional attachment to the brand, thus laying the foundation for sustained customer retention. Third, the model effectively mitigates cultural adaptation risks while optimizing compliance and operational costs. By proactively addressing cultural and regulatory differences during the design phase, it reduces costly post-launch modifications and non-compliance penalties, thereby improving the cost-efficiency ratio of cross-border financial services. Traditional standardized financial products often face risks of cultural conflicts in cross-cultural markets due to insufficient cultural adaptation, while neglecting stringent market requirements for privacy protection. This leads to user resistance and compliance risks caused by inappropriate data collection methods. In contrast, the customized cross-cultural financial product model integrates both cultural adaptation and compliance requirements into the initial product design phase, thereby avoiding such risks at the source, reducing subsequent adjustment costs, and improving operational efficiency.

Although the cross-cultural financial product customization model has certain advantages, it still faces numerous challenges in practical implementation due to limitations in the depth and breadth of cultural cognition, boundaries of

technological application, and the complexity of global collaborative management. These challenges become more pronounced in the application process of generative AI technology, necessitating solutions. First, the complexity and dynamism of cultural cognition can easily lead to deviations in demand identification. This model relies on precise understanding of the target market's culture as a prerequisite. However, culture itself is implicit and dynamic, making it impossible to fully grasp through simple dimensional categorization, thereby affecting the accuracy of demand recognition. As the core tool in the customization process, generative AI technology carries inherent cultural biases and black-box effects, which may amplify product adaptation risks. Specifically, since training data predominantly comes from developed markets such as Europe and the U.S., Western financial perceptions may be embedded in the model, distorting judgments about the needs of other cultural markets. Second, the complexity of global collaborative management constrains customization efficiency and consistency. Cross-cultural customization requires coordination between headquarters and regional teams, as well as between technical and business departments. However, the organizational structures of global financial institutions are typically hierarchical and regionally segmented. While regional teams are familiar with local cultures, they often lack expertise in applying generative AI technology. Conversely, technical departments may excel in model operation but lack deep understanding of local cultural needs. The resulting information gap hinders collaboration efficiency. Third, the fragmentation of cross-cultural compliance rules increases the difficulty of product design. Cross-cultural customization must simultaneously align with diverse financial regulatory requirements across markets. Yet, global compliance rules are fragmented, with some regulations intersecting with cultural needs. If interpreted solely from a compliance perspective while neglecting underlying cultural logic, products may fall into the dilemma of being "compliant but incompatible"-meeting regulatory standards but failing to gain user acceptance due to misalignment with local cultural perceptions.

4. Future Outlook

Against the backdrop of intertwined financial globalization and cultural diversity, the generative AI-driven cross-cultural financial product customization model demonstrates vast potential, potentially reshaping the landscape of global financial markets. From an opportunity perspective, as technology continues to advance through iterations, generative AI's recognition and understanding of cultural characteristics will become increasingly precise. It can deeply uncover consumers' latent and implicit financial needs across different cultural contexts-such as identifying liquidity demands arising from religious holiday cycles in specific cultures or specialized financial product requirements stemming from cultural heritage preservation needs. This drives cross-cultural financial products beyond basic need fulfillment toward achieving profound cultural value integration. In the product design phase, artificial intelligence demonstrates enhanced innovative capabilities by rapidly combining financial product elements to create more targeted and groundbreaking offerings for diverse cultural segments. This includes developing investment products aligned with emerging cultural trends such as digital art and sustainability, thereby addressing the evolving financial demands shaped by cultural shifts. In the realm of customer service, generative AI breaks down language and cultural barriers through real-time, precise multilingual interactions, delivering seamless financial services to global clients. It provides personalized wealth management advice and risk warnings tailored to clients' cultural backgrounds, thereby strengthening their trust in and reliance on financial institutions. Leveraging the automation and intelligence of artificial intelligence, financial institutions can achieve large-scale cross-cultural customization of financial products at lower costs, enhance operational efficiency, extend tailored services to more small, medium, and micro customer segments, and expand market boundaries. Finally, it is essential to encourage commercial banks to capitalize on their competitive advantages, utilize new technologies to accurately identify shifts in customer demands, focus on product and service innovation, and engage in differentiated competition. Support should be given to commercial banks in establishing open collaborative relationships with various financial and technology enterprises, ensuring bidirectional connectivity between fintech and tech-driven finance.

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