

# Digital Development

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### **Alibaba in Mexico: Adapting the Digital Villages Model to Latin America**

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# Alibaba in Mexico: Adapting the Digital Villages Model to Latin America

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## **Abstract**

Based on experiences in China where rural development is said to have been accelerated through use of its e-commerce platforms to create so-called “Taobao Villages”, Chinese digital conglomerate Alibaba has sought to export its vision of “inclusive globalisation” to other economies in the global South, through initiatives intended to reduce inequality by specifically supporting small enterprises. Some research has already charted its multi-dimensional “Electronic World Trade Platform” approach. However, its more narrowly-focused “Digital Villages” approach, currently being implemented in Latin America, has yet to be analysed.

Using evidence from interviews and primary documentation, this paper analyses the activities in Mexico of Atomic88, an Alibaba subsidiary in Mexico that (initially) focused on digitally-enabled development of small enterprise. It finds that Alibaba’s nascent position in an e-commerce market dominated by US and Latin American platforms led it to follow a quite different path from the Chinese Taobao Village model. It sought out the action areas – training and consultancy – that would not directly compete with incumbents, and worked as an indirect facilitator of local actors, rather than directly intervening. While inequality-reduction impact of Alibaba’s approach could be called into question, what it has done is build relationships with key digital economy stakeholders in Mexico. These show signs of providing valuable stepping stones towards a larger and more direct presence in Mexican e-commerce.

## A. Introduction

There have been hopes that digital technologies can reduce the serious economic inequalities that face all countries of the global South. For example, by providing internal efficiencies and offering access to wider markets for enterprises of all sizes (Tapscott & Williams, 2010). In practice, though, this has typically not been the case, with larger companies appearing to be the winners from adoption of digital technologies, in comparison with smaller enterprises (OECD, 2021). This issue is most often captured in the notion of the digital divide – the differences that exist between individuals, households, businesses, and territories of different socioeconomic levels with respect to the opportunities that digital technologies can offer (OECD, 2001). This is understood to derive not just from differentials in access to the technology but also in relation to other factors such as the knowledge necessary to make effective use of digital technologies, and the resources necessary to turn digitally-enabled decisions into actions (Pisanty Baruch, 2005).

China is often held up as an exception, given the enormous progress it has made in application of digital technology not just in its metropolitan centres but right across the country. Best-known of its digitally-enabled rural development initiatives is the “Taobao Village”, defined based on the extent of online sales in a rural community occurring through the Taobao e-commerce platform run by Chinese technology conglomerate, Alibaba. By 2022, there were more than 7,000 such villages in China with research claiming significant economic benefits via small and micro-enterprise development (Leong et al, 2016; Fan, 2019; Boufflet, 2022).

Because of its perceived success in China, the Taobao Village model has been promoted in other developing countries as a potential model for inclusive digital development. This promotion has particularly been by Alibaba itself, especially through its CEO, Jack Ma, who has incorporated experiences in China into the concept of “inclusive globalisation” (Seoane, 2020). This is a claimed counter-hegemonic approach which seeks to use digital technologies to empower those who have been left behind by Western globalisation; notably small enterprises, women and young people. The highest-profile encapsulation of inclusive globalisation is the Electronic World Trade Platform (eWTP) which aims to deliver an entire e-commerce ecosystem – physical infrastructure, financial and logistical services, training, new institutional arrangements, etc. – with Alibaba’s own e-commerce platform at its heart (Hernandez, 2019).

eWTP has been implemented in a number of developing countries with both general analyses (Lefevre & Wiat, 2020; Seoane, 2020; Johnston, 2021) and specific studies relating to individual countries such as Malaysia (Naughton, 2020) and Rwanda (Hamersma, 2021). Much less attention has been given to alternative approaches that Alibaba has used in countries less immediately amenable to its eWTP approach. In Latin America, for example, Alibaba has been using a more incremental “Digital Villages” strategy that seeks to support local small enterprises using digital technology.

Given the lack of existing research, this case study undertook to answer three quite broad-ranging research questions (RQs), using the example of Alibaba's inclusive digital development strategy in Mexico, implemented through its local subsidiary, Atomic88:

RQ1 - Strategy description: What is Alibaba's strategy in seeking to achieve the objective of more inclusive digital markets in Mexico?

RQ2 - Comparative analysis: How and why is Alibaba's inclusive digital markets strategy in Mexico similar to and different from its Taobao Village initiative in China?

RQ3 - Outcome: What has so far been achieved by Alibaba's initiative in Mexico?

To address these questions, the paper first reviews existing literature about small enterprise digitalisation initiatives in Mexico, in China, and exported from China to other developing countries. Following an explanation of research methods, it analyses Alibaba's Digital Villages project in Mexico before discussion and conclusions.

## **B. Background**

Globalisation has been one of the most powerful developmental forces of the past decades. However, the current dominant form of globalisation has left segments of society behind, including the majority of small enterprises, making them a relatively excluded market segment (Hilbert, 2001; Gamage et al, 2020). Given the association of digital technologies with efficiency, growth and globalisation, there have been aspirations that digitalisation of small enterprises could help close inequalities, and this has been a strategy pursued for many years by government, development agencies and others in the global South (Southwood, 2004; Al-Busaidi et al, 2019).

