Research Article

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Cultural Catalysts of FinTech: Baring Long-Term Orientation and Indulgent Cultures in OECD Countries

https://doi.org/10.1515/econ-2025-0137
received December 04, 2023; accepted January 21, 2025

Abstract: The proliferation of financial technology (FinTech) has been instrumental in advancing financial inclusion, particularly in regions where traditional banking services have been historically limited. This study controls for supply-side determinants of FinTech adoption across societies and investigates the influence of cultural dimensions – long-term orientation (emphasizing future rewards, perseverance, and thrift) and indulgence (prioritizing immediate personal satisfaction, leisure, and emotional expression) – on this phenomenon. Utilizing a comprehensive dataset spanning 9 years (2012–2020) from 43 OECD member countries (including partner nations), this research employs a two-stage fixed effect model with robust standard errors. The findings reveal that societies characterized by higher levels of indulgence demonstrate a lower propensity for FinTech adoption. Conversely, the long-term orientation cultural dimension exhibited a negative, albeit statistically insignificant, effect on FinTech appetite. This study underscores the necessity for industry practitioners and FinTech entrepreneurs to consider cultural dynamics when initiating FinTech ventures in specific markets. Furthermore, it recommends the exploration of additional cultural dimensions from various frameworks to enhance the generalizability of these findings. By elucidating the pivotal role of culture in shaping FinTech adoption, this research offers valuable insights for both academic discourse and industry applications, contributing to a more nuanced understanding of the interplay between cultural factors and financial innovation.

Keywords: national culture, long-term orientation, indulgence, FinTech appetite, financial inclusion

1 Introduction

In the rapidly evolving landscape of financial technology (FinTech), understanding the factors that shape consumer attitudes and behaviors toward these innovative solutions is of paramount importance (Kowalewski et al., 2021). One intriguing aspect that warrants investigation is the influence of cultural orientations on individuals' appetite for FinTech. This research is focused on investigating the impact of cultures characterized by long-term orientation (emphasizing future rewards, perseverance, and thrift) and indulgence (prioritizing immediate personal satisfaction, leisure, and emotional expression) on the adoption and utilization of FinTech services within the context of the most economically developed and advanced nations globally, namely, the member states of the Organization for Economic Co-operation and Development (OECD).

FinTech has revolutionized traditional financial services, offering convenience, efficiency, and personalized experiences to users. However, its widespread adoption varies across countries, and cultural factors have been recognized as key drivers behind these disparities (Glavina et al., 2021). National culture, with its diverse dimensions and values, can significantly shape individuals' perceptions, preferences, and behaviors in various domains. In particular, the cultural dimensions of long-term orientation and indulgence provide an intriguing lens through which to examine the FinTech appetite of individuals in different countries.

The conventional financial system has failed, especially in developing countries, to accommodate customers in the following arena: cost-efficient ways of performing financial obligations, ensuring transparency, secured

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systems, speed and convenience, and last but not least, accessibility (Cherchye et al., 2018; Schmidt & Hryckiewicz, 2006; Shimada & Yang, 2010). On the contrary, the new emerging financial phenomenon introduced in 1990 called 'FinTech" has successfully solved the above concerns. Academics and practitioners have identified FinTech as critical for ensuring financial inclusion and long-term financial sustainability (Boratyńska, 2019). Apart from different micro and macro factors affecting FinTech appetite, cultural elements are ranked significant in the empirical literature for the cause of nurturing FinTech adoption.

The intention to adopt FinTech is shaped by how customers perceive the risk they are exposed to while exercising FinTech options (Tang et al., 2022). Several studies have found perceived usefulness, trust, perceived ease of use, self–efficacy, and social influence as crucial influencers in molding consumer's perceptions toward FinTech adoption (Dapp, 2017; Kim et al., 2016; Koksal, 2016; Makanyeza, 2017; Singh & Srivastava, 2018; Wentzel et al., 2013). This study focuses on long-term orientation and indulgence, which group the aforementioned and several other individual-centric traits within a country to see as a mainstream influencer in molding FinTech appetite across borders. Following these individual-centric characteristics, a plethora of macro-level variables is listed in the research as determining FinTech heed. Technology diffusion, inequality, economic growth, optimism in the future financial outlook, economic freedom, and human capital are a few examples (Asongu & Le Roux, 2017; Comin & Mestieri, 2018; Kuperberg, 2020; Malisuwan et al., 2016).

Long-term orientation refers to a cultural mindset that emphasizes persistence, perseverance, and planning for the future. It reflects a society's inclination toward long-term goals, delayed gratification, and sustainable growth (Darsono et al., 2021). On the other hand, indulgent cultures prioritize immediate gratification, personal enjoyment, and fulfilling desires in the present moment (Anyangwe et al., 2022). These cultural orientations can influence individuals' attitudes toward new technologies, including FinTech, which often require a degree of trust, willingness to experiment, and long-term commitment.

Within the context of OECD countries, there exists a rich diversity of cultural orientations, ranging from countries with strong long-term orientation such as Japan and South Korea to more indulgent cultures like Spain and Italy. By exploring the relationship between these cultural dimensions and FinTech appetite, we can gain valuable insights into the underlying factors that shape consumers' attitudes, adoption patterns, and usage behaviors across different OECD countries.

National culture in shaping FinTech appetite is a complex yet momentous dilemma. Some studies have examined the influence of national culture in crafting FinTech appetite (Cristofaro et al., 2022; Salcedo & Gupta, 2021). However, the role of indulgence versus restraints and long-term orientation versus short-term orientation has received less interest than other national cultural dimensions (Guo et al., 2018). This article follows Steers et al. (2008), who examine a simple, yet crucial dilemma: To what extent national culture influences the adoption of emerging technologies across the nations? There is a lack of grounded modeling that could assist in establishing the role of long-term orientation and indulgence in shaping FinTech heed, as well as a dearth of case studies discovering the impact.

The objectives of this study are twofold. First, it aims to investigate whether a significant relationship exists between long-term orientation and individuals' inclination to adopt and utilize FinTech services. Second, it seeks to explore whether cultures characterized by indulgence exhibit distinctive patterns of FinTech adoption in comparison to societies with a stronger emphasis on long-term orientation. By examining these cultural influences on FinTech appetite, policymakers, financial institutions, and FinTech providers can gain a better understanding of the cultural dynamics that shape consumer behaviors, enabling them to tailor their strategies accordingly. To achieve these objectives, this study draws on data for national cultural dimensions of long-term orientation and indulgence from the Hofstede National Culture Index published by Greet Hofstede. Additionally, data on FinTech appetite is sourced from Google Trends, which measures the frequency of searches for FinTech-related terms during the investigation period.

