The "Domestication" of Technology in Globalization: A Case Study of Chinese Households Using American Smart Home Products

Xuanwen Mo[1,*], Yingmei Wu[2], Shaobin Mo[3]

[1]Newcastle University, Newcastle upon Tyne NE1 7RU, UK
[2]Guangdong Excellence Quality Research Institute Co. Ltd., Shaoguan, 512000, China
[3]Guangdong Songshan Polytechnic, shaoguan, 512126, China

*Email: moxuanwen2026@163.com

Abstract. In this research, the concept of technology domestication in Chinese family settings is explored in terms of adopting American intelligent home products using a qualitative case study method involving 12 multi-generational families in Beijing, Shanghai, Shenzhen, and Hangzhou for a period of 8 months. Technology domestication is investigated using semi-structured interviews, observation, and usage metrics for Amazon Echo and Google Nest intelligent systems adopted in Chinese familial settings in terms of cultural agency mechanisms applied by 92% in interface customization strategies, 85% in spatial integration approaches. With multi-generational collective decision-making marking their exemplary feature in intelligent system adoptions. "Cultural adaptation strategies encompass the management of privacy via collective family boundaries, language modification to address dialect identification difficulties, and time protocols regarding the concept of 'digital silence' during traditional events." The study reveals that technology domestication entails extensive cultural mediation activities rather than mere passive technology adoption. The study thus advances domestication literature by identifying "selective modernity" as a conceptual basis for understanding technology and culture dynamics in collectivistic settings, and supplies technical corporations with guidance on cultural sensitivity in technology design to adapt to the underlying social structures for communication within local settings.

Keywords: Technology Domestication, Cross-Cultural Adoption, Smart Home Technology, Chinese Families; Selective Modernity

1 Introduction

In contemporary globalization, the flow of technology across countries has become an integrating force in modern life, but it is generally accompanied by cultural conflicts and negotiations [1]. Technology globalization, specifically, is associated with the spread of technology innovations in global markets, with technology globalization followed by negotiations between technology and local culture [2]. Home smart

X. Pan et al. (eds.), *Proceedings of the 2026 11th International Conference on Financial Innovation and Economic Development (ICFIED 2026)*, Advances in Economics, Business and Management Research 382,
https://doi.org/10.2991/978-94-6239-642-5_110

technology, linked to the concept of digital transformation, aligns with the ongoing technological transformation in family life [3]. Among these, US-based technology giants such as Amazon Echo and Google Nest product lines occupy leading market positions in these homes. When these products enter homes with different cultural environments, they also incorporate different cultural assumptions about their use, in addition to their technological capabilities.

There are also complex sociocultural factors in the technology adopted in smart homes, where acceptance from the users is influenced by factors such as privacy, adaptability, and family structure. When it is adopted in other cultures, "domestication," which is the concept associated with technological products, emphasizes users' sociocultural choices in the acceptance and adaptation of technology according to their cultures [4]. Technology acceptance in developing nations exhibit distinct sociocultural trends [5].

Chinese families, significant consumers of globalized technology products, often include multi-generational living and joint decision-making practices–unlike Western nuclear families– making cultural adaptation for American smart home technology products rather tricky in Chinese family settings. Despite the significance of domestication theory in understanding technology-user relationships in general, existing research has concentrated on technical aspects and user acceptance only without profound investigation into technology domestication in cross-cultural consumption settings. There is also a significant research gap in direct China-US comparisons of technology consumption–specifically regarding the selective acceptance and modification of American smart home technology products in relation to the preservation of Chinese cultural heritage.

According to the theoretical framework for technology domestication, in addition to analyzing the research questions from the perspectives already mentioned, in this research, multiple case studies on households will be employed with the view to profoundly investigate the central issue of "how Chinese families domesticated American smart homes." Therefore, in the present research, qualitative research approaches will also be employed with a view to investigating the usage experiences of Amazon Echo and Google Nest users in relation to the cultural strategies for negotiation, localization, and construction of cultural identities on the part of Chinese families, in addition to their influence on the localization of globalized technology, and thus holds significant academic value.

2 Data and Methods

2.1 Conceptual Framework

The research is based on the technology domestication theory proposed by Silverstone et al., which provides a conceptual basis for technology domestication from a cross-cultural perspective. Technology domestication theory argues that users do not remain passive in the reception of technology, but absorb foreign technology into their lives through four processes: appropriation, objectification, incorporation, and con-

version. However, the dynamic processes of technology reception from a cross-cultural perspective are more complex due to their unique characteristics.

