

Tourism Development and Financial Inclusion: The Role of Contextual Factors in Vietnam

Dinh Van Nguyen¹, Dao Van Le², Tuyen Quang Tran^{3,*}

¹International School, Vietnam National University, Hanoi
e-mail: dinhnguyensvnu@gmail.com, dinhnv@vnuis.edu.vn
ORCID: 0000-0001-5149-1370

²International School, Vietnam National University, Hanoi
World Bank, Hanoi, Vietnam
e-mail: daoisvnu@gmail.com
ORCID: 0000-0001-5044-0264

³International School, Vietnam National University, Hanoi
e-mail: tuyenisvnu@gmail.com
ORCID: 0000-0002-0221-1480

* Corresponding author: Tuyen Quang Tran, tuyenisvnu@gmail.com, dinhnv@vnuis.edu.vn

Abstract

This study investigates the relationship between tourism development (TD) and financial inclusion (FI) in Vietnam, considering the influence of contextual factors such as domestic private sector development, education attainment, and institutional quality. The study employs a two-step generalised method of moments (GMM) estimator to address unobservable heterogeneity, simultaneity, and dynamic potential endogeneity for consistent estimation. The findings support the theoretical perspective of ecotourism and tourism-led growth, revealing that increased tourism revenue, passenger arrivals, shopping malls, and goods sales positively contribute to the FI index and its components. Notably, the study highlights the moderating role of domestic private sector development, effective institutions, and higher education levels in enhancing the nexus. Based on our findings, policy implications are drawn to foster sustainable tourism and financial inclusion. First, policymakers should prioritise supporting the growth of domestic private sector enterprises, emphasising local ownership for mutual benefits. Second, investing in education, especially in underserved areas, is essential for improving financial inclusion, as higher education levels facilitate engagement with formal financial services and reduce financial voluntary exclusion. Third, enhancing institutional quality is vital to creating a fair and transparent environment in the tourism industry, promoting responsible practices, and empowering local communities.

Key words

tourism development, financial inclusion, sustainability, Vietnam.

Cite as:

Nguyen, D.V., Le, A.V., & Tran, T.Q. (2024). Tourism Development and Financial Inclusion: The Role of Contextual Factors in Vietnam. *Forum Scientiae Oeconomia*, 12(2), 117–141. https://doi.org/10.23762/FSO_VOL12_NO2_7

Received: 4 January 2024

Revised: 29 April 2024

Accepted: 10 June 2024



Copyright: © 2024 by the authors. For open-access publication within the terms and conditions of the Creative Commons Attribution (CC BY) licence (<https://creativecommons.org/licenses/by/4.0/>).

Introduction

Financial inclusion is a critically important factor in driving economic growth, poverty reduction, and sustainable development. Indeed, access to a diverse range of financial services empowers individuals and businesses to participate actively in the economy, make informed financial decisions, and improve their overall well-being (Demirguc-Kunt et al., 2018; Xu et al., 2022). Siddik (2017) highlights its significant role in empowering women and its contribution to economic growth and various social aspects (e.g. education, poverty reduction, and health) through improving business health, as access to credit and financial services allows entrepreneurs and SMEs to grow and invest in productive ventures. Financial inclusion is also seen as complementary to anti-money laundering and counter-terrorist financing efforts, as it enhances transparency (De Koker and Jentzsch, 2013). Notably, it is also seen as a cushion to mitigate the negative impacts incurred during the COVID-19 period, especially in developing countries, where it improves food insecurity (Arshad, 2022). Thus, improving financial inclusion has gained significant attention from both the scientific community and policymakers (Sanderson et al., 2018).

Despite numerous studies identifying the improvement of financial inclusion (e.g. institutional arrangements, economic growth, and educational attainment), there has been limited emphasis on the role of tourism development, one of the most significant contributors to economic growth and social welfare. For example, in Vietnam, tourism contributed to GDP, increasing from 6.3% in 2015 to 9.2% in 2019 before being severely impacted by COVID-19. Moreover, the profound effects of the pandemic and social distancing measures have drawn considerable attention to this sector throughout the recovery process. It is worth noting that empirical studies focusing on the causal relationship between tourism development and financial inclusion are scarce, while theoretical evidence is relatively abundant. Thus, this study aims to assess the causal effects of tourism development on financial inclusion and its components.

There are at least two additional reasons why examining the role of tourism development (TD) in financial inclusion (FI) is essential: (i) it is crucial to establish a sustainable tourism strategy, assessing its impact on various aspects of the economy, where finance serves as its lifeblood; and (ii) reevaluating the relationship between tourism development and comprehensive finance provides a more accurate perspective for their post-COVID-19 recovery. Moreover, the TD–FI relationship is complex and requires consideration of multiple interrelated development conditions, given the fragmented nature of the tourism industry. Accordingly, each element, such as landscapes, cuisine, lodging, and local culture, plays a crucial role in ensuring sustainable tourism development. As Le and Tran (2023, p. 2) noted, “it requires the alignment of stakeholders in the exploitation of public heritage and chain tourism services such as catering, accommodation, and regulation with local governing bodies”. Thus, a deeper understanding of the contextual conditions is necessary to harness the benefits of tourism development for the local community. Scheyvens (1999) claims that tourism’s ultimate goal is to empower the local community to develop their culture and indigenous tourism.

This research makes several contributions. First, it identifies the causal relationship between tourism development (TD) – represented by four dimensions, namely tourism revenue, passenger arrivals, consumer goods consumption, and commercial centres – and financial inclusion in Vietnam from 2013 to 2020. Considering its rapid socio-economic transformations, studying a dynamic economy such as Vietnam is noteworthy (Fan et al., 2019). Vietnam has a prosperous and fast-growing tourist sector, as well as various UNESCO-recognised tangible and intangible heritages and sub-national

policy independence at the provincial level, referred to as an “independent laboratory” (Tu-Anh and Perkins, 2021). This sub-national focus creates favourable conditions for establishing causal relationships.

Second, we utilise the generalised method of moments (GMM) estimator with UNESCO-recognised heritage as an exogenous instrumental variable to account for unobservable heterogeneity, potential dynamic endogeneity, and simultaneity. The study combines household-level data to assess the financial inclusion index with provincial-level macro data, creating a unique panel dataset for impact evaluation. Third, the study is a pioneer in assessing the role of contextual factors in moderating the relationship between TD and FI. Accordingly, we concentrate on three common discussions: the need for a practical institutional framework (e.g. formalisation and corruption reduction), private sector development (both domestic and foreign), and educational attainment. Our research aims to help policymakers understand the significance of contextual factors in constructing sustainable tourism development strategies, empowering local communities, and preserving indigenous cultures against the encroachment of modern forms of entertainment. Furthermore, the study contributes to the body of knowledge related to sustainable tourism development and improved financial inclusion.

The remaining parts of the study are organized as follows: Section 2 provides a literature review on discussions related to the impact of tourism development on financial inclusion and the specific context in Vietnam. Section 3 presents the research data and methodology, followed by Section 4 presents the research findings. Section 5 discusses the achieved results and proposes some policy implications.

1. Literature review

1.1. *Tourism development and financial inclusion*

Karpowicz (2016) states that barriers to financial exclusion can be classified into access, depth, and efficiency. Accordingly, access barriers are related to physical infrastructure, documentation requirements set by financial institutions, and bureaucratic procedures involved in accessing financial services, while depth barriers encompass collateral requirements, information disclosures, and contract enforcement procedures. Indeed, factors like distance to financial facilities and burdensome paperwork can discourage both individuals and businesses from utilizing formal financial services, making them significant hindrances to financial inclusion (Demirguc-Kunt et al., 2018).

Regarding efficiency, Honohan (2008) continues that the informal market faces constraints due to limited capacity and resources, and the formal financial market's operations are influenced by rules and regulations that may lead to the exclusion of marginalized groups. Financial exclusion may also arise voluntarily, referred to as “voluntary exclusion” (Sanderson et al., 2018). This occurs when individuals, for religious, cultural, or disinterest reasons, choose to store money at home using traditional methods like burying it in jars, considering it a characteristic and secure practice among local communities. Moreover, limited financial services in underdeveloped regions, combined with the risk of fraud, may further diminish local residents' trust in these offerings, resulting in limited financial inclusion opportunities. Given the arguments above, tourism development (TD) can enhance financial inclusion through various mechanisms, as indicated by previous studies. *First*, TD often requires infrastructure improvements, primarily through increased private sector investments in transportation networks, communication systems, and banking facilities. For instance, the influx of tourists motivates financial institutions to expand their services to cater to both tourists and local residents (Kusluvan et al., 2010). This expansion creates the establishment of new branches, ATMs, and mobile banking

services in underserved areas, thereby improving financial access. These infrastructure investments enhance the availability of financial services, particularly in remote regions, thus broadening the reach of formal financial institutions (Sarma & Pais, 2011).