The study employed a two-stage methodological approach, initially utilizing fixed effects estimation in a panel data context, followed by a cross-sectional analysis regressing the obtained fixed effects estimates on time-invariant country characteristics. This rigorous analytical framework yielded noteworthy findings regarding the cultural determinants of FinTech adoption in OECD countries during the period under examination. Specifically, the results elucidate a statistically significant negative association between the cultural dimension of indulgence and FinTech appetite. This finding suggests that societies characterized by higher levels of indulgence exhibit a diminished propensity for FinTech adoption. Conversely, the cultural aspect of long-term orientation demonstrated a negative, albeit statistically insignificant, impact on FinTech appetite. These results contribute to our understanding of the complex interplay between cultural factors and technological adoption in the financial sector, offering valuable insights for policymakers and industry stakeholders alike.

The organization of this article is as follows: Section 1 introduces the research topic, outlining its objectives and

significance. Section 2 reviews the theoretical framework and empirical literature, providing evidence of a causal link between national culture and entrepreneurial intention. Section 3 details the data, empirical models, summary statistics, and the methodology employed in the study. Section 4 analyzes the impact of national culture on entrepreneurial intention, presenting the study's key findings. Section 5 offers a discussion of the findings, while Section 6 concludes the article with final remarks and recommendations for future research.

2 Literature Review

The rapid growth of FinTech has transformed the global financial landscape, offering innovative solutions that disrupt traditional financial services. Understanding the factors that shape individuals' attitudes and behaviors toward FinTech is essential for policymakers, financial institutions, and FinTech providers. One intriguing aspect is the influence of cultural orientations, particularly long-term orientation and indulgence, on individuals' appetite for FinTech. This literature review examines existing research to explore how long-term oriented and indulgent cultures shape FinTech appetite in OECD countries.

In our initial examination, we engaged in a critical analysis of several prominent theories, frameworks, and models pertaining to national culture, including Hofstede's National Culture Dimensions, Trompenaars' National Culture Framework, Hall and Hall's National Culture Model, and Lewis' Model of National Culture. While these models provide valuable perspectives on comprehending cultural disparities and their implications for human conduct, they are not without their constraints. This deliberation has enabled us to discern the pertinent cultural dimensions that play a significant role in fostering the adoption of FinTech.

Hofstede's national culture dimensions are widely recognized and frequently referenced when it comes to comprehending cultural differences among countries. Hofstede identified six cultural dimensions: power distance, individualism–collectivism, masculinity–femininity, uncertainty avoidance, long-term orientation, and indulgence versus restraint (Hofstede, 2011). These dimensions have been extensively employed to compare cultural disparities across nations and gain insights into how cultural values influence various facets of human behavior. Nevertheless, some scholars criticize Hofstede's approach for oversimplifying complex cultural phenomena and categorizing national cultures into rigid classifications. Furthermore, researchers argue that Hofstede's model has limited relevance in today's globalized and interconnected world, where cultural boundaries are increasingly blurred (Shaiq et al., 2011).

Trompenaars' national culture framework is another well-regarded model utilized to comprehend cultural differences across countries. This framework places emphasis on cultural values and norms that shape individual behavior and organizational practices (Moore, 2020). Trompenaars identified seven cultural dimensions, including universalism-particularism, individualism-communitarianism, specific-diffuse, neutral-affective, achievement-ascription, sequential-synchronic, and internal–external control (Trompenaars & Hampden-Turner, 2020). However, some scholars argue that Trompenaars' approach is too static and deterministic, failing to account for the dynamic and fluid nature of cultural change. Additionally, researchers note that Trompenaars' model primarily focuses on Western cultures and may not adequately apply to non-Western contexts (Lacerda, 2011).

Hall and Hall's national culture model underscores the significance of context and nonverbal communication in comprehending cultural disparities among countries. This model emphasizes how different cultures interpret and respond to nonverbal cues, such as gestures, facial expressions, and tone of voice (Warner-Søderholm, 2013). Hall and Hall identified three cultural dimensions: high-context versus low-context communication, monochronic versus polychronic time, and high versus low-contact cultures (Hall, 1976). However, some scholars criticize Hall and Hall's approach for focusing excessively on surface-level behaviors while overlooking deeper cultural values and beliefs. Additionally, researchers suggest that Hall and Hall's model may only be applicable to certain cultures and may oversimplify complex cultural phenomena (Cardon, 2008).

Lewis' model of national culture highlights the role of communication styles and patterns in shaping cultural differences among countries (Dunkel & Meierewert, 2004). This model categorizes cultures into three main groups: linear-active, multi-active, and reactive. Linear-active cultures prioritize schedules, deadlines, and task-oriented communication, whereas multi-active cultures emphasize interpersonal relationships and social interaction, and reactive cultures value harmony, respect, and conflict avoidance (Lewis, 2018). However, some scholars criticize Lewis' model for oversimplifying intricate cultural phenomena and relying heavily on stereotypes and generalizations. Additionally, researchers note that Lewis' model may not be universally applicable and may overlook the diversity and complexity of cultural values and beliefs (Niemi, 2019).

In conclusion, national culture theories, frameworks, and models provide valuable frameworks for comprehending cultural differences among countries. However, it is crucial to approach these models with a critical and

nuanced perspective. National culture models should serve as a starting point for cross-cultural research rather than definitive and rigid frameworks for understanding cultural disparities. Researchers should be aware of the limitations and biases inherent in these models and strive to incorporate diverse perspectives and approaches to gain a comprehensive understanding of the complex and dynamic nature of cultural differences. Ultimately, adopting a holistic and nuanced approach to cross-cultural research can lead to a more accurate and comprehensive understanding of how cultural values and norms shape human behavior, including entrepreneurial activities, management practices, and decision-making.

Furthermore, this literature review explores the influence of long-term oriented and indulgent cultures on FinTech appetite in OECD countries. Long-term oriented cultures, characterized by a focus on future planning and sustainable growth, exhibit a positive relationship with FinTech adoption. These cultures prioritize efficiency and embrace technological advancements, making FinTech services appealing for their long-term benefits (Özbilen, 2017). Indulgent cultures, on the other hand, value immediate gratification and personal enjoyment, aligning well with the convenience and user-friendly nature of FinTech. They exhibit a higher propensity for experimentation and openness to new experiences, driving their adoption of FinTech solutions (Khan & Cox, 2017). However, it is important to consider contextual factors, such as regulatory frameworks, institutional support, and demographic characteristics, that may mediate or moderate these relationships. By understanding the cultural dynamics shaping FinTech appetite, policymakers, financial institutions, and FinTech providers can tailor their strategies to effectively engage with individuals in different cultural contexts.

2.1 Long–Term Orientation and FinTech Appetite

In the contemporary literature, long-term orientation refers to the inclination to focus on the long-term implications and consequences of decisions and actions that materialize over an extended period (Lumpkin et al., 2010). Research suggests that societies with lower scores on this dimension tend to uphold longstanding traditions and societal norms, while those with higher long-term orientation exhibit a more pragmatic approach (Özbilen, 2017). Due to their pragmatic nature and greater adaptability to new customs and changing dynamics, nations with a higher long-term orientation are more inclined to embrace new technologies, including FinTech.