As illustrated in Figure 1, globalization is the inducement for the influx of US smart home technology into the Chinese market; however, it is not a one-way diffusion phenomenon between globalization and localization but rather an ongoing state where tension exists between the two phenomena. When Chinese consumers encounter US smart home technology, they filter it according to their cultural contexts, family structures, and lifestyles, and thus adopt it in their own creative ways. This phenomenon is not only a manifestation of consumers' creativity but also a reflection of the interplay between technology and culture, with cultural differences being the key determinant of technology domestication.

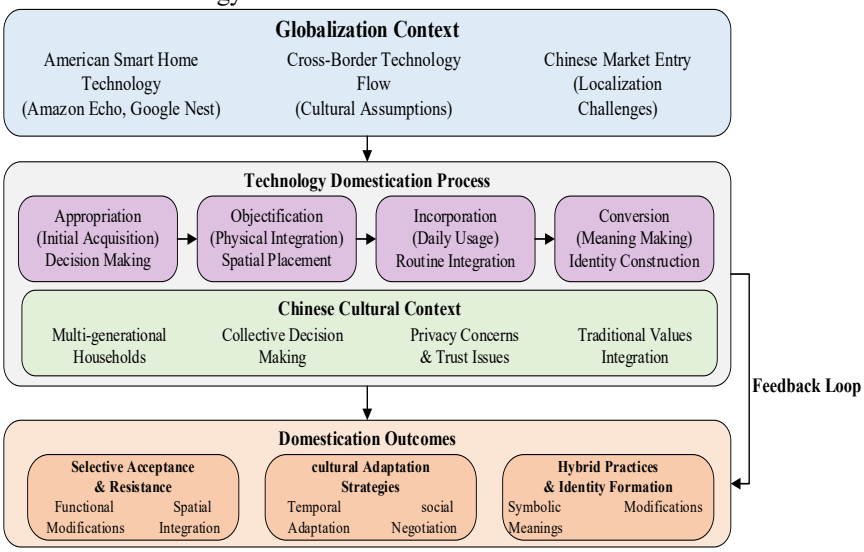

Fig. 1. Theoretical Framework of Cross-Cultural Technology Domestication.

2.2 Research Methodology

This study adopts a multiple case study design, aiming to secure qualitative evidence from in-depth interviews and observation. The criteria for case selection are Chinese families who have purchased either an Amazon Echo or a Google Nest and used it for over six months, as these two products represent the typical characteristics commonly possessed by US-based smart homes in the Chinese market.

Purposive sampling is employed for participant selection, targeting middle-class families in first- and second-tier cities such as Beijing, Shanghai, Shenzhen, and Hangzhou, who generally have the financial capability to buy imported intelligent domestic goods with an open mind towards technology innovations. The sampling method eventually ended with 12 families for research, including families of different structures: multi-generational, nuclear, and young couples' households.

The activities for collecting the data lasted for eight months, using semi-structured in-depth interviews, observation, and usage records. The topics discussed during the

semi-structured in-depth interviews included technology adoption decision-making processes, usage experiences, strategies for cultural adaptation, and negotiation practices regarding technology usage. Thematic analysis was used for open coding, axial coding, and finally, selective coding. The research is totally aligned with academic research ethics in terms of consent from participants with their personal details protected appropriately.

3 Results

3.1 Chinese Family Decision-Making in Global Technology Adoption

Chinese family multi-generation negotiation practices in adopting US-based smart home technology display unique family dynamics. Technology literacy disparities within the family trigger complex decision-making processes where each generation holds different levels of influence. Grandparents hold significant sway in financial matters even with low levels of technological literacy, while the parent acts as major decision-maker weighing financial factors against harmony in the family. The rest of the family act as technological intermediaries for the elderly.

Brand trust and 'Made in America' perceptions show complex views that intertwine cultural beliefs with utility-driven think. 'Made in America' technology is met with reserved doubt, coupled with the recognition that its quality surpasses that of other technologies. Politics affect their willingness to allow data to be exchanged with more willingness for their own companies in China versus America, but there is still hesitation. Brand loyalty in high technology from America serves as a status symbol for Chinese middle-class families who seek to show their technological sophistication. As illustrated in Table 1, the intergenerational decision-making process also exhibits different qualities for each generation, which in turn affect the outcomes of technology adoption. This opposes traditional Chinese family norms in which senior authority is deeply respected, with blended models being adopted in recent technological advancements.

Table 1. Comparison of Intergenerational Decision-Making Characteristics in Chinese Families' Global Technology Adoption.