Furthermore, improved access to banking services, including mobile banking and digital payment systems, allows previously unbanked individuals and small businesses to engage in the formal financial system, resulting in economic empowerment and fostering financial inclusion (Donovan, 2012). Arner et al. (2020) assert that this empowerment benefits local businesses and individuals by facilitating savings, credit access, and investment opportunities. *Second*, expanding the tourism industry creates employment prospects, particularly within the informal sector, resulting in higher income levels and reduced poverty rates (Giaoutzi & Nijkamp, 2006). As individuals experience improved financial circumstances, they become more inclined to interact with formal financial services, including opening bank accounts, accessing credit facilities, and utilizing savings products. This heightened involvement in formal financial services provides a foundation for accessing other financial instruments, such as insurance and investment opportunities, thus enhancing financial inclusion (Giaoutzi & Nijkamp, 2006). *Third*, tourism development catalyzes entrepreneurship and the growth of small and medium-sized enterprises (SMEs) (Liu, 2003), contributing to the expansion of the financial sector and the diversification of financial services. In response to the demands of the tourism industry and associated businesses, financial institutions introduce innovative financial products tailored to the needs of entrepreneurs, such as microcredit and microinsurance, which facilitate financial inclusion among previously underserved populations. This mechanism, which reduces involuntary exclusion (Sanderson et al., 2018), enhances trust in the financial system and addresses barriers like affordability, inappropriate product design, and eligibility criteria. As stated by Deaton (2013), developing new products through the growth of private enterprises makes them more accessible, affordable, and beneficial for all, including the poor and vulnerable in society. Ohlan (2017) adds that the upsurge in tourism creates a demand for various goods, services, and experiences, opening opportunities for local entrepreneurs to enter the market and cater to these needs. To seize these opportunities, entrepreneurs often require access to financial services to initiate or expand their ventures. Notably, tourism development has notable impacts in reducing voluntary exclusion, as the exposure to foreign tourists may influence the local residents' mindset regarding financial services. Positive experiences with financial services combined with increased demand for larger payment transactions contribute to enhancing trust levels and knowledge utilization of financial services, ultimately improving financial inclusion.

The consideration of tourism as a driver of FI has faced significant criticism. *First*, as observed during the COVID-19 pandemic, an overreliance on tourism as the primary economic sector can render local economies vulnerable. This overdependence may impede diversification efforts, limiting the growth of other industries and reducing economic resilience, especially in light of fluctuations in tourist arrivals and economic downturns caused by the pandemic (Podhorodecka, 2018). *Second*, the influx of tourists often leads to price hikes, particularly in popular tourist destinations, making living costs unaffordable for local residents. Consequently, they may struggle to cope with escalating rents, food prices, and other essential needs. It is essential to note that in economies heavily reliant on tourism during the COVID-19 era, rapid decreases in cash flow (mainly from tourism) have generated significant financial costs across various service sectors. Thus, this has restricted the introduction of new financial services and increased the financial burden on existing services (Podhorodecka, 2018).

Another reason in the specific context of developing countries and decisive government intervention is crowding-out effects. Indeed, the need to invest in and maintain tourist infrastructure, encompassing airports, hotels, roads, and utilities, make local governments may bear the burden of these costs, diverting resources from other crucial sectors like education, healthcare, and public services. This imbalance can impede overall financial development and worsen inequalities within the community (Hall & Lew, 2009). Another concern relates to the time lag in the impact of tourism on FI. Indeed, when destinations invest in tourism infrastructure and services, it takes time for these developments to attract an increasing number of visitors and generate substantial tourist expenditures, which, in turn, go to positive effects on the financial status of the local economy (e.g., business revenues and government taxes & fees) (Balaguer & Cantavella-Jorda, 2002; Comerio & Strozzi, 2019). However, a thriving tourism industry can bolster a destination's reputation over time, attract further investments, and significantly contribute to economic and financial market growth (Tugcu, 2014).

1.2. The roles of conditional background

Tourism is a highly fragmented industry, different from others that produce a specific product, necessitating the involvement of multiple stakeholders. This, for example, includes public governments for exploiting public heritage, the private sector for chain tourism services, and local residents for their indigenous culture. Specifically, concerning the financial domain, developing tourism to yield financial welfare for local populations requires several factors, such as the commitment of local businesses, effective institutional frameworks, and educational attainment. Manyara and Jones (2007) emphasize the concept of community-based enterprises (CBEs) and underscore the role of the private sector in empowering local communities compared to foreign corporations, which may increase local dependence on their operations, including financial aspects. The authors argue that revenue generated by local enterprises tends to circulate within the community, benefiting a broader range of stakeholders and contributing to the local economy. For example, in Vietnam, the rapid increase in tourist arrivals in the Northwest provinces (e.g., Sa Pa) does not significantly boost the local revenue because tourists spend little in these areas, given the facts that limited development of local products/services.

Duval (2004) also cautions that in areas with substantial tourism revenue, large multinational corporations and international hotel chains often dominate the local tourism industry, leading to the repatriation of profits to their home countries. This dominance of foreign corporations can create challenges for locally-owned enterprises, resulting in a loss of economic benefits within the community. Additionally, tourists' demand for imported goods and services can further exacerbate leakages, where a significant portion of tourist spending remains outside the local economy (Canh & Thanh, 2020; Nguyen et al., 2021). It should be noted that fostering financial inclusion is not solely about providing access but also involves stimulating employment and generating revenue at the local level. Scheyvens (1999) concludes that empowering residents in the tourism development process is an ultimate goal in national development, enriching indigenous cultures.

The institutional framework is the next crucial moderating factor, besides the maturation and integration of the domestic private sector. Accordingly, given that some developing countries possess famous landmarks (e.g., the pyramids in Egypt), when there is a significant proportion of informal sector activities, an increase in the number of tourists not only fails to improve the local financial market but may exacerbate the prevalence of informal financial services. This is because, in some underdeveloped regions, local residents try to take advantage of tourists ("rid off") for various tourism-related expenses (e.g., taxi fares to reach historical sites or fees for guided tours). To do so, they must

rely on cash-based payment methods. It should be noted that evolving private services (e.g., Uber and Grab) mitigate this issue.

In the same vein, Buultjens et al. (2016) find that although Sri Lanka experienced a large influx of foreign tourists, the government's ineffective policies negatively impacted the livelihoods of economically disadvantaged individuals in various sectors, including the financial sector. At a more effective management level, Stone and Stone (2011, p. 97) affirm that different institutional and governance mechanisms result in different impacts on tourism development, particularly emphasizing the significance of "training for local people in tourism and management and use of single-community rather than multi-community trusts."

Education is another crucial factor in transforming tourism benefits into financial well-being for individuals. For instance, education enriches the positive nexus by equipping individuals with the necessary skills and knowledge to access formal financial services, make informed decisions, and foster entrepreneurship. This empowerment of local communities promotes economic diversification and ensures sustainable growth (Atkinson & Messy, 2013; Nawaz, 2022). Taking all the aforementioned arguments into consideration, combined with the time lag effects of tourism development on financial inclusion, it explains why some studies, when examining the general equilibrium analysis, do not observe clear impacts (Kumar, 2014).

1.3. Vietnam's context

Financial inclusion for individuals in Vietnam has shown significant progress in recent times, primarily due to the combined efforts of the government, the private sector, and technological advancements. The nation has achieved notable advancements in expanding access to formal financial services for its population by adopting digital payment systems and mobile banking platforms, such as Momo, Shopee Pay, ZaloPay, and other online payment services. In the context of local tourism activities in Thua Thien Hue province, for example, Huế-S has been developed to facilitate payments for tourism-related expenses.

However, foreign direct investment (FDI) in the tourism sector in Vietnam has been relatively limited. As of 2021, the total number of investment projects in accommodation and food services, as well as arts, entertainment, and recreation, were only 26 and 1, respectively, out of 1818 projects. Similarly, the registered capital for these projects accounted for less than 0.5% of the overall FDI registered (General Statistical Office [GSO], 2023a). Nonetheless, it is worth mentioning that commercial centres in major cities have seen significant contributions from foreign companies, such as Aeon Mall (Japan), Saigon Centre, and Diamond Plaza (Singapore). Vietnam's financial access can be categorized into three types: formal (banking and state-owned financial institutions), informal (relatives, informal networks, and some alternative methods like Hui/Ho), and semi-informal (Putzeys, 2002). Notably, a considerable disparity exists in the level of financial development across the country; Accordingly, predominantly underdeveloped regions mainly rely on informal financial sources (e.g., from relatives), while big cities show relatively substantial ownership rates of bank accounts, ATMs, credit cards, and online payment services. The figure below illustrates the variations in the four component indices for financial inclusion in Vietnam.

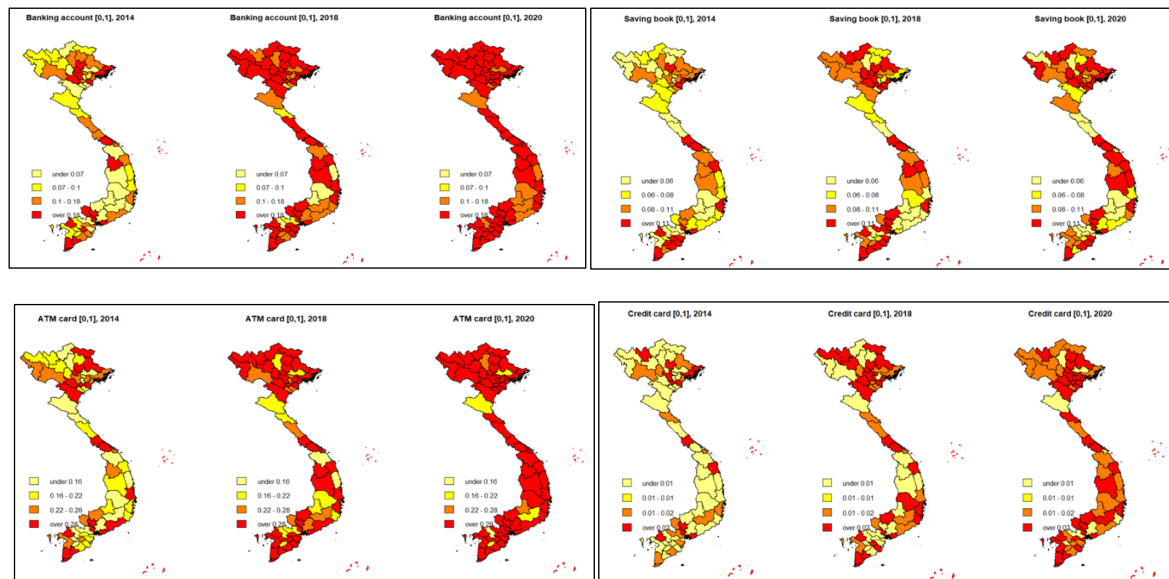


Figure 1. The evolution of financial inclusion components, 2014-2020

Note: The data is computed at the household level and aggregated to the province/city level.