However, when examining the impact of long-term orientation in the empirical literature, contradictory findings have been reported. For instance, Rees and Althakhri (2008) contradicted the findings of Harzing and Hofstede (1996) by identifying a positive causal relationship between long-term orientation and resistance to diffuse change. In contrast, the latter characterized societies with long-term orientation as highly adaptive, suggesting a negative relationship between long-term orientation and the acceptance of technological change. Empirical research has also revealed that long-term-oriented cultures tend to be more innovative compared to their short-term counterparts (Waarts & Van Everdingen, 2005). Another distinctive characteristic of long-term-oriented societies is their ability to persist in their intentions despite opposition (Hofstede et al., 2010). Therefore, transitioning from a well-established financial paradigm to an unprecedented technology-based financial system would require unwavering persistence, a prominent trait of long-term-oriented societies.

Considering these findings, it can be reasoned that cultures with high long-term orientation are more likely to adopt and embrace FinTech due to their pragmatic nature, adaptability to change, innovation propensity, and persistence in pursuing their goals. The forward-thinking and future-oriented nature of FinTech align well with the values and mindset of long-term-oriented societies, as they prioritize planning for the future and sustainable growth. In the context of financial services, individuals in long-term-oriented cultures are more inclined to embrace technology that offers long-term benefits and helps them achieve their future financial goals. Thus, the positive and significant relationship between long-term orientation and FinTech appetite can be attributed to the cultural values and tendencies inherent in long-term-oriented societies.

2.2 Indulgence and FinTech Appetite

Indulgent cultures are characterized by their inclination to prioritize the gratification of basic human desires and the enjoyment of life (Hofstede et al., 2010). Such cultures, including those observed in Anglo-American countries, Denmark, and Sweden, exhibit a higher level of adaptability to technology-driven commerce (Mandler et al., 2018). Prim et al. (2017) argue that indulgent societies are more open to new ideas and willing to experiment with the latest trends, resulting in a higher level of innovation. In contrast, Khan and Cox (2017) suggest that cultures with low indulgence tend to be more pessimistic and skeptical. Optimistic societies, which are often associated with high

indulgence, display a greater willingness to try new technologies due to their belief in the future efficacy of technology (Salcedo & Gupta, 2021). On the other hand, skeptical and pessimistic cultures are more reluctant to adopt FinTech, as they harbor concerns about potential losses associated with technology-based investments. These cultures tend to exhibit cautious behavior and await empirical evidence of the technology's effectiveness before embracing it (Handoyo, 2018).

Considering the research findings, it can be argued that high-indulgence cultures are more likely to adopt and embrace FinTech due to their optimistic outlook, willingness to explore new technologies, and openness to innovation. The convenience and user-friendly nature of FinTech services align well with the values and desires of indulgent cultures, which prioritize immediate gratification and personal enjoyment. Individuals in such cultures are more open to experimenting with new digital platforms and services, including FinTech, as they seek to enhance their lifestyle and fulfill their desires (Stamolampros et al., 2020). Moreover, the novel and cutting-edge features of FinTech appeal to the curiosity and desire for novel experiences often found in indulgent cultures. Thus, the inclination of indulgent cultures to adopt FinTech can be attributed to their cultural inclination toward embracing new trends, their optimism about technology's future potential, and their desire for immediate gratification and enhanced experiences. It is worth noting that Jaiswal and Zane (2022) found indulgence to be the only cultural dimension with a consistent effect on technology adoption, further supporting the notion that FinTech adoption is likely influenced by the level of indulgence in a given culture.

Lastly, the selection of control variables in this study aims to account for a comprehensive range of supply-side factors that may influence fintech appetite. These variables represent key economic, social, and institutional dimensions that prior research has shown to affect financial innovation and technology adoption. GDP per capita growth (Haddad & Hornuf, 2019) and the Human Development Index (Iman, 2020) capture overall economic development and human capital. The Regulatory Index (Rau, 2020) and Financial Freedom Index (Liang & Reichert, 2012) reflect the regulatory environment crucial for fintech development. The Gini Index controls for income inequality, which can affect financial service adoption (Demir et al., 2020). The Financial Development Index accounts for the existing financial infrastructure (Claessens et al., 2018). The Corruption Perception Index is included as institutional quality affects fintech growth (Knewtson & Rosenbaum, 2020). Internet penetration is crucial for digital financial services (Asongu & Nwachukwu, 2018). Lastly, the Consumer Confidence Indicator provides insights into consumer sentiment, which can influence the adoption of new financial technologies (Frost, 2020). This diverse set of control variables allows for a more robust analysis by isolating the effects of our main variables of interest from other potential influencing factors. Table 1 offers a consolidated summary of key literature, providing a thorough examination of studies investigating national culture fintech appetite.

3 Data and Estimation Strategy

In this section, we cover various aspects including data description, defining the empirical model, presenting summary statistics, and explaining the rationale behind the chosen estimation approach.

3.1 Data

This research undertook an extensive data compilation from 43 OECD countries (including partner nations), spanning a duration of 9 years, encompassing the years 2012–2020. The rationale behind focusing on OECD nations lies in the presumption that, notwithstanding their overarching uniformity in terms of economic growth and development, these countries still exhibit a rich tapestry of distinct cultural attributes. For instance, certain countries within this cohort, such as Denmark, Sweden, and the United Kingdom, tend to display pronounced tendencies toward indulgence, coupled with a lesser inclination toward long-term orientation. Conversely, countries like Japan, China, and South Korea tend to manifest contrasting characteristics along these dimensions, as elucidated by Hofstede (2021).

The essential independent variables of interest, encompassing long-term orientation and indulgence, were drawn from the Hofstede National Culture Index, an esteemed resource created by the renowned Dutch scholar Greet Hofstede. The dependent variable, representing the level of engagement with FinTech, was operationalized through an analysis of the frequency of online searches for FinTech-related terms, including but not limited to "Crypto Currency Exchange," "DeFi," "NFTs," "Blockchain," and "Financial Technology." These search frequency data were procured from Google Trends.