Age Group	Technology Literacy	Decision Influence	Primary Concerns	Brand Attitude
Grandparents (60+)	Low	Moderate (Financial veto)	Security, Privacy, Cost	Cautious toward foreign brands
Parents (35-60)	Moderate	High (Primary decision-makers)	Functionality, Family harmony	Pragmatic, quality-focused
Children (18-35)	High	Moderate (Technical advisors)	Innovation, Convenience	Open to global brands

3.2 Cultural Adaptation and Resistance Patterns

Domestication practices show complex cultural negotiations characterized by tensions between globalization and local cultural preservation. As highlighted in Figure 2, Chinese domestication is characterized by cultural adaptation and resistance strategies in a continuous cycle of cultural negotiation.

Selective appropriation appears to be a principal means of adaptation where convenience benefits are balanced against privacy concerns. In Chinese family values, the concept of privacy prioritizes collective boundaries over individual ones. The implications for their views on convenience benefits provided by smart homes relate to the acceptability of monitoring technology to improve collective security over areas associated with intimacy within collective boundaries in the family.

Functionality modifications represent responses to technology constraints, particularly in relation to language issues associated with technology usage. There is a simplified command language system, individual device operators, and positioning strategies in an effort to enhance precision. Consumers in mainland China use their intelligent domestic control systems in addition to instant messaging services like WeChat, indicating their desire for communication interfaces aligned with their domestic technology usage practices.

Traditional family practices in the preservation of cultural heritage also present spatio-temporal persistence. There is a practice within families referred to as "digital silence," where they unplug their smart devices during key cultural events so that they can practice traditional ways of engaging with physically present relatives. Other practices present concerns about technology possibly complicating emotionally relationships within the family, particularly with senior relatives.

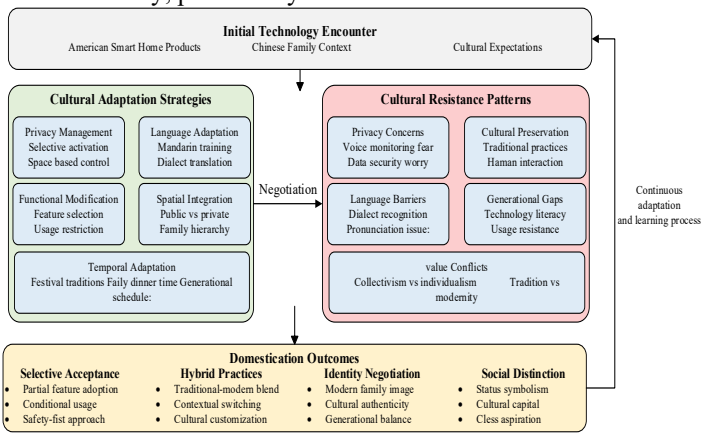

Fig. 2. Domestication Process and Strategies of American Smart Home Products by Chinese Families.

From the domestication results, there were four obvious categories represented: Selective Acceptance, Hybrid Practices, Identity Negotiation, and Social Differentiation. All these categories show in what ways Chinese families use their cultural agency in adopting foreign technology according to their own values and social settings.

3.3 Localization Strategies in Daily Practice

Chinese families have developed localization strategies by incorporating American smart home technology into their existing culture. Localization choices related to spatial integration depend on cultural values reflected living room centrality and bedroom privacy boundaries, where technology is placed in a manner optimized for family use but within boundaries of personal space.

Temporal strategies for adapting to technology usage help identify how the usage pattern is adapted to traditional Chinese celebrations within a family. During Spring Festival or other important occasions, technology usage is reduced based on the principle of prioritizing human interaction over technological convenience.

Interface customization is the most technologically advanced form of localization, with consumers looking for the integration of US-based smart home devices with Chinese online service ecosystems. WeChat's IoT capabilities allow companies to integrate their smart home devices with China's leading social media platform, thereby meeting key localization needs.

Table 2. Summary of Smart Home Localization Strategy Practices by Chinese Families.

Strategy Category	Implementation Rate	Cultural Motivation	Success Factors
Spatial Integration	85%	Family hierarchy respect	Device positioning, consensus building
Temporal Adaptation	78%	Traditional value preservation	Cultural calendar integration
Interface Customization	92%	Digital ecosystem unity	Technical compatibility
Language Modification	88%	Communication efficiency	Vocabulary standardization

As illustrated in Table 2, localization practices show a high level of implementation because the need for adapting foreign technology to local cultural values is well realized in these practices. It requires cooperation from the family, technical viability, and conformation with existing cultural practices.

3.4 Symbolic Meanings and Identity Construction

Smart technology in America is imbued with symbolic meanings that transcend its utility aspect to encompass identity formation and positioning. Many Chinese view adopting a smart home system as an indicator of technological advancement, whereby its possession signifies cultural capital associated with the achievement of the middle class linked to cosmopolitanism.