Source: Authors.

The impact of various contextual factors (e.g., private sector development, institutional framework, and educational attainment) on financial inclusion in Vietnam is quite evident. Specifically, in the pre-COVID-19 era, the Northwestern mountainous regions, such as Sa Pa (Lào Cai), Mộc Châu (Sơn La), and Hà Giang, characterized by a high concentration of ethnic minority groups and attractive tourist destinations, witnessed a rapid expansion of banking services, including ATM and credit card account openings. Also, online payment services for tourism-related transactions experienced increased utilization.

Concerning government management, the phenomenon of “zero-dong tours” or “negative-price tours” does raise the hypothesis about the sound institutional framework requirement for the nexus between TD and FI. In such tours, foreign travel companies cover all expenses for welcoming tourists, including monetary incentives to the companies that send the tourists. These foreign companies recoup their initial costs through additional services or shopping experiences at the destination, and these services are primarily connected with other foreign companies rather than local service providers. Consequently, domestic travel agencies do not profit significantly from such cheap or “zero-dong” tours, as most of the profits flow back to the travel companies in the tourists’ country of origin.

Regarding the impact of educational attainment on the relationship, a noticeable phenomenon can be observed in the North Central and Northern Mountainous regions. In these areas, both the role of tourism and educational attainment have experienced notable increases. Specifically, the North Central and Northern Mountainous regions have seen a considerable rise in tourist revenues, from 141.7 billion VND in 2014 to 387.7 billion VND in 2019. Moreover, educational attainment has significantly improved, with the proportion of high school graduates increasing from 65.76% in 2006 to nearly 97.84% after ten years in 2016 (General Statistical Office [GSO], 2023b). These regions also exhibit a high growth rate in the adoption of formal financial services (ATM cards, bank accounts, and credit cards) compared to other regions in the country. The figure below illustrates a comparison of financial inclusion indices (detailed calculation provided in the subsequent section) at each percentile level.

Accordingly, the left panel of Figure [2] illustrates that provinces/cities with higher levels of educational attainment (literacy $\geq 50\%$) exhibit greater financial inclusion across all percentiles, while the right panel of Figure [2] asserts that those with better public governance (as indicated by the Provincial Competitiveness Index [PCI]) demonstrate higher performance in terms of financial inclusion.

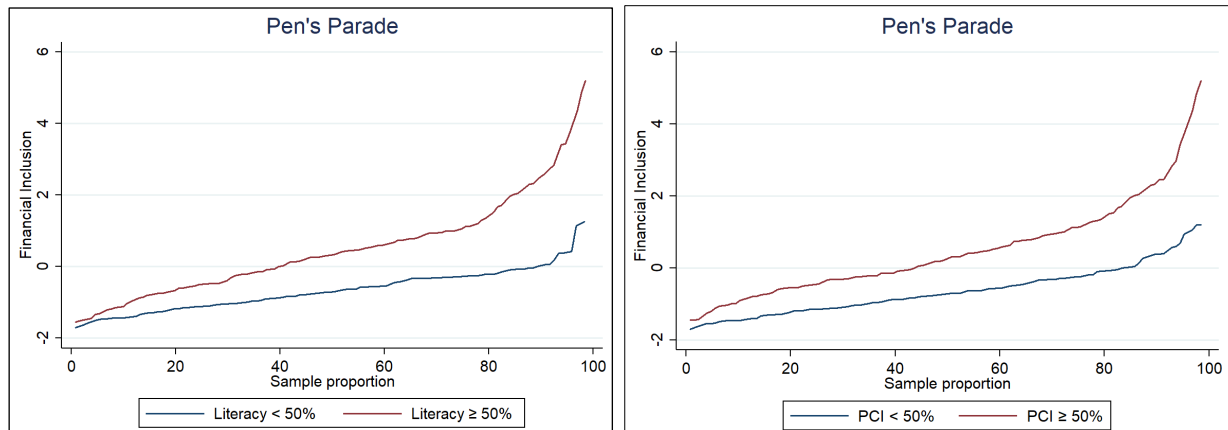


Figure 2. Pen's Parade for financial inclusion based on the literacy and institutional level, Vietnam from 2013 to 2020

Source: Authors. Notes: The acronym PCI refers to the Provincial Competitiveness Index, which reflects a superior quality of public governance from a business perspective.

2. Data and methodology

2.1. Data

Sanderson et al. (2018) review studies investigating the determinants of financial inclusion and find that most research employs two main types of data: micro-level data (individual or household level) or macro-level national data. While micro-level studies may not account for factors related to local cultural characteristics, national-level research does not guarantee to identify heterogeneous unobservable factors influencing local financial development (Patten, 2016). Hence, this study leverages data at the sub-national level (i.e., the 63 provinces and cities in Vietnam). We utilize data from three primary sources.

First, financial inclusion refers to individuals' and families' access and usage of affordable financial services and products to manage their financial needs effectively. This concept encompasses the availability and usage of services like savings accounts, loans, insurance, payment systems, and other financial tools that are accessible, affordable, and suitable for households to participate fully in the formal financial system (Demirguc-Kunt et al., 2018). Following this definition, Tran and Dinh (2021) provide available data to examine the level of comprehensive financial inclusion in Vietnam from the household-level Vietnam Household Living Standards Survey (VHLSS) dataset, including indicators such as receiving larger formal loans, having bank accounts, savings books, and ATM cards. It is worth noting that VHLSS also records some information about non-life insurance. However, upon detailed examination, most of these insurance types are not related to financial services but primarily personal property insurance (e.g., home or automobile). The household-level data is then aggregated at the provincial level annually and is available from 2014 to 2020.

To build the financial inclusion index, akin to prior research by Tran and Dinh (2021), we use Principal Component Analysis (PCA) to reduce the data dimensionality from four components: having bank accounts, savings books, credit cards, and ATM cards. It is pertinent to note that, alongside

the theoretically representative factors for the financial inclusion index and the data's availability, the components utilized for computation above facilitate a relatively comprehensive examination of various types of financial services in Vietnam, thereby offering a holistic perspective on the issue under consideration. Also, to the best of our knowledge, the current study provides the most extended dataset on financial inclusion in Vietnam, spanning from 2014 to 2020. The composite index is calculated using the following formula (see details in Appendix 1); thus, it will exhibit a standardized distribution (with a mean of 0 and a standard deviation of 1). The evolution of financial inclusion in Vietnam from 2014 to 2020 is shown in the Appendix 2.

$$FI_{i,t} = \sum_{m=1}^4 Eigenvalue_{j,i,t} \times Proportion_{i,j,t} \quad (1)$$

Second, tourism revenue is often considered the primary proxy in research assessing the impact of tourism development (TD) on the variables of interest (Canh & Thanh, 2020; Nguyen et al., 2021); we also explore other aspects, such as the number of tourists (including both domestic and international tourists), the number of shopping centres, and the volume of goods transported to these tourism destinations. Investigating the number of passengers and the volume of goods transported to tourism destinations can provide valuable insights into the willingness to pay for tourism activities by each passenger (Le & Tran, 2023), while the number of shopping centres partially reflects the quality of tourism development. It is worth noting that Vietnam experiences varying levels of tourism development, as some provinces/cities attract a large number of tourists (e.g., Hà Giang) but do not generate significant tourism revenue, whereas others (e.g., Đà Lạt) capitalize on tourism-related activities to generate substantial income. Thus, collecting multiple indices to define TD can provide additional information during the evaluation and formulation of appropriate policies. The tourism development data was collected from statistical yearbooks from 2010 to 2020. Additionally, we gathered other relevant data related to the socio-economic development of the provinces/municipalities, as discussed in the literature review, including private sector development, educational attainment, and other relevant indices. Third, the study employs the Provincial Competitiveness Index (PCI) as a representative measure to assess the level of institutional development. This index is widely used in empirical research (Le & Tran, 2023; Van Le & Tran, 2022; Van Le et al., 2022). We also collect manual data from UNESCO to record both tangible and intangible heritage sites in Vietnam for the robustness check of the experimental research model (see more Appendix 3).

The availability of sub-national level data in Vietnam offers notable advantages, including: (i) rapid changes in socio-economic conditions (e.g., tourism growth and financial development), (ii) relative independence in making socio-economic policy decisions of provinces and cities in Vietnam (compared to the central and other localities) produce the favourable condition to establish causal relationships by significantly mitigating the “contagion effect” (i.e., provinces and cities adapting from areas that achieved rapid tourism and financial development). Notably, Vietnam has been considered a region with numerous UNESCO-certified heritage from 1993 (e.g., the Complex of Hue Monuments) to 2022 (e.g., Art of pottery-making of Chăm people). The UNESCO recognition is an exogenous process, thus, seen as an appropriate instrument for this study. The study depicts the evolution of variables from 2013 to 2020 in Table 1.