The use of search-based proxies to measure fintech appetite is supported by a growing body of literature. Similar approaches have been employed to gauge interest and engagement in emerging technologies and financial

Table 1: Summary of empirical literature on national culture and FinTech appetite

Author(s)	Methodology			Measures	Findings	Control variables
	Sample size	Sample period	Country			
Urus et al. (2022)	176 Individuals	2022	Malaysia	Performance expectancy Effort expectancy Social influence Consumer's trust National culture (long-term orientation) FinTech adoption	The findings suggest that the cultural dimension of long–term orientation has no significant impact on shaping FinTech adoption among the graduate students of Malaysia	—
Özbilen (2017)	31 Countries	2013–2014	31 Countries	Hofstede national culture dimensions (except indulgence) Technology adoption	This study demonstrates that long-term orientation has a substantial positive influence on the adoption of new technologies	Education Income
AbdelRahim (2021)	53 Developed and developing countries	2010	53 Developed and developing countries	Indulgence Long-term orientation Risk aversion	The findings indicate a significant positive relationship between indulgence and a country's risk aversion, while long-term orientation shows a positive but non-significant impact on risk aversion	Per capita income Religiosity
Abbasi et al. (2021)	1617 SMEs	2011–2018	22 OECD countries	SME efficiency FinTechs National culture (long-term orientation and indulgence)	The findings indicate that cultures characterized by long-term orientation negatively impact the relationship between FinTechs and SME efficiency. However, it did not observe any significant moderating effect of indulgence cultures on the association between FinTechs and SME efficiency	ROIC ROE Firm size Leverage Firm growth Cash holdings
Kowalewski et al. (2021)	94 Countries	2013–2019	94 Countries	Easy availability of credit information High level of privacy protection Growth of paytech services Institutional quality National culture (long-term orientation and indulgence). FinTech and Bigtech Credit	The study revealed that long-term orientation has a notable positive effect on FinTech and Bigtech credit, whereas indulgence has a significant negative impact	Gross domestic product Global financial crises Average interest rates Level of domestic credit Traditional and alternative financial information
Picoto and Pinto (2021)	208 Individuals	2019–2020	USA, India, UK, and Brazil	Hofstede national culture dimensions (except indulgence) Intention to use mobile banking Actual usage of mobile banking	The results of the analysis indicate that long-term orientation is a significant cultural factor that impacts the connection between the intention to use mobile banking and its actual utilization	Gender Age Education

innovations. For instance, Saidi et al. (2023) employed this approach in their study on fintech's impact on financial inclusion, arguing that search volume effectively indicates public interest in fintech services. Similarly, Frost (2020) utilized Google Trends data to measure interest in specific fintech services like mobile money and cryptocurrency across countries. Demir et al. (2020) extended this methodology, using search volume for fintech-related terms as a proxy for both fintech development and interest in their analysis of economic policy uncertainty's relation to financial innovation. While Haddad and Hornuf (2019) primarily used the number of fintech startups as their main proxy, they also acknowledged the relevance of search volume data in indicating fintech interest. In the context of crowdfunding, Rau (2020) applied Google Trends data to measure interest across different countries. Furthermore, Zetzsche et al. (2020) discussed the broader implications of using search volume data as an indicator of fintech interest and potential adoption in their work on digital finance platforms. Philippas et al. (2019) utilized Google Trends data to analyze investor attention toward cryptocurrencies. Walther et al. (2019) employed search volume indices to study the relationship between investor attention and cryptocurrency returns. In the broader fintech context, Chen et al. (2019) leveraged search engine data to examine the impact of fintech adoption on bank performance. Additionally, Auer and Claessens (2018) used Google search intensity as a proxy for retail investor attention in their study of cryptocurrency market reactions to regulatory actions. These studies demonstrate the validity and utility of search-based proxies in capturing public interest and appetite for fintech innovations, supporting our methodological approach.

Furthermore, the selection of terms "Crypto Currency Exchange," "DeFi," "NFTs," "Blockchain," and "Financial Technology" to measure fintech appetite is grounded in their significance within the fintech ecosystem and their representation of key innovations. "Financial Technology" serves as a broad umbrella term encompassing the entire sector (Schueffel, 2016). "Blockchain" is a foundational technology underpinning many fintech innovations (Guo & Liang, 2016). "Crypto Currency Exchange" reflects the growing interest in digital asset trading platforms (Antonopoulos & Wood, 2018). "DeFi" (Decentralized Finance) represents a cutting-edge area of fintech that is reshaping traditional financial services (Chen & Bellavitis, 2020). Lastly, "NFTs" (Non-Fungible Tokens) signify the intersection of blockchain technology with digital ownership and creative industries (Wang et al., 2021). These terms collectively capture a comprehensive spectrum of fintech innovations, from foundational technologies to specific applications, ensuring a robust representation of fintech appetite across various dimensions.

This study acknowledges several limitations, primarily centered on the proxy used to measure fintech appetite. While Google Trends data offers valuable insights into public interest in fintech-related terms, it may not fully capture the multifaceted nature of fintech engagement and adoption. The search-based proxy is inherently subject to potential biases, including variations in internet access and usage patterns across different countries and demographics. Furthermore, the selected search terms, though carefully chosen, may not exhaustively represent the entire spectrum of fintech innovations and interests. The proxy might also be influenced by factors unrelated to genuine fintech appetite, such as temporary spikes due to news events or regulatory changes. Future research could benefit from combining this proxy with more direct measures of fintech adoption, such as user statistics from fintech platforms or regulatory data on fintech transactions, as such data becomes more widely available across countries.

3.1.1 Descriptive Statistics

Table 2 presents the descriptive statistics for the variables under investigation. The findings reveal that the sample's average gross domestic product (GDP) growth rate is 1.2% per fiscal year, indicating a modest but consistent economic expansion. The Human Development Index, a measure of overall human well-being, remains relatively high among the OECD countries included in the study, with an average value of 0.860. Moreover, with an average of 1.028, the regulatory index suggests that the surveyed governments are perceived to have effectively established regulatory frameworks for developing the public sector. The Gini inequality index, reflecting income distribution, demonstrates a relatively satisfactory level of income equality within the sample, with an average mean of 35.07. With regard to the Financial Development Index, it reveals that 60% of the countries in the sample exhibit a well-established, comprehensive, and effective network of financial institutions and markets. When considering corruption perception in the public sector, the average mean score of 62.11 suggests a relatively low level of corruption, with proximity to Denmark, which has the lowest corruption perception score of 90.

Furthermore, approximately 76% of individuals in the sample countries have access to the internet through various devices such as computers, mobile phones, PDAs, or digital TVs. The average mean of 66.58 on the Financial Freedom Index signifies a commendable level of financial freedom concerning government regulation, state ownership in financial institutions, market development, credit

Table 2: Summary statistics

	Observations	Mean	Standard deviation	Min	Max
GDP	268	1.220	3.255	−11.253	23.999
HDI	268	0.860	0.078	0.6	0.962
REGIDX	268	1.028	0.684	−0.56	2.09
INEQUAL	268	35.075	7.576	0	63
FDI	268	0.600	0.205	0.204	0.978
CPI	268	62.113	17.686	27	92
INT	268	76.036	17.534	11.1	98.82
FINFREE	268	66.587	14.503	20	90
CCI	268	100.090	2.056	88.84	105.1
LTO	268	52.333	23.502	0	100
INDU	268	47.047	22.985	0	97
FINAPP	268	102.201	89.409	0	576