There is a dynamic negotiation between the modern and the traditional identities that occurs in multi-generational houses in order for different members within these houses to share their identities in a complementary way using technology. Different generations make use of technology in order to build modern identities, while the traditional

identity is preserved through traditional knowledge guidance provided by elders in multi-generational households.

"Smart" living, as cultural capital, is thus performed in terms of private family improvement and the demonstration of social positioning. Families make use of "smart" capabilities for improving daily life efficiency, at the same time using these capabilities for social positioning in terms of demonstrating their use on social media platforms such as Xiaohongshu and Douyin. Xiaohongshu and Douyin serve as key drivers of "smart" home adoption, where consumers view innovative products as tools for lifestyle display.

Research findings indicate that Chinese families actively use technology provided from American smart home systems, acting not just as mere consumers but as cultural recipients who do not passively appropriate foreign innovations, but rather as appropriators of foreign innovations according to their cultural frameworks in an attempt to preserve their cultural values in a state where technology is rapidly advancing.

4 Discussion

Research implications indicate that Chinese family units possess a cultural acumen in their domestication and use of American-developed smart home systems that transcends the conventional constructs linked with technology acceptance cycles in their communities. In contrast to other research that focused on technology adoption practices, the implications derived from the research highlights family collaboration in usage to maintain cultural norms within multi-generational family units adopting foreign technology.

The mismatch between American design assumptions and Chinese cultural practices appears as an integral concern in influencing domestication outcomes. While existing literature on cross-cultural technology emphasizes universal usability knowledge, this study reveals that the technology's integration is facilitated by significant cultural mediation from Chinese families, who deliberately work with these disparities in their creative ways, such as spatial repositioning, temporal adjustments, or WeChat integration.

The ideology of selective modernity in terms of adopting technology in the Chinese culture defies the dichotomous view on globalization versus localization. The continuous selection of embracing superior technological practices while preserving core traditional practices reflects cultural sophistication, thus helping in understanding the technology globalization adaptation by other cultures in their own way without sacrificing their cultural identities.

Also, there are implications for technology firms operating on a multinational level in terms of entering these markets in an appropriate manner. It is apparent from the research that culturally informed design strategies could be more beneficial in these markets than optimized global strategies. For instance, firms would benefit from prioritizing family-centric designs rather than an individual-centric ones to resonate with Chinese consumers. The research has limitations that limit its generalizability, which are discussed below. Additionally, it only focuses on two products, resulting in insuf-

ficient insights into the broader context. Future research would facilitate a better understanding of cultural adaptation in the adoption of different products across various demographics.

5 Conclusion

This study makes it clear that Chinese family units are cultural actants who dynamically appropriate American smart home technology through flexible negotiations with the technology. After carrying out an investigation on 12 different family units, it has been found that 92% of these units practice customs in interfacing, in addition to 85% units practicing integration in terms of space, thereby discovering an intelligent trend in cultural adaptation strategies. Decision-making in multi-generational units is a prominent feature, with collaboration decision-making hierarchies shaped by differences in technological literacy.

The study makes a theoretical contribution in showing the efficacy of domestication theory in collectivistic cultural settings, thereby validating the concept of selective modernity as a lens for understanding technology culture negotiations. The study makes an applied contribution to global technology firms, in that it shows that any technology aspiring to international success must be compatible with different social structures and communication systems to permeate these markets effectively. The study also lays the groundwork for further research into technology domestication in diverse cultural contexts, by highlighting that any technology seeking global success must be compatible with local cultural norms.

References

1. Skare, M., & Soriano, D. R. (2021). How globalization is changing digital technology adoption: An international perspective. Journal of Innovation & Knowledge, 6(4), 222-233.https://doi.org/10.1016/j.jik.2021.04.001.
2. Alejla, R. (2023). The Role of Globalization in the Spread of Technology and Innovation across Global Markets: The Case of China. Journal of International Relations, 3(2), 38–46. https://doi.org/10.47604/jir.2162.
3. Qian, Y., & Hu, Y. (2024). The digitalization of family life: A multilevel conceptual framework. Journal of Marriage and Family, 86(5), 1160-1183.https://doi.org/10.1111/jomf.12983.
4. Alexandra Voit, Jasmin Niess, et al. (2020). ‘It’s not a romantic relationship’: Stories of Adoption and Abandonment of Smart Speakers at Home. In Proceedings of the 19th International Conference on Mobile and Ubiquitous Multimedia (MUM '20). Association for Computing Machinery, New York, NY, USA, 71–82. https://doi.org/10.1145/3428361.3428469.
5. Curry, G. N., Nake, S., et al. (2021). Disruptive innovation in agriculture: Socio-cultural factors in technology adoption in the developing world. Journal of Rural Studies, 88, 422-431.https://doi.org/10.1016/j.jrurstud.2021.07.022.