Table 1. Descriptive statistics

Year (t) =		2013		2015		2017		2019	
	Units	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
Financial indicators									
Having banking account _{t+1}	[0,1]	0.134	0.097	0.190	0.130	0.252	0.149	0.321	0.163
Having saving books _{t+1}	[0,1]	0.091	0.057	0.102	0.068	0.116	0.072	0.122	0.072
Having ATM card _{t+1}	[0,1]	0.234	0.113	0.296	0.123	0.345	0.135	0.431	0.154
Having credit card _{t+1}	[0,1]	0.014	0.017	0.02	0.023	0.024	0.029	0.032	0.036
Financial Inclusion [FI] _{t+1}	z-score	-0.638	0.944	-0.214	1.19	0.184	1.338	0.669	1.396
Independent variables									
Tourism revenue	billion VND	441	2294	483	2505	573	2897	709	3587
Number of passengers	100 Mil-lion	0.453	1.427	0.491	1.575	0.583	1.907	0.703	2.374
Number of shopping malls	1 unit	2.381	4.817	2.683	5.538	3.063	6.096	3.825	7.12
Volume of goods sales	billion VND	0.463	0.903	0.512	0.976	0.628	1.182	0.777	1.429
Control variables									
Gross domestic product per capita	Million VND	32.339	29.329	34.796	30.641	40.263	30.771	45.699	31.444
Literacy	[0,100]	92.643	7.018	92.976	6.908	93.302	6.735	93.702	6.822
FDI implemented	US dollars (million)	212	479	293	711	269	634	248	439
Moderating variables									
Private enterprise rate	[0,1]	88.71	9.93	89.134	10.032	92.1	7.466	93.675	6.705
Domestic private enterprise (DPE)	[0,1]	69.43	18.93	68.37	19.12	68.66	19.75	69.20	20.55
Multidimensional enterprise (MNE)	[0,1]	19.281	20.506	20.762	21.168	23.436	21.737	24.477	21.897
PCI	PCI Vietnam	58.073	3.24	58.323	3.143	62.397	2.943	65.663	2.6
Instrumental variable									
UNESCO recognition	1 unit	0.127	0.421	0.143	0.435	0.159	0.482	0.159	0.482
Observation		63		63		63		63	

Source: Developed by the authors.

2.2. Econometric model

We have adapted the theoretical framework of ecotourism proposed by Ross and Wall (1999) for the basis setup. The authors emphasize the significance of fostering synergistic relationships between the local communities and tourism to achieve sustainable development objectives, with a particular focus on improving financial inclusion in our case. In the context of providing local socioeconomic benefits, the theory outlines several mechanisms that can enhance growth, and we believe they can lead to improvements in financial inclusion: (i) increasing employment opportunities and ensuring a more equitable distribution of tourism revenues can create a stable financial flow within the community; (ii) improving local infrastructure, including transportation, communications, and access to financial services, thus enhancing the ease of accessing financial services such as ATMs and credit cards; (iii) enhancing access to public services; (iv) fostering improved intercultural relations and appreciation through positive interactions between hosts and tourists, pushing the acceptance of new financial services more likely; (v) stimulating tourism-driven local capacity building, which contributes to self-sufficiency, decentralization, and empowerment of the local community; and (vi) increasing foreign exchange earnings.

Moreover, according to the research by Kusluvan et al. (2010); Ohlan (2017), local tourism development enables the growth of private financial services by providing diverse, easily accessible, and customer-tailored services that cater to various customer segments. It fosters inter and intra-business connectivity. Our study draws on two experimental research studies to assess the impact of tourism development on different variables of interest (Canh & Thanh, 2020; Nguyen et al., 2021) and incorporate findings from studies that identify factors influencing financial inclusion, as synthesized by Sanderson et al. (2018). The model is formulated as follows:

$$FI_{i,t} = \beta_0 + \beta_1 TD_{i,t-1} + \sum_{j=1}^J \beta_{i,j} Z_{i,t,t-1} + \varphi_i + \lambda t + \varepsilon_{i,t} \quad (2)$$

where $FI_{i,t}$ represents the financial inclusion (FI) index and its components in province/cities i in year t . $TD_{i,t-1}$ reflects the level of local tourism development (TD) and is represented through the four aspects mentioned earlier. Measuring the impact of TD with a lag of one year partly addresses the issue of reverse causality (as claimed by Gopalan and Khalid (2022); Shi et al. (2021)) and accounts for the time lag in their practical effects on financial development. Specifically, for instance Balaguer and Cantavella-Jorda (2002), tourism development requires time to build credibility, attract tourists, establish ecosystems, and generate sufficient financial inflows to develop the local financial market, followed by personal finance.

$Z_{j,i,t}$ denote control variables in the model, which are synthesized from previous studies. We control for educational attainment (Evans, 2016; Uddin et al., 2017) and local income level (Soumare et al., 2016; Zins & Weill, 2016). We also control for the presence of foreign direct investment (FDI) and its inflows to ensure the level of local engagement amid local economic growth (Giaoutzi & Nijkamp, 2006), thereby partly mitigating potential manipulation by foreign corporations towards local citizens (e.g., events like “zero-dong tours”). Accordingly, we utilize FDI implemented rather than registered FDI to reflect their actual impact in current times (for example, after the global financial crisis, Vietnam witnessed nearly four times the increase in registered FDI compared to 2008, while actual FDI inflows were only 1/7 of the registered amount). Notably, Arcand et al. (2015) implies the credibility of an inverted-U-shaped correlation between financial development and income per capita; thus, drawing inspiration from this study, we integrate the square of local economic growth into the estimated equations.

The symbols φ and λ denote unobservable time-invariant factors and time trends, respectively. Unobservable time-invariant factors such as geography, culture, and long-standing customs deeply embedded in the local population for centuries played a crucial role in shaping the tourism culture (e.g., Tay Nguyen gongs or Hue court music), while time trends (e.g., technology) significantly influence the ability and quality of new financial services replacing traditional financial practices (e.g., savings deposits or Vietlot vs Hui/Ho) (Jiang et al., 2022; Putzeys, 2002). The term ε reflects the errors in the model. To further investigate and validate the hypotheses concerning the contextual conditions moderating the nexus, specifically the level of private sector development (domestic), educational attainment of the population, and institutional development, we examine the influence of the interaction between TD and the moderating variables (M_j). The model is formulated as follows:

$$FI_{i,t} = \beta_0 + \beta_1 TD_{i,t-1} + \alpha_1 M_{i,t-1} + \eta_1 TD_{i,t-1} \times M_{i,t-1} + \sum_{j=2}^J \beta_{i,j} Z_{i,t,t-1} + \varphi_i + \lambda t + \varepsilon_{i,t} \quad (3)$$

where M_j represents the three main variables of interest. *First*, the development of private enterprises is measured by the proportion of domestic and foreign private enterprise labor in the total labor

force in both public and private sectors (π) (Van Le & Tran, 2022; Van Le et al., 2022). Using this index, we can differentiate the contributions of domestic private enterprises (DPE) and multinational enterprises (MNE). *Second* and *third*, the average educational attainment and the provincial competitiveness index (PCI) are considered to examine the moderating roles of educational attainment and institutional quality in the relationship.

2.3. Endogeneity

The estimation models based on equations (2) and (3) encounter certain limitations related to (i) dynamic potential endogeneity and (ii) confounding effects, which could affect the validity of the results. Dynamic potential endogeneity arises, *first*, in both models when past tourism development is influenced by previous financial inclusion levels (e.g., increased usage of convenient financial services leading to higher expenditure in tourism). In such cases, the fixed-effects estimator may introduce bias and produce inconsistent outcomes (Wintoki et al., 2012).

Second, confounding effects can also impact the estimates if both past tourism development and current financial inclusion are influenced by an external factor not captured in the model. For instance, the 2017 Law on Tourism (09/2017/QH14) introduced regulations regarding support for local tourism development. It notably emphasized the establishment of local financial development through the creation of a tourism development support fund. It should be noted that detailed guidance for setting up this fund was provided about one year later (168/2017/NĐ-CP). These external factors can confound the relationships between tourism development and financial inclusion, leading to biased estimations.

Some studies have employed the autoregressive distributed lag (ARDL) approach to estimate the relationship (Ohlan, 2017; Shahbaz et al., 2017); however, this approach has limitations in fully addressing causal relationships. For instance, ARDL assumes one-way relationships between variables and does not consider feedback effects. Thus, ARDL results may only be partially accurate when simultaneous causality exists. While ARDL can detect the presence of a causal relationship between variables, it cannot determine the direction of causality (i.e., which variable is causing changes in the other) (Paul & Bhattacharya, 2004).

We utilize a two-step generalized method of moments (GMM) estimator to overcome these issues. The GMM estimator considers unobservable heterogeneity, simultaneity, and dynamic potential endogeneity, thus providing a more robust approach (Blundell & Bond, 1998; Van Le et al., 2022; Wintoki et al., 2012). Despite the advantages, the GMM estimator relies on the additional assumption that instrument changes are uncorrelated with the fixed effects (φ), which means $E(\Delta UNESCO_{i,t}, \varphi_i) = 0$ for all i and t . The estimator can also produce spurious estimates due to their complexity. Thus, to ensure the consistency of the coefficients in the model, it is crucial to include external exogenous variables as instrumental variables (Roodman, 2009; Wintoki et al., 2012).