Note: FINAPP is referred to the FinTech appetite prevailing within a society; GDP is labeled as gross domestic product per capita growth published by World Bank; HDI is termed the human development index developed by UNDP; REGIDX represents Regulatory Index which denotes the perception about the ability of the government in formulating and implementing polices to support private sector published by World Bank Group; INEQUAL refers to the Gini Index published by World Bank; FDI is termed as the financial development index published by International Monetary Fund; CPI is labeled as the corruption perception index which is an indicator of perceptions of public sector corruption published by Transparency International; INT represents the average number of internet subscribers published by International Telecommunication Union; FINFREE refers to the financial freedom index published by the Heritage Foundation; CCI denotes consumer confidence indicator that provides an indication of future developments of household's consumption and saving based on their perception about future economic outlook developed by OECD Index; LTO represents the national culture dimension of long-term orientation; and INDU refers to the cultural dimension of indulgence.

allocation, and openness to foreign competition across the chosen OECD nations. The population residing in these countries displays considerable confidence in their respective economies' future outlooks. Regarding cultural orientation, the sample societies exhibit a long-term orientation of 52.33% and a solid connection to their cultures while simultaneously satisfying their desires, as indicated by a level of indulgence of 47.07%. Lastly, an average of 102.201 searches per minute related to FinTech terms were conducted in the sample countries during the study period, highlighting the significance and interest in this domain.

3.2 Empirical Model

To analyze the phenomena, the following empirical model was used in this study.

First Stage (Fixed Effects):

$$\begin{aligned}\text{FINAPP}_{it} = {} & \beta_0 + \beta_1\,\text{GDP}_{it} + \beta_2\,\text{HDI}_{it} + \beta_3\,\text{REGIDX}_{\text{it}} \\ & + \beta_4\,\text{INEQUAL}_{it} + \beta_5\,\text{FDI}_{it} + \beta_6\,\text{CPI}_{it} + \beta_7\,\text{INT}_{it} \\ & + \beta_8\,\text{FINFREE}_{it} + \beta_9\,\text{CCI}_{it} + \alpha_i + \epsilon_{it}\end{aligned}$$

Second Stage (Cross-Sectional):

$$\hat{\alpha i} = \gamma_0 + \gamma_1\,\text{LTO}_i + \gamma_2\,\text{INDU}_i + \nu_i \quad (1)$$

Equation (1): Main Empirical Model

In the first stage of the model, "FINAPP" refers to the measurement of FinTech adoption within a society, "GDP" is the gross domestic product per capita growth reported by the World Bank, "HDI" stands for the human development index developed by the United Nations Development Program (UNDP), "REGIDX" represents the Regulatory Index, reflecting the perception of a government's ability to create and implement policies to support the private sector, published by the World Bank Group, "INEQUAL" refers to the Gini Index published by the World Bank, "FDI" is a ranking of countries based on the depth, access, and efficiency of their financial institutions and financial markets, as published by the International Monetary Fund, "CPI" denotes the corruption perception index, an indicator of public sector corruption perceptions published by Transparency International, "INT" represents the average number of internet subscribers as reported by the International Telecommunication Union, "FINFREE" stands for the Financial Freedom Index, evaluating government regulation, state ownership in financial institutions, market development, credit allocation, and the openness to foreign competition within the financial sector, as published by the Heritage Foundation. "CCI" denotes the consumer confidence indicator, which offers insights into future household consumption and saving based on perceptions of the future economic outlook, developed by the OECD. "LTO" represents the national culture dimension of long-term orientation, and "INDU" refers to the cultural dimension of indulgence. The symbol "αi" represents country-specific fixed effects that capture time-invariant, unobservable characteristics specific to each country. ε represents the random error term, assumed to follow a typical and independent distribution.

In the subsequent stage of our empirical investigation, "$\alpha\hat{}i$" represents the estimated fixed effects derived from the first-stage regression, capturing country-specific unobserved factors that systematically influence FinTech appetite. "LTO" denotes the long-term orientation dimension, a time-invariant cultural metric that quantifies the extent to which societies prioritize strategic, future-oriented planning and delayed gratification. "INDU" represents the indulgence dimension, a time-invariant cultural indicator measuring the societal propensity for immediate desire fulfillment and experiential enjoyment. "vi" constitutes the stochastic error term associated with the second-stage regression.

After regulating the supply-side components required for developing a fertile environment for FinTech appetite inside a society, this study scrutinizes the role national culture can play in shaping it. Therefore, a wide range of control variables, including political, economic, social, and technological development indicators, are included in the research model to control supply aspects required for proliferating FinTech in the studied context.

3.3 Estimation Strategy

Prior to conducting the empirical analysis aimed at evaluating the influence of the independent variables on the dependent variable, this study executed a series of diagnostic tests to select the appropriate estimation model. Specifically, we performed the Breusch Pagan Multiplier Test and the Hausman Test to discern the most appropriate statistical methodology for our analysis. The results indicated that the fixed effects estimator was the most pertinent approach to adopt. Nevertheless, the inherent time-invariance of the key independent variables, namely long-term orientation and indulgence, imposed constraints on the applicability of the fixed effects technique. Consequently, we chose to adopt a two-stage methodological approach, initially utilizing fixed effects estimation in a panel data context, followed by a cross-sectional analysis regressing the obtained fixed effects estimates on time-invariant country characteristics. Additionally, robust standard errors were introduced to address issues such as heteroskedasticity and autocorrelation.

3.3.1 Robustness

In order to bolster the resilience and legitimacy of our formulated model, we performed a robustness test by introducing additional control variables into our model. Specifically, we incorporated the Economic Freedom Index, Government Effectiveness Index, Talent Flight and Brain Drainage, and Mobile Subscribers per 100 as supplementary controls within our empirical framework. This deliberate refinement of the model serves the purpose of corroborating the dependability of our conclusions derived from the primary model.

First Stage (Fixed Effects):

$$\begin{aligned} \text{FINAPP}_{it} = {} & \beta_0 + \beta_1\,\text{GDP}_{it} + \beta_2\,\text{HDI}_{it} + \beta_3\,\text{REGIDX}_{it} \\ & + \beta_4\,\text{INEQUAL}_{it} + \beta_5\,\text{FDI}_{it} + \beta_6\,\text{CPI}_{it} + \beta_7\,\text{INT}_{it} \\ & + \beta_8\,\text{FINFREE}_{it} + \beta_9\,\text{CCI}_{it} + \beta_{10}\,\text{EFI}_{it} + \beta_{11}\,\text{GEI}_{it} \\ & + \beta_{12}\,\text{TFI}_{it} + \beta_{13}\,\text{MSI}_{it} + \alpha_i + \epsilon_{it} \end{aligned}$$

Second Stage (Cross-Sectional):

$$\hat{\alpha i} = \gamma_0 + \gamma_1\,\text{LTO}_i + \gamma_2\,\text{INDU}_i + \nu_i \qquad (2)$$

Equation (2): Robustness Check Equation

Whereas the additional controls included are: EFI (Economic Freedom Index) comprises ten components organized into four overarching categories: Rule of Law, Limited Government, Regulatory Efficiency, and Open Markets. This comprehensive economic freedom measure is rated on a scale from 0 to 100, where a score of 100 signifies maximum freedom. GEI gauges perceptions of the quality of public services, the competence and autonomy of the civil service, the effectiveness of policy development and execution, and the government's commitment to its policies. TFI assesses the economic ramifications of human displacement, whether due to economic or political reasons, and examines its potential impact on a country's development. A higher index value corresponds to a more significant level of human displacement. MSI encompass subscriptions to a public mobile telephone service offering access to the public switched telephone network (PSTN) through cellular technology.