We use the number of UNESCO recognitions as a valid and exogenous instrument; Accordingly, the UNESCO recognition process is considered entirely independent, depending on the uniqueness of the heritage and the criteria set by the UNESCO organization. This implies the assumption of the exclusion condition for the instrumental variable, where theoretically, $Cov(u, UNESCO|Z) = 0$ is guaranteed. Regarding the relevant condition, we can easily verify the correlation of UNESCO with the explanatory variables (i.e., tourism developments)—the correlation coefficients of the instrumental variable with the explanatory variable range from 0.068 to 0.37 (see in Appendix [4]). For technical tests, we present four tests accompanying the GMM estimator: the serial correlation test of AR(1) and

AR(2), the Hansen test of overidentification, and the Diff-in-Hansen tests of exogeneity. Thus, the formula is followed by the first stage regression in equation (2).

$$TD_{it-1} = f(UNESCO_{it-1}, TD_{ijt-2}, Z_{ijt-1}) \quad (2)'$$

3. Results

3.1. Main results

Table 2 presents estimations using Ordinary Least Squares (OLS) and fixed effects (FE) regression to assess the impact of tourism development (TD) indicators on the financial inclusion (FI) index.

Table 2. Estimation results with OLS and FE estimators

Dependent variable	Financial Inclusion Index							
Estimators	OLS	FE	OLS	FE	OLS	FE	OLS	FE
Columns	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Tourism revenue in log	0.231*** (0.038)	-0.003 (0.107)						
Number of passengers			0.254*** (0.029)	0.161** (0.080)				
Number of shopping malls					0.096*** (0.013)	0.069*** (0.022)		
Volume of goods sales							0.422*** (0.077)	0.356** (0.145)
Gross domestic product per capita	0.032*** (0.007)	0.000 (0.013)	0.040*** (0.008)	0.007 (0.013)	0.034*** (0.008)	0.007 (0.013)	0.038*** (0.008)	0.008 (0.013)
Gross domestic product per capita squared	-0.000*** (0.000)	0.000 (0.000)	-0.000*** (0.000)	-0.000 (0.000)	-0.000*** (0.000)	-0.000 (0.000)	-0.000*** (0.000)	-0.000 (0.000)
Literacy	0.034*** (0.009)	-0.001 (0.044)	0.035*** (0.008)	-0.008 (0.040)	0.035*** (0.007)	-0.003 (0.039)	0.034*** (0.008)	-0.010 (0.039)
FDI implemented	0.000** (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Provinces/cities dummies	No	Yes	No	Yes	No	Yes	No	Yes
Constant	-5.337*** (0.833)	-0.607 (4.097)	-5.025*** (0.733)	-0.123 (3.675)	-4.966*** (0.655)	-0.757 (3.632)	-4.980*** (0.727)	-0.056 (3.653)
Observations	243	243	252	252	252	252	252	252
R-squared	0.659	0.616	0.660	0.624	0.682	0.635	0.649	0.629
Number of province/city		62		63		63		63

Source: Developed by the authors.

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

In cases where both dynamic potential endogeneity and cofounders do not exist, the fixed-effects estimation will be consistent. The higher coefficient of OLS compared to FE is attributed to the influence of unobservable time-invariant factors (e.g., cultural communication, geography, ethnicity), causing the OLS estimates to be overestimated.

The initial estimations confirm the ecotourism/tourism-led growth theory in the financial sector. Specifically, an increase in the number of passengers, shopping malls, and volume of goods sales led to an increase in the financial inclusion index in Vietnam from 2013 to 2020. The visually linear relationship between tourism development and financial inclusion also is demonstrated in the Appendix 5. These findings are also consistent with previous studies that highlight how tourism development can enhance financial markets, financial services, and individual finances (Donovan, 2012; Giaoutzi & Nijkamp, 2006; Kusluvan et al., 2010; Liu, 2003; Ridderstaat et al., 2022).

The results of the generalized method of moments (GMM) are presented in Table [3], considering unobservable heterogeneity, simultaneity, and dynamic potential endogeneity. In this analysis, UNESCO recognition is employed as an exogenous instrument, along with lagged instruments, to ensure consistent estimation (Roodman, 2009; Wintoki et al., 2012). As a rule of thumb, the estimated parameter using 2SLS should not exceed three times that of the corresponding estimate obtained through OLS (Lal et al., 2023). Also, technical tests (i.e., AR(1), AR(2), Hansen test of overidentification restrictions, and Difference-in-Hansen tests of instrument exogeneity) further confirm the instrument's validity. It is noteworthy that the coefficient of tourism revenue to FI in column (2) of Table 2 is not statistically significant, whereas its coefficient in column (1) of Table 4 is positive and statistically significant, reflecting the consequence of estimation bias when endogeneity exists. Thus, Table 3 provides consistent results of causal effects.

Furthermore, the results present a positive and statistically significant correlation between literacy and financial inclusion in Vietnam, consistent with previous studies (Atkinson & Messy, 2013; Nawaz, 2022). This finding reinforces the link between educational attainment and financial access and usage, supporting that improved literacy can enhance individual financial welfare. We also reconfirm the hypothesis posited by Arcand et al. (2015), which suggests the existence of an inverted U-shaped correlation between financial development and income per capita.

Table 3. Estimation results with GMM estimator

Dependent variable	Financial Inclusion Index			
	GMM	GMM	GMM	GMM
Estimator				
Columns	(1)	(2)	(3)	(4)
Tourism revenue in log	0.274** (0.118)			
Number of passengers		0.242*** (0.041)		
Number of shopping malls			0.079*** (0.028)	
Volume of goods sales				0.369*** (0.080)
Gross domestic product per capita	0.034** (0.015)	0.032*** (0.011)	0.032** (0.016)	0.030** (0.015)
Gross domestic product per capita squared	-0.000*** (0.000)	-0.000*** (0.000)	-0.000* (0.000)	-0.000* (0.000)
Literacy	0.055 (0.052)	0.159*** (0.049)	0.144*** (0.049)	0.174*** (0.059)
FDI implemented	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Year Dummies	Yes	Yes	Yes	Yes
Constant	-7.382 (4.590)	-16.358*** (4.551)	-14.927*** (4.713)	-17.723*** (5.441)

Columns	(1)	(2)	(3)	(4)
Observations	243	252	252	252
Number of province/city	62	63	63	63
Exogenous instrument	UNESCO, 1-year lagged of dependent variables			
AR(1)	0.041	0.033	0.011	0.018
AR(2)	0.350	0.417	0.555	0.565
Hansen test of overid. restrictions	0.688	0.446	0.137	0.486
Difference-in-Hansen tests of exogeneity of instrument subsets (p-value)	0.400	0.674	0.109	0.258

Source: Authors.

Note: Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

3.2. The role of contextual factors and robustness checks

We further extend the empirical examination of the moderating factors' influence on the nexus, as depicted in equation (3). The results are presented in Table [4]; Accordingly, *first*, in Panel A, the moderating effect of education attainment on the relationship is confirmed in columns (1), (3), and (4). Specifically, when local tourism revenue (column [1]) increases, the financial inclusion index grows faster with increasing individuals' educational attainment. This finding aligns with prior research (e.g., Sanderson et al. (2018)), which suggests the concept of voluntary exclusion. For example, individuals' participation in financial services may be hindered by their lack of awareness of the convenience of such services. Thus, as educational levels rise, financial services are optimally utilized from tourism revenue increase, leading to an increase in financial inclusion. This phenomenon can be readily observed in recent years in the Northwestern mountainous regions of Vietnam (e.g., Sa Pa [Lào Cai], Mộc Châu [Sơn La], and Hà Giang), which are home to various ethnic minority groups and attract tourists; Accordingly, these destinations have witnessed the rapid expansion of banking services (e.g., ATM and credit card accounts).

Second, in Panel B of Table 4, we examine the moderating role of institutional quality, represented by the provincial competitiveness index (PCI), on the relationship. Institutions can influence locals' engagement level in tourism development and their ability to obtain a larger share of its benefits through various mechanisms. For instance, Stone and Stone (2011) emphasize using single-community trusts instead of multi-community trusts in tourism development to maximize benefits for local communities. Another example is the phenomenon of "ripping off tourists" at tourist destinations in developing countries; Accordingly, given inefficient institutions, various exploitative practices may take advantage of tourists, and to do so, the locals frequently maintain cash payment instead of transitioning to online financial services. Consequently, ineffective institutions may adversely affect the nexus in the early stages of tourism development.

Community-based enterprises (CBEs) within the tourism industry emphasize the significance of local private enterprise involvement in the development of the welfare of localities compared to foreign enterprises (Duval, 2004; Manyara & Jones, 2007). The authors imply that the answer to whether tourism development positively impacts local people's welfare lies in the profit margin of tourism activities for local tourism revenue (e.g., the phenomenon of "zero-dong tours" in Vietnam and Thailand). Van Le and Tran (2022); Van Le et al. (2022) indicate that growing both domestic and foreign private enterprises contributes significantly to poverty reduction, inequality reduction, and the yield of diverse financial services at affordable prices for the local population. Thus, evaluating the moderating impact of (domestic) private sector development (PSD) on the nexus may yield mixed results.

Third, we test this hypothesis in Panel C of Table 4. The results show that the moderating effect of PSD on the relationship is statistically significant (columns [1], [3], and [4]); Accordingly, this effect primarily stems from domestic private enterprises and not from foreign private enterprises. This once again confirms the role of domestic business network development in sustainable tourism development, given that the local domestic private enterprises also better understand the local culture and empower localities. This finding is consistent with the observations made by Canh and Thanh (2020) in low- and lower-middle-income countries, indicating that domestic tourism reduces economic instability compared to foreign tourism by creating new jobs and fostering stable domestic investment while being less reliant on external demand and supply, which could potentially pose international shocks. Notably, foreign tourists engaged in “zero-dong tours” or “negative-price tours” in Vietnam neither contribute to the domestic economy nor foster the development of domestic financial services.

Table 4. The role of moderating factors in the relationship between TD and FI

	(1)	(2)	(3)	(4)
Dependent variables:	Financial Inclusion Index (overall)			
Variables of Interest	Tourism revenue in log	Number of passengers	Number of shopping malls	Volume of goods sales
Panel A: Literacy				
Literacy × variables of Interest	0.050*** (0.012)	0.106 (0.089)	0.017** (0.008)	0.205*** (0.072)
Observations	243	252	252	252
R-squared	0.653	0.627	0.643	0.644
Number of province/city	62	63	63	63
Panel B: Provincial Competitiveness Index (PCI)				
PCI × variables of Interest	0.479* (0.250)	0.774 (0.603)	0.197* (0.116)	1.520 (1.285)
Observations	243	252	252	252
R-squared	0.628	0.634	0.645	0.636
Number of province/city	62	63	63	63
Panel C: Private Sector Development (PSD) = Domestic Private Enterprises (DPE) + Multinational Enterprises (MNE)				
PSD × variables of Interest	0.012** (0.005)	0.019 (0.014)	0.003* (0.002)	0.038* (0.020)
R-squared	0.641	0.639	0.650	0.645
Panel C.1: Domestic Private Enterprises (DPE)				
DPE × variables of Interest	-0.000 (0.002)	0.005* (0.003)	0.001** (0.001)	0.007* (0.004)
R-squared	0.621	0.636	0.648	0.638
Panel C.2: Multinational Enterprises (MNE)				
MNE × variables of Interest	0.003 (0.002)	-0.004 (0.003)	-0.001 (0.001)	-0.004 (0.004)
R-squared	0.622	0.629	0.638	0.631
Observations	243	252	252	252
R-squared	0.621	0.636	0.648	0.638
Number of province/city	62	63	63	63

Source: developed by the authors.

Note: All model are controlled for (i) variables of interest, (ii) moderating variables, (iii) control variables, (iv) and year dummies. Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

To examine the mechanisms of how each facet of local tourism development impacts financial inclusion (FI), we investigate the effects of these aspects on FI components: having banking accounts,

saving books, ATM cards, and credit cards. The results are presented in Appendix [6], with several notable findings as follows: (i) an increase in tourism revenue enhances the proportion of individuals owning ATM cards; (ii) the influx of tourists and goods through tourist destinations improves both banking accounts and credit card ownership; and (iii) the presence of shopping malls (representing shopping hubs) positively influences the payment methods of individuals (i.e., ATM and credit cards) and banking account ownership.

Conclusions

The study examines the impact of tourism development (TD) on financial inclusion (FI) in Vietnam, focusing on the role of contextual factors (i.e., domestic private sector development, education attainment, and institutional quality). Our analysis utilizes a two-step generalized method of moments (GMM) estimator, considering unobservable heterogeneity, simultaneity, and dynamic potential endogeneity. To ensure consistency in estimation, we use the UNESCO recognition as an exogenous instrument alongside lagged instruments (Roodman, 2009; Wintoki et al., 2012). The findings confirm the theoretical perspective of ecotourism and tourism-led growth in the financial domain. Accordingly, the increase in tourism revenue, the number of passengers, shopping malls, and the volume of goods sales positively contribute to the FI index and its components in Vietnam from 2013 to 2020.

Notably, effective institutions (as proxied by PCI) and higher education levels are identified as moderating factors that enrich the positive effects of tourism on financial inclusion. Domestic private sector development emerged as crucial in promoting financial inclusion, as predicted by community-based enterprises (CBEs) theory, where higher engagement of localities contributes to local welfare compared to large multinational corporations.

Based on our findings, several policy implications can be drawn to promote tourism development and financial inclusion as follows: (i) policymakers should prioritize supporting the growth of domestic private sector enterprises, especially community-based enterprises; Accordingly, emphasizing local ownership will benefit the locals and its economy; (ii) Investing in education, particularly in underserved areas, is vital to improving financial inclusion. Indeed, higher education levels were associated with reducing financial voluntary exclusion and facilitating more significant engagement with formal financial services, contributing to increased financial inclusion; and (iii) enhancing institutional quality is crucial to creating a fair and transparent environment for the tourism industry, ensuring responsible tourism practices and empowering local communities.

Our research has certain limitations that should be acknowledged. First, financial inclusion measurement has some constraints, as specific components, particularly financial loans and related insurance, were not fully captured. Second, the data recorded for the 63 provinces from 2013 to 2020 is relatively limited, especially when utilizing the GMM estimator with lagged variables as instrumental variables, which may produce spurious results in cases with small sample sizes and short observation periods. However, these limitations are mainly due to data availability in Vietnam and can be addressed in the future with more comprehensive and abundant data. Moreover, the instrumental variable used in this study (UNESCO recognition) is theoretically and technically valid, thus yielding consistent results.

Future research can further develop in several aspects. First, they examine the relationship in the context of COVID-19, where social distancing policies have significantly impacted the tourism industry, creating shocks that require investigation—second, exploring the influence of informal sectors on

the relationship under study, as they play a substantial role in the Vietnamese economy. A more comprehensive understanding of the dynamics between tourism development and financial inclusion can be achieved by addressing these areas in future studies. In other words, incorporating lagged dependent variables into the estimated equations may be a feasible option for future research.

Funding: This research is funded by International School, Vietnam National University, Hanoi (VNU-IS) under project number QG.23.82.

Data Availability Statement: The data supporting the findings of this study are available on request from the corresponding author.

Conflicts of Interest: The authors affirm no conflict of interest.

Reference

1. Arcand, J. L., Berkes, E., & Panizza, U. (2015). Too much finance? *Journal of economic growth*, 20, 105-148. <https://doi.org/10.1007/s10887-015-9115-2>
2. Arner, D. W., Buckley, R. P., Zetzsche, D. A., & Veidt, R. (2020). Sustainability, FinTech and financial inclusion. *European Business Organization Law Review*, 21, 7-35. <https://doi.org/10.1007/s40804-020-00183-y>
3. Arshad, A. (2022). Impact of financial inclusion on food security: evidence from developing countries. *International Journal of Social Economics*, 49(3), 336-355. <https://doi.org/10.1108/IJSE-08-2021-0462>
4. Atkinson, A., & Messy, F.-A. (2013). Promoting financial inclusion through financial education: OECD/INFE evidence, policies and practice. <https://doi.org/10.1787/20797117>
5. Balaguer, J., & Cantavella-Jorda, M. (2002). Tourism as a long-run economic growth factor: the Spanish case. *Applied Economics*, 34(7), 877-884. <https://doi.org/10.1080/00036840110058923>
6. Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 89, 115—143. [https://doi.org/10.1016/S0304-4076\(98\)00009-8](https://doi.org/10.1016/S0304-4076(98)00009-8)
7. Buultjens, J. W., Ratnayake, I., & Gnanapala, W. A. C. (2016). Post-Conflict tourism development in Sri Lanka: implications for building resilience. *Current Issues in Tourism*, 19(4), 355-372. <https://doi.org/10.1080/13683500.2014.1002760>
8. Canh, N. P., & Thanh, S. D. (2020). Domestic tourism spending and economic vulnerability. *Annals of Tourism Research*, 85, 103063. <https://doi.org/10.1016/j.annals.2020.103063>
9. Comerio, N., & Strozzi, F. (2019). Tourism and its economic impact: A literature review using bibliometric tools. *Tourism Economics*, 25(1), 109-131. <https://doi.org/10.1177/1354816618793762>
10. De Koker, L., & Jentzsch, N. (2013). Financial inclusion and financial integrity: Aligned incentives? *World Development*, 44, 267-280. <https://doi.org/10.1016/j.worlddev.2012.11.002>
11. Deaton, A. (2013). *The Great Escape: health, wealth, and the origins of inequality*. Princeton: Princeton University Press.
12. Demirguc-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2018). *The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution*: World Bank Publications. <http://hdl.handle.net/10986/29510>
13. Donovan, K. (2012). Mobile money for financial inclusion. *Information and Communications for development*, 61(1), 61-73. https://doi.org/10.1596/9780821389911_ch04