The inclusion of these additional controls in our robustness test represents a crucial step in affirming the consistency and credibility of our model's outcomes concerning the focal independent variables, further solidifying the reliability of our research findings.

3.3.2 Additional Analysis

To further validate our findings and explore potential nuances in the relationship between cultural dimensions and FinTech appetite, we conducted two additional analyses beyond our primary robustness checks.

3.3.2.1 GDP Level-Based Subset Analysis

In our supplementary analysis, we sought to investigate the potential heterogeneity of cultural dimensions' impact on FinTech adoption across different levels of economic development. Utilizing the World Bank's classification of Gross National Income (GNI) per capita, we stratified our sample of OECD countries into three economic categories:

- **High GDP Countries:** Characterized by a GNI per capita exceeding $13,845.
- **Medium GDP Countries:** Defined by a GNI per capita ranging between $1,136 and $13,845.
- **Low GDP Countries:** Demarcated by a GNI per capita below $1,136.

Notably, our sample's composition – comprised exclusively of OECD member states – predominantly represents

high-income and upper-middle-income economies. Consequently, our stratification revealed no countries within the low GDP classification, thereby limiting our comparative analysis to high and medium GDP segments.

To empirically examine the complex relationship between cultural dimensions and FinTech adoption, we implemented a systematic approach of applying our baseline econometric model independently to each economic subset. This methodological strategy enables a granular exploration of how cultural determinants – particularly indulgence and long-term orientation – potentially manifest differently across varying economic contexts.

3.3.2.2 Alternative Proxy for FinTech Appetite

Our second additional analysis involved substituting our original proxy for FinTech appetite (based on Google Trends data) with the UNCTAD E-commerce Index. This index serves as a comprehensive measure of a country's readiness to engage in online commerce, which we posit is closely aligned with FinTech adoption, particularly in the realm of digital payments.

The UNCTAD E-commerce Index encompasses several key indicators that are pertinent to FinTech development and adoption:

- Internet penetration and secure server density, which provide insights into the technological infrastructure supporting FinTech services.
- The proportion of individuals utilizing the internet for payment transactions, offering a direct measure of digital financial engagement.
- A postal reliability index, which serves as an indirect indicator of the logistical and infrastructural capacity that underpins FinTech operations.

By employing this alternative proxy, we aim to corroborate our primary findings and potentially uncover additional insights into the relationship between cultural dimensions and FinTech adoption. The UNCTAD E-commerce Index offers a multifaceted perspective on FinTech readiness, potentially capturing aspects of FinTech appetite that may not be fully reflected in search trend data alone (UNCTAD, 2024).

These additional analyses serve to enhance the robustness of our study and provide a more nuanced understanding of the complex interplay between cultural factors, economic conditions, and FinTech adoption in OECD countries. The results of these analyses will be presented and discussed in detail in the subsequent sections, offering valuable insights for policymakers, industry stakeholders, and researchers in the field of FinTech and cultural economics.

4 Results

Table 3 presents a detailed summary of the findings from the estimated equations, encompassing both the main model and the robustness checks. To account for substantial variations in sample size across observations, a two-stage fixed effects regression was applied, alongside robust techniques to address potential issues such as heteroscedasticity, autocorrelation, and cross-sectional dependence. Furthermore, additional control variables were introduced into the estimated model to enhance the robustness and reliability of the findings. The analysis is further supported by two additional assessments. These include a stratified analysis of OECD countries, segmented into two subgroups based on GDP levels (high and low to medium), and a modification of the fintech appetite proxy, substituting Google Trends with the UNCTAD E-commerce Index.

The results suggest that societies with higher levels of indulgence exhibit a lower inclination toward fintech engagement (coefficient estimate [CE]: −0.030, *p*-value: 0.000). In contrast, the cultural dimension of long-term orientation shows a negative but statistically insignificant effect on fintech appetite (CE: −0.005, *p*-value: 0.435). Notably, this effect remains consistent even after introducing additional control variables for validation. The outcomes of the two supplementary analyses will be discussed in the subsequent subsection.

4.1 Additional Analysis

In Table 4, the results from our additional analyses provide nuanced insights into the relationship between cultural dimensions and FinTech appetite, complementing and extending our main findings. The stratified analysis, which examined the effects across different economic levels, reveals intriguing patterns. In the high GDP level subgroup, long-term orientation maintains a significant positive effect (CE: 0.022, *p*-value: 0.034), while indulgence exhibits a significant negative effect (CE: −0.021, *p*-value: 0.009). The empirical evidence suggests that societies characterized by long-term orientation exhibit enhanced propensity for innovation in longer run and risk-taking behavior in robust economic conditions. This relationship may be attributed to the availability of substantial resources and prevalent market optimism. However, a paradoxical relationship emerges with respect to indulgence-oriented cultures, where data indicates a negative impact on FinTech heed. This inverse relationship can be interpreted through the lens of market maturity, wherein these societies typically maintain access to well-established, traditional financial markets, which

Table 3: Two-stage fixed effects model and robustness equation results

Stage 1 (fixed effects)				
	Two-stage fixed effects model		Robustness results with additional control variables	
FINAPP	**Coefficient**	***P*** **>** ***|t|***	**Coefficient**	***P*** **>** ***|t|***
Control variable(s)				
GDP	0.047	0.127	0.047	0.591
HDI	12.290	0.019	12.620	0.492
REGIDX	1.317	0.009	1.169	0.453
INEQUAL	−0.003	0.951	−0.016	0.007
FDI	3.901	0.234	3.779	0.053
CPI	−1.737	0.170	−1.692	0.122
INT	1.007	0.076	1.023	0.051
FINFREE	0.101	0.916	0.009	0.176
CCI	4.813	0.200	0.051	0.777
Additional control(s) for robustness				
EFI	—	—	0.003	0.369
GEI	—	—	0.286	0.846
TFI	—	—	0.167	0.657
MSI	—	—	0.245	0.239
Constant	−29.747	0.109	−34.510	0.073

Note: FINAPP is referred to the FinTech appetite prevailing within a society; GDP is labeled as gross domestic product per capita growth published by World Bank; HDI is termed the human development index developed by UNDP; REGIDX represents Regulatory Index which denotes the perception about the ability of the government in formulating and implementing polices to support private sector published by World Bank Group; INEQUAL refers to the Gini Index published by World Bank; FDI is termed as the financial development index published by International Monetary Fund; CPI is labeled as the corruption perception index which is an indicator of perceptions of public sector corruption published by Transparency International; INT represents the average number of internet subscribers published by International Telecommunication Union; FINFREE refers to the financial freedom index published by the Heritage Foundation; CCI denotes consumer confidence indicator that provides an indication of future developments of household's consumption and saving based on their perception about future economic outlook developed by OECD Index; EFI represents Economic Freedom Index developed by the Heritage Foundation; GEI denotes Government Effectiveness Index published by World Bank; TFI assesses the economic ramifications of human displacement, whether due to economic or political reasons, and examines its potential impact on a country's development; MSI encompass subscriptions to a public mobile telephone service offering access to the PSTN.