14. Duval, D. T. (2004). *Tourism in the Caribbean: Trends, development, prospects* (Vol. 3): Routledge.
15. Evans, O. (2016). Determinants of financial inclusion in Africa: A dynamic panel data approach. *University of Mauritius Research Journal*, 22, 310-336. <https://mpira.ub.uni-muenchen.de/81326/>
16. Fan, P., Ouyang, Z., Nguyen, D. D., Nguyen, T. T. H., Park, H., & Chen, J. (2019). Urbanization, economic development, environmental and social changes in transitional economies: Vietnam after Doimoi. *Landscape and Urban Planning*, 187, 145-155. <https://doi.org/10.1016/j.landurbplan.2018.10.014>
17. General Statistical Office [GSO]. (2023a). *General Statistical Office: Licensed foreign direct investment in 2021 by economic sector*. Retrieved from <https://www.gso.gov.vn/px-web-2/?pxid=V0415&theme=%C4%90%E1%BA%A7u%20t%C6%B0>.
18. General Statistical Office [GSO]. (2023b). *General Statistical Office: Percentage of high school graduates by region(*) by Region and School Year*. Retrieved from <https://www.gso.gov.vn/px-web-2/?pxid=V1015&theme=Gi%C3%A1o%20d%E1%BB%A5c>.
19. Giaoutzi, M., & Nijkamp, P. (2006). *Tourism and regional development: New pathways*: Ashgate Publishing, Ltd.
20. Gopalan, S., & Khalid, U. (2022). How does financial inclusion influence tourism demand? Empirical evidence from emerging markets and developing economies. *Tourism Recreation Research*, 1-15. <https://doi.org/10.1080/02508281.2022.2028084>
21. Hall, C. M., & Lew, A. A. (2009). *Understanding and managing tourism impacts: An integrated approach*: Routledge.
22. Honohan, P. (2008). Cross-country variation in household access to financial services. *Journal of Banking & Finance*, 32(11), 2493-2500. <https://doi.org/10.1016/j.jbankfin.2008.05.004>
23. Jiang, Y., Tian, G., Wu, Y., & Mo, B. (2022). Impacts of geopolitical risks and economic policy uncertainty on Chinese tourism-listed company stock. *International Journal of Finance & Economics*, 27(1), 320-333. <https://doi.org/10.1002/ijfe.2155>
24. Karpowicz, I. (2016). Financial inclusion, growth and inequality: a model application to Colombia. *Journal of Banking and Financial Economics*, 6(2), 68-89. <https://doi.org/10.7172/2353-6845.jbfe.2016.2.4>
25. Kumar, R. R. (2014). Exploring the role of technology, tourism and financial development: an empirical study of Vietnam. *Quality & Quantity*, 48(5), 2881-2898. <https://doi.org/10.1007/s11135-013-9930-5>
26. Kusluvan, S., Kusluvan, Z., Ilhan, I., & Buyruk, L. (2010). The human dimension: A review of human resources management issues in the tourism and hospitality industry. *Cornell Hospitality Quarterly*, 51(2), 171-214. <https://doi.org/10.1177/1938965510362871>
27. Lal, A., Lockhart, M., Xu, Y., & Zu, Z. (2023). How much should we trust instrumental variable estimates in political science? Practical advice based on over 60 replicated studies. *arXiv preprint arXiv:2303.11399*. <https://doi.org/10.48550/arXiv.2303.11399>
28. Le, D. V., & Tran, T. Q. (2023). Heterogenous effects of ICT application on local tourism development: a quantile regression approach. *Journal of Policy Research in Tourism, Leisure and Events*, 1-23. <https://doi.org/10.1080/19407963.2023.2196727>
29. Liu, Z. (2003). Sustainable tourism development: A critique. *Journal of Sustainable Tourism*, 11(6), 459-475. <https://doi.org/10.1080/09669580308667216>

30. Manyara, G., & Jones, E. (2007). Community-based tourism enterprises development in Kenya: An exploration of their potential as avenues of poverty reduction. *Journal of Sustainable Tourism*, 15(6), 628-644. <https://doi.org/10.2167/jost723.0>
31. Nawaz, T. (2022). What's in an education? Implications of CEO education for financial inclusion. *International Journal of Finance & Economics*, 27(3), 3741-3753. <https://doi.org/10.1002/ijfe.2348>
32. Nguyen, C. P., Schinckus, C., Su, T. D., & Chong, F. H. L. (2021). The influence of tourism on income inequality. *Journal of Travel Research*, 60(7), 1426-1444. <https://doi.org/10.1177/0047287520954538>
33. Ohlan, R. (2017). The relationship between tourism, financial development and economic growth in India. *Future Business Journal*, 3(1), 9-22. <https://doi.org/10.1016/j.fbj.2017.01.003>
34. Patten, M. L. (2016). *Understanding research methods: An overview of the essentials*: Routledge.
35. Paul, S., & Bhattacharya, R. N. (2004). Causality between energy consumption and economic growth in India: a note on conflicting results. *Energy Economics*, 26(6), 977-983. <https://doi.org/10.1016/j.eneco.2004.07.002>
36. Podhorodecka, K. (2018). Tourism economies and islands' resilience to the global financial crisis. *Island Studies Journal*, 13(2). <https://doi.org/10.24043/isj.43>
37. Putzeys, R. (2002). Micro finance in Vietnam: Three case studies. *Rural Project Development, Hanoi*. <https://www.findevgateway.org/case-study/2002/05/microfinance-vietnam-three-case-studies>
38. Ridderstaat, J., Fu, X., & Lin, B. (2022). A framework for understanding the nexus between tourism development and poverty: Application to Honduras. *Tourism management*, 93, 104620. <https://doi.org/10.1016/j.tourman.2022.104620>
39. Roodman, D. (2009). How to do xtabond2: An introduction to difference and system GMM in Stata. *The stata journal*, 9(1), 86-136. <https://doi.org/10.1177/1536867X0900900106>
40. Ross, S., & Wall, G. (1999). Ecotourism: towards congruence between theory and practice. *Tourism management*, 20(1), 123-132. [https://doi.org/10.1016/S0261-5177\(98\)00098-3](https://doi.org/10.1016/S0261-5177(98)00098-3)
41. Sanderson, A., Mutandwa, L., & Le Roux, P. (2018). A review of determinants of financial inclusion. *International Journal of economics and financial issues*, 8(3), 1-8. Retrieved from <https://www.econjournals.com/index.php/ijefi/article/view/5458>
42. Sarma, M., & Pais, J. (2011). Financial inclusion and development. *Journal of International Development*, 23(5), 613-628. <https://doi.org/10.1186/s13731-021-00190-4>
43. Scheyvens, R. (1999). Ecotourism and the empowerment of local communities. *Tourism management*, 20(2), 245-249. [https://doi.org/10.1016/S0261-5177\(98\)00069-7](https://doi.org/10.1016/S0261-5177(98)00069-7)
44. Shahbaz, M., Kumar, R. R., Ivanov, S., & Loganathan, N. (2017). The nexus between tourism demand and output per capita with the relative importance of trade openness and financial development: A study of Malaysia. *Tourism Economics*, 23(1), 168-186. <https://doi.org/10.5367/te.2015.0505>
45. Shi, Y., Swamy, V., & Paramati, S. R. (2021). Does financial inclusion promote tourism development in advanced and emerging economies? *Applied Economics Letters*, 28(6), 451-458. <https://doi.org/10.1080/13504851.2020.1761521>
46. Shin, Y., Yu, B., & Greenwood-Nimmo, M. (2014). Modelling asymmetric cointegration and dynamic multipliers in a nonlinear ARDL framework. *Festschrift in honor of Peter Schmidt: Econometric methods and applications*, 281-314. https://doi.org/10.1007/978-1-4899-8008-3_9

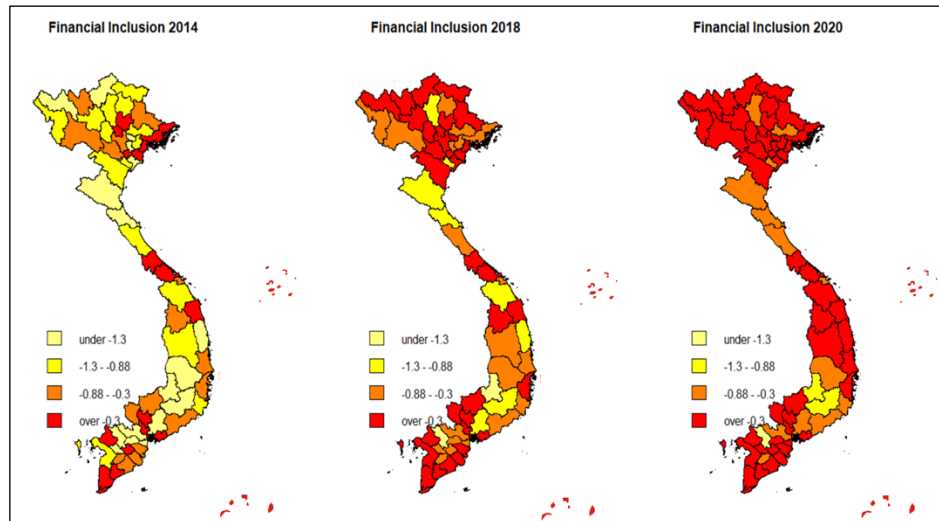
47. Siddik, M. N. A. (2017). Does financial inclusion promote women empowerment? Evidence from Bangladesh. *Applied Economics and Finance*, 4(4), 169-177. <https://doi.org/10.11114/aef.v4i4.2514>
48. Soumare, I., Tchana Tchana, F., & Kengne, T. M. (2016). Analysis of the determinants of financial inclusion in Central and West Africa. *Transnational Corporations Review*, 8(4), 231-249. <https://doi.org/10.1080/19186444.2016.1265763>
49. Stone, L. S., & Stone, T. M. (2011). Community-based tourism enterprises: challenges and prospects for community participation; Khama Rhino Sanctuary Trust, Botswana. *Journal of Sustainable Tourism*, 19(1), 97-114. <https://doi.org/10.1080/09669582.2010.508527>
50. Tran, T. Q., & Dinh, V. T. T. (2021). Provincial governance and financial inclusion: micro evidence from rural Vietnam. *International public management journal*, 24(6), 792-812. <https://doi.org/10.1080/10967494.2021.1964009>
51. Tu-Anh, V.-T., & Perkins, D. H. (2021). *Explaining Vietnam's Economic Growth Experience*. book chapter in Dwight Perkins and Börje Ljunggren (eds). Vietnam: State, Economy, Society in a Shifting Global Environment (forthcoming).
52. Tugcu, C. T. (2014). Tourism and economic growth nexus revisited: A panel causality analysis for the case of the Mediterranean Region. *Tourism management*, 42, 207-212. <https://doi.org/10.1016/j.tourman.2013.12.007>
53. Uddin, A., Chowdhury, M. A. F., & Islam, M. N. (2017). Determinants of financial inclusion in Bangladesh: Dynamic GMM & quantile regression approach. *The Journal of Developing Areas*, 51(2), 221-237. <https://doi.org/10.1353/jda.2017.0041>
54. Van Le, D., & Tran, T. Q. (2022). Does the private sector increase inequality? Evidence from a transitional country. *Structural Change and Economic Dynamics*, 62, 451-466. <https://doi.org/10.1016/j.strueco.2022.06.005>
55. Van Le, D., Tran, T. Q., & Doan, T. (2022). The private sector and multidimensional poverty reduction in Vietnam: A cross-province panel data analysis. *International Journal of Social Welfare*, 31(3), 291-309. <https://doi.org/10.1111/ijsw.12524>
56. Wintoki, M. B., Linck, J. S., & Netter, J. M. (2012). Endogeneity and the dynamics of internal corporate governance. *Journal of Financial Economics*, 105(3), 581-606. <https://doi.org/10.1016/j.jfineco.2012.03.005>
57. Xu, S., Asiedu, M., & Effah, N. A. A. (2022). Inclusive finance, gender inequality, and sustainable economic growth in Africa. *Journal of the Knowledge Economy*, 1-37. <https://doi.org/10.1007/s13132-022-01036-4>
58. Zins, A., & Weill, L. (2016). The determinants of financial inclusion in Africa. *Review of development finance*, 6(1), 46-57. <https://doi.org/10.1016/j.rdf.2016.05.001>