Stage 2 (cross- sectional)				
FINAPP	**Coefficient**	***P*** **>** ***|t|***	**Coefficient**	***P*** **>** ***|t|***
Focus variable(s)				
LTO	−0.005	0.435	−0.005	0.435
INDU	−0.030	0.000	−0.030	0.000
Constant	1.746	0.006	1.746	0.006

Note: FINAPP is referred to the FinTech appetite prevailing within a society; LTO represents the national culture dimension of long-term orientation; and INDU refers to the cultural dimension of indulgence.

present lower risk profiles and more predictable returns on investment. Such established markets may consequently diminish the perceived utility and appeal of emerging FinTech solutions for high indulgent individuals.

Within the subset of nations characterized by low to medium GDP levels, both long-term orientation and indulgence exhibit statistically significant positive impact (CE: 0.017 and 0.033, respectively, *p*-value: 0.000 for both variables). This empirical evidence suggests that in economically constrained environments, these cultural dimensions serve as catalysts for financial innovation and calculated risk-taking behavior. The phenomenon can be interpreted as a response to limited economic opportunities, whereby societies leverage these cultural attributes to navigate and overcome the constraints imposed by existing underdeveloped financial infrastructure. This adaptive response appears to be driven by the necessity to identify and exploit alternative financial pathways in contexts where traditional financial systems remain inadequately developed or accessible.

In Table 5, the alternative proxy analysis, utilizing the UNCTAD E-commerce Index as a measure of FinTech appetite, yields results that align with our main analysis. Long-term orientation shows an insignificant negative effect (CE: −0.243, *p*-value: 0.070), while indulgence demonstrates a more pronounced significant negative effect (CE: −0.950, *p*-value: 0.001). These findings corroborate our primary results, indicating that the negative relationship between these cultural dimensions and FinTech appetite is robust across different measures of FinTech readiness and adoption.

5 Discussion of the Findings

The present study investigates the influence of cultural dimensions, specifically long-term orientation and indulgence, on FinTech appetite in OECD countries. Our findings reveal a complex interplay between these cultural factors and FinTech adoption, moderated by economic conditions.

Our main analysis indicates a significant negative causal relationship between indulgence and FinTech appetite, while long-term orientation shows a negative but statistically insignificant effect. These results suggest that societies characterized by higher levels of indulgence exhibit a lower propensity for FinTech adoption. This finding aligns with the cultural dimensions theory proposed by Hofstede et al. (2010), who posit that indulgent cultures prioritize immediate gratification and may be less inclined toward long-term financial planning. In the context of FinTech, which often requires users to adapt to new technologies

Table 4: Stratified analysis of OECD country subgroups by GDP levels (high and low to medium)

Stage 1 (fixed effects)				
	High GDP level		Low to medium GDP level	
FINAPP	**Coefficient**	***P*** **>** **|*t*|**	**Coefficient**	***P*** **>** **|*t*|**
GDP	0.004	0.927	0.082	0.049
HDI	4.907	0.711	8.874	0.118
REGIDX	1.954	0.010	0.197	0.788
INEQUAL	0.049	0.736	−0.022	0.740
FDI	3.870	0.517	1.968	0.628
CPI	−2.069	0.531	−0.434	0.759
INT	4.541	0.085	0.931	0.094
FINFREE	1.545	0.623	−0.052	0.956
CCI	11.357	0.154	−1.417	0.759
Constant	−78.190	0.048	1.487	0.948

Note: FINAPP is referred to the FinTech appetite prevailing within a society; GDP is labeled as gross domestic product per capita growth published by World Bank; HDI is termed the human development index developed by UNDP; REGIDX represents Regulatory Index which denotes the perception about the ability of the government in formulating and implementing polices to support private sector published by World Bank Group; INEQUAL refers to the Gini Index published by World Bank; FDI is termed as the financial development index published by International Monetary Fund; CPI is labeled as the corruption perception index which is an indicator of perceptions of public sector corruption published by Transparency International; INT represents the average number of internet subscribers published by International Telecommunication Union; FINFREE refers to the financial freedom index published by the Heritage Foundation; CCI denotes consumer confidence indicator that provides an indication of future developments of household's consumption and saving based on their perception about future economic outlook developed by OECD Index.

Stage 2 (cross- sectional)				
	High GDP level		Low to medium GDP level	
FINAPP	Coefficient	*P* > |*t*|		
LTO	0.022	0.001	0.017	0.000
INDU	−0.021	0.009	0.033	0.000
Constant	0.024	0.971	−2.261	0.000

Note: FINAPP is referred to the FinTech appetite prevailing within a society; LTO represents the national culture dimension of long-term orientation; and INDU refers to the cultural dimension of indulgence.

and potentially delay immediate rewards for future benefits, this cultural trait may indeed act as a barrier to adoption.

The relationship between indulgence and technology adoption is complex and context-dependent. While some studies have suggested that indulgent cultures might be more open to new technologies due to their emphasis on enjoyment and personal gratification (Srite & Karahanna, 2006), our findings indicate that in the specific context of FinTech, the relationship is negative. This aligns with research by Faqih and Jaradat (2015), who found that the adoption of financial technologies involves a higher degree of perceived risk and complexity compared to other forms of technology adoption. Moreover, the negative relationship between indulgence and FinTech appetite is indicative of broader societal attitudes toward financial management. Chui and Kwok (2008) found that indulgent cultures tend to have lower savings rates and higher consumption levels. These cultural tendencies may naturally lead to less engagement with financial technologies that emphasize savings, investment, and long-term financial planning (Czarnecka and Schivinski, 2019).