Appendixes

Appendix 1. Parameters to calculate the financial inclusion index, using PCI

Components	Eigenvalue	Difference	Proportion	Cumulative
Component 1	3.016	2.449	0.754	0.754
Component 2	0.567	0.238	0.142	0.896
Component 3	0.328	0.239	0.082	0.978
Component 4	0.089	.	0.022	1.000

Source: developed by the authors.

**Appendix 2.** Evolution of financial inclusion in Vietnam, 2014-2020

Source: developed by the authors.

Appendix 3. List of tangible and intangible heritage recognized by UNESCO in Vietnam

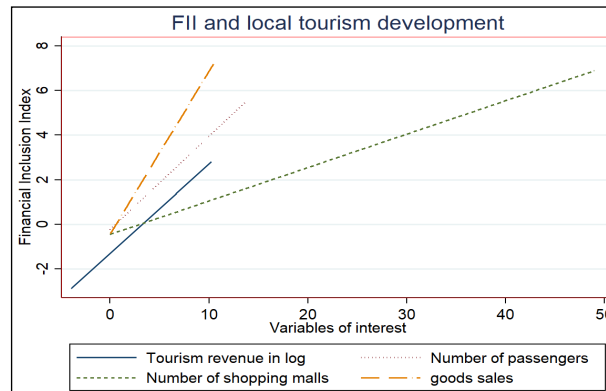
Provinces/cities/region	Elements on the Lists	Year of recognition
Tangible Cultural Heritage		
Quang Ninh	Hạ Long Bay	1994/2000
Thua Thiên Huế	Complex of Huế Monuments	1993
Quang Nam	Mỹ Sơn Sanctuary	1999
Quang Nam	Hội An Ancient Town	1999
Quang Bình	Phong Nha – Kẻ Bàng National Park	2003
Ha Noi	Central Sector of Imperial Citadel of Thăng Long	2010
Thanh Hoa	Citadel of the Hồ Dynasty	2011
Ninh Bình	Tràng An Landscape Complex	2014
Intangible Cultural Heritage		
Hue	Nha Nhac, Vietnamese court music	2003
Kon Tum, Gia Lai, Dak Lak, Dak Nong and Lam Dong.	Space of gong culture	2005
Phu Tho, Vinh Phuc, Hanoi, Bac Giang, Bac Ninh, Hai Phong, Hai Duong, Hung Yen, Ha Nam, Nam Dinh, Thai Binh, Ninh Binh, Thanh Hoa, Nghe An, Ha Tinh and Quang Binh.	Ca trù singing	2009
Bac Ninh	Quan Họ Bắc Ninh folk songs	2009
Ha Noi	Gióng festival of Phù Đổng and Sóc temples	2010
Phu Tho	Xoan singing of Phú Thọ province, Viet Nam	2017
Phu Tho	Worship of Hùng kings in Phú Thọ	2012
Southern Vietnam	Art of Đờn ca tài tử music and song in southern Viet Nam	2013
Nghe An, Ha Tinh	Ví and Giặm folk songs of Nghệ Tĩnh	2014
Vinh Phuc, Bac Ninh and Hanoi	Tugging rituals and games	2015
Quang Binh, Quang Tri, Thua Thiên Hue, Quang Nam, Quang Ngai, Binh Dinh, Phu Yen, Khanh Hoa and Da Nang	The art of Bài Chòi in Central Viet Nam	2017
Northwest region	Practices of Then by Tày, Nùng and Thái ethnic groups in Viet Nam	2019
Lai Chau, Son La, Dien Bien, Yen Bai.	Art of Xòe dance of the Tai people in Viet Nam	2021
Ninh Thuan	Art of pottery-making of Chăm people	2022

Source: Author synthesis from UNESCO

Note: <https://ich.unesco.org/en/state/viet-nam-VN?info=elements-on-the-lists>**Appendix 4. Correlation between explanatory and instrumental variables**

	UNESCO	Tourism revenue in log	Number of passengers	Number of shopping malls	Volume of goods sales
UNESCO	1.000				
Tourism revenue in log	0.370	1.000			
Number of passengers	0.124	0.559	1.000		
Number of shopping malls	0.091	0.630	0.894	1.000	
Volume of goods sales	0.068	0.611	0.925	0.941	1.000

Appendix 5. Linear relationship between tourism development indicators and financial inclusion index, Vietnam from 2013 to 2020



Source: Authors

Appendix 6. Regression of tourism revenue on financial inclusion components

Dependent variables	Financial Inclusion	Banking Account	Saving books	ATM card	Credit card
Tourism revenue in log	-0.003 (0.107)	0.003 (0.013)	-0.003 (0.007)	0.023* (0.012)	-0.003 (0.003)
Gross domestic product per capita	0.000 (0.013)	-0.002 (0.002)	0.001* (0.001)	-0.001 (0.001)	-0.000 (0.000)
Gross domestic product per capita squared	0.000 (0.000)	0.000* (0.000)	-0.000* (0.000)	0.000 (0.000)	0.000 (0.000)
Literacy	-0.001 (0.044)	0.002 (0.006)	0.001 (0.003)	-0.004 (0.005)	-0.000 (0.001)
FDI implemented	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
Dummy variables	Yes	Yes	Yes	Yes	Yes
Constant	-0.626 (4.086)	-0.043 (0.520)	0.020 (0.286)	0.545 (0.462)	0.028 (0.133)
Observations	243	243	243	243	243
R-squared	0.616	0.687	0.188	0.742	0.220
Number of province/city	62	62	62	62	62

Source: Authors.

Note: Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Appendix 7. Regression of number of passengers on financial inclusion components

Dependent variables	Financial Inclusion	Banking Account	Saving books	ATM card	Credit card
Number of passengers	0.161** (0.080)	0.016 (0.010)	-0.003 (0.006)	-0.001 (0.009)	0.011*** (0.003)
Gross domestic product per capita	0.007 (0.013)	-0.001 (0.002)	0.002* (0.001)	-0.001 (0.001)	0.000 (0.000)
Gross domestic product per capita squared	-0.000 (0.000)	0.000 (0.000)	-0.000* (0.000)	0.000 (0.000)	-0.000 (0.000)
Literacy	-0.008 (0.040)	0.002 (0.005)	-0.000 (0.003)	-0.004 (0.005)	-0.000 (0.001)
FDI implemented	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
Dummy variables	Yes	Yes	Yes	Yes	Yes
Observations	252	252	252	252	252
R-squared	0.624	0.683	0.169	0.733	0.300
Number of province/city	63	63	63	63	63

Source: Authors. Note: Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Appendix 8. Regression of number of shopping malls on financial inclusion components

Dependent variables	Financial Inclusion	Banking Account	Saving books	ATM card	Credit card
Number of shopping malls	0.069*** (0.022)	0.007** (0.003)	0.001 (0.002)	0.005* (0.003)	0.003*** (0.001)
Gross domestic product per capita	0.007 (0.013)	-0.001 (0.002)	0.002* (0.001)	-0.001 (0.001)	-0.000 (0.000)
Gross domestic product per capita squared	-0.000 (0.000)	0.000 (0.000)	-0.000** (0.000)	0.000 (0.000)	0.000 (0.000)
Literacy	-0.003 (0.039)	0.003 (0.005)	0.000 (0.003)	-0.004 (0.005)	-0.000 (0.001)
FDI implemented	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
Dummy variables	Yes	Yes	Yes	Yes	Yes
Observations	252	252	252	252	252
R-squared	0.635	0.693	0.186	0.741	0.271
Number of province/city	63	63	63	63	63

Source: Authors.

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Appendix 9. Regression of number of goods sales on financial inclusion components

Dependent variables	Financial Inclusion	Banking Account	Saving books	ATM card	Credit card
Volume of goods sales	0.356** (0.145)	0.044** (0.018)	-0.005 (0.010)	0.006 (0.017)	0.021*** (0.005)
Gross domestic product per capita	0.008 (0.013)	-0.001 (0.002)	0.002* (0.001)	-0.001 (0.001)	0.000 (0.000)
Gross domestic product per capita squared	-0.000 (0.000)	0.000 (0.000)	-0.000* (0.000)	0.000 (0.000)	-0.000 (0.000)
Literacy	-0.010 (0.039)	0.002 (0.005)	-0.000 (0.003)	-0.004 (0.005)	-0.000 (0.001)
FDI implemented	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
Dummy variables	Yes	Yes	Yes	Yes	Yes
Observations	252	252	252	252	252
R-squared	0.628	0.690	0.169	0.733	0.307
Number of province/city	63	63	63	63	63

Source: Authors.

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1