Table 5: Baseline equation results with alternative proxies for FinTech appetite

UNCTAD	**Coefficient**	***P*** **>** **|*t*|**
GDP	0.560	0.733
HDI	96.491	0.565
REGIDX	−7.649	0.630
INEQUAL	0.553	0.793
FDI	−33.500	0.578
CPI	74.116	0.203
INT	9.852	0.777
FINFREE	−42.413	0.271
CCI	1.932	0.277
Constant	−439.394	0.392

Note: UNCTAD is referred to the e-commerce index encompasses several key indicators that are pertinent to FinTech development and adoption; GDP is labeled as gross domestic product per capita growth published by World Bank; HDI is termed the human development index developed by UNDP; REGIDX represents Regulatory Index which denotes the perception about the ability of the government in formulating and implementing polices to support private sector published by World Bank Group; INEQUAL refers to the Gini Index published by World Bank; FDI is termed as the financial development index published by International Monetary Fund; CPI is labeled as the corruption perception index which is an indicator of perceptions of public sector corruption published by Transparency International; INT represents the average number of internet subscribers published by International Telecommunication Union; FINFREE refers to the financial freedom index published by the Heritage Foundation; CCI denotes consumer confidence indicator that provides an indication of future developments of household's consumption and saving based on their perception about future economic outlook developed by OECD Index; LTO represents the national culture dimension of long-term orientation; and INDU refers to the cultural dimension of indulgence.

UNCTAD	**Coefficient**	***P*** **>** **|*t*|**
LTO	−0.243	0.070
INDU	−0.950	0.000
Constant	66.620	0.000

Note: UNCTAD is referred to the e-commerce index encompasses several key indicators that are pertinent to FinTech development and adoption; LTO represents the national culture dimension of long-term orientation; and INDU refers to the cultural dimension of indulgence.

The insignificant effect of long-term orientation in our main analysis initially appears counterintuitive, given that FinTech adoption often requires forward-thinking and investment in future capabilities. However, this result suggests that the relationship between long-term orientation and FinTech adoption may be influenced by other contextual factors not captured in the main analysis.

Furthermore, the varying effects of cultural dimensions across different economic contexts in our additional analysis underscores the importance of considering macroeconomic factors when examining FinTech appetite. This finding contributes to the growing body of literature on the contextual nature of technology adoption, as highlighted by Venkatesh and Zhang (2010), who emphasized the need for a more nuanced understanding of how cultural factors interact with environmental conditions to influence technology acceptance. Similarly, Zhao et al. (2015) argued that the impact of cultural dimensions on technology adoption is not uniform but rather moderated by environmental factors such as economic conditions and institutional frameworks.

Our findings have significant implications for both theory and practice. From a theoretical perspective, they contribute to the ongoing debate about the universality of cultural dimensions in predicting technology adoption. The varying effects of long-term orientation and indulgence across different economic contexts support the argument for a more nuanced, context-dependent approach to understanding cultural influences on technology adoption, as advocated by Srite and Karahanna (2006) and further developed by Caprar et al. (2015) in their review of cross-cultural organizational behavior.

6 Conclusion and Recommendations

This research investigated the relationship between cultural dimensions (long-term orientation and indulgence) and FinTech adoption across OECD countries, analyzing data from 43 nations over 2012–2020. The study employed Hofstede's National Culture Index and Google Trends data, utilizing a multi-stage fixed effects model with robust standard errors.

Our findings reveal significant insights into the cultural dynamics of FinTech adoption. The main analysis demonstrated a consistent negative relationship between indulgence and FinTech appetite, indicating that highly indulgent societies show lower propensity for FinTech adoption. This aligns with Hofstede's cultural dimensions theory, suggesting that cultures prioritizing immediate gratification may be less inclined toward financial technologies requiring longer-term adaptation and planning. The effect of long-term orientation proved more nuanced, varying across different economic contexts. This finding highlights the complex interplay between cultural dimensions and economic conditions in shaping FinTech adoption patterns. Our alternative proxy analysis using the UNCTAD E-commerce Index corroborated these findings, enhancing their robustness and extending their implications to the broader digital economy.

The implications of these findings are particularly relevant for various stakeholders in the FinTech ecosystem. For FinTech companies, the results suggest the critical importance of integrating cultural sensitivity into product design and user interfaces. Companies should consider tailoring their solutions to match the cultural values of their target markets, with particular attention to the balance between immediate benefits and long-term financial planning features. In high-indulgence societies, emphasis should be placed on immediate benefits and user-friendly interfaces, while solutions targeted at long-term oriented cultures should focus on stability and future financial benefits.

From a policy perspective, our findings underscore the need for culturally sensitive regulatory frameworks. Policymakers should consider implementing financial literacy programs, particularly in cultures with low long-term orientation, while creating regulatory sandbox environments that foster innovation while maintaining appropriate oversight. The research suggests that policy effectiveness may be enhanced through cross-border partnerships that facilitate knowledge sharing and the development of culturally appropriate regulatory approaches.

Marketing strategies in the FinTech sector should be carefully aligned with cultural values, as our findings indicate significant variations in technology adoption patterns across different cultural contexts. This necessitates a nuanced approach to communication, where messaging is tailored to resonate with local cultural values while maintaining the integrity of the financial products and services offered.

Future research directions emerging from this study suggest several promising avenues for investigation. Scholars should consider exploring additional cultural dimensions within Hofstede's framework, as well as investigating alternative cultural models such as those proposed by Trompenaars and Hall and Hall. Furthermore, examining specific FinTech solutions such as mobile payments, robo-advisors, and peer-to-peer lending could provide more granular insights into the relationship between cultural dimensions and specific technological applications.

This research makes a significant contribution to the growing body of knowledge on cultural influences in

FinTech adoption, offering both theoretical insights and practical implications for stakeholders across the FinTech ecosystem. The findings underscore the importance of considering both cultural and economic factors in developing and promoting FinTech solutions, suggesting that success in this sector requires a nuanced, context-dependent approach that respects and responds to cultural differences while adapting to varying economic conditions. The study's results provide a foundation for understanding how cultural dimensions influence FinTech adoption, while also highlighting the need for continued research in this rapidly evolving field.

Acknowledgments: The authors acknowledge the support of Qatar National Library for providing Open Access funding for this publication. This article is published under the Creative Commons Attribution (CC-BY) license, in alignment with the library's open-access policy.

Funding information: Authors state no funding involved.

Author contributions: All authors have accepted responsibility for the entire content of this manuscript and consented to its submission to the journal. All the authors have read and agreed to the published version of the manuscript. S.M.H., A.F.A., and U.N.K. contributed equally to all aspects of this research. A.F.A. and U.N.K. jointly contributed to the conceptualization, methodology development, and study design. S.M.H. contributed to conceptualization, study design, methodology development, data collection and analysis, and software implementation. All authors collaborated on validating the results, performing formal analysis, and interpreting the data. S.M.H. and A.F.A. prepared the original draft and participated in reviewing and editing the manuscript.

Conflict of interest: Authors state no conflict of interest.

Data availability statement: The data that support the findings of this study are available from the Greet Hofstede National Culture Index: https://www.hofstede-insights.com/country-comparison-tool and Google Trends https://trends.google.com/trends/ (accessed on 19 August 2023).

Article note: As part of the open assessment, reviews and the original submission are available as supplementary files on our website.

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