However, such initiatives have often run into difficulties, with a range of factors constraining the potential of digital to foster small enterprise growth and globalisation. Some problems can be seen as content-related; that is, concerned with what initiatives have sought to do. Small enterprise digitalisation has often been techno-centric, focusing solely or largely on providing Internet connectivity and less often also on providing software applications for the enterprises (Samara & Terzian, 2021). Yet, studies have consistently shown that small enterprises require a set of complementary inputs if they are to make effective use of digital technologies (World Bank, 2016; Schia, 2018). These inputs particularly include human capabilities: not just use-skills for digital systems but also knowledge of schemes and technologies, and abilities to contextualise generic understandings to the specifics of a particular enterprise (Akpan et al, 2022). They also include physical and logistics infrastructure: for example, the roads and delivery systems to take goods ordered online from an enterprise to the customer (Chege & Wang, 2020). And they include institutional support services such as finance and legal infrastructure for online contracts (Meltzer, 2014).

Other problems can be seen as process-related; that is, concerned with how initiatives have been implemented albeit with a knock-on impact on inputs. Three will be identified here but all in some ways derive from the fact that initiatives tended to be top-down and supply-rather than demand-driven; that is designed from the perspective of the implementing government or other development agency, rather than from the perspective of entrepreneurs (Heeks & Duncombe, 2001; Curtis, 2016; World Bank, 2016; Cave & Flores-Roux, 2017; Samara & Terzian, 2021). There has been insufficient attention to mechanisms to motivate those involved to take new actions or to see them through sustainably; especially a lack of incentives for entrepreneurs to give their time and energy. Leadership of initiatives has been remote and needed to do more to involve entrepreneurs. And formation of new stakeholder relations has been lacking; particularly the kind of new commercial relationships (e.g. with new suppliers or traders or customers) that could form a new value network for the small enterprises involved (Christensen et al, 2019).

Alibaba's approach – epitomised in its Taobao Villages – claims to be different, and to have significantly addressed many of the shortcomings of prior interventions that sought to drive forward small enterprise digitalisation. Analysis of Taobao Villages, for example, shows a strong commitment, not just to the provision of applications in the form of Alibaba's e-commerce platform Taobao and supporting e-payments, e-shop, etc. systems but also to a slew of complementary inputs. Alibaba itself provides direct training for local entrepreneurs, site visits to successful role models, free wireless Internet connectivity, and support services such as finance and logistics (Leong et al, 2016; Wei et al, 2020; Neilson, 2022). It has stimulated local governments in rural China to deliver physical infrastructure (telecommunications and transport links), and to develop favourable tax and other policies to help incentivise not just local entrepreneurship but also inflow of related finance providers, suppliers, traders and auxiliary services (He, 2019; Wei et al, 2020; Boufflet, 2022). Site visits, alongside financial incentives, have helped to motivate entrepreneurs to participate but are also a source of experiential learning about best practices for production, online marketing and sales of local goods (Li et al, 2018). The successful role models do not provide a basis for commercial relations with aspiring Taobao entrepreneurs, but those have come from local service providers (e.g. in packaging, marketing, logistics) that are induced to emerge and from local e-commerce intermediaries (Leong et al, 2016; He, 2019). While many entrepreneurs set up their own individual e-shop on Alibaba's platforms (there were an estimated three million such shops on Taobao by 2021 (AliResearch, 2021)), many others sell via an e-shop shared by the local community and run by an intermediary who acts as a local facilitator, offering advice on everything from quality control of production to how best to market and sell products via the Taobao platform (He, 2019). Lack of knowledge of such broader issues represents a greater barrier to e-commerce than understanding the technical functionalities of the platform, and incorporation of a basis for learning such knowledge is a key benefit of the Taobao Village model (Li et al, 2018). Another key feature is the profile of entrepreneurs: there has been a specific focus on youth with three quarters of Chinese rural e-entrepreneurs being in their twenties; something that likely correlates positively with a higher level of motivation and of self-learning capabilities than might be the case with an older cohort (World Bank & Alibaba Group, 2019; Boufflet, 2022). Although Alibaba is

obviously a key facilitator, it is these entrepreneurs (often part of a network of family businesses), alongside the local e-shop intermediaries and other grassroots leaders, and local government officials who really drive the process along, with all being aligned to achieve a common goal of growing the local economy (Leong et al, 2016; He, 2019). Notwithstanding the image of China as a model of top-down policy decision-making, one key to its recent economic success has been the freedom allowed for local economic initiatives such as these (Li, 2017; Ding et al, 2019). In this and other ways, then, the Taobao Villages approach to small enterprise digitalisation differs from that typically and historically seen in other developing countries; as summarised in Table 1.

Taobao Villages are not without their downsides: growth in local production and incomes has been linked to inequalities between the younger villagers who participate and the older ones who do not, to disruptive in-migration, and to higher levels of pollution (Leong et al, 2016; Tang & Zhu, 2020; Wang et al, 2021). Other critics consider that there is a relentless stream of positive publicity from stakeholders with vested interests that has likely exaggerated and almost mythologised Taobao Villages (Couture et al, 2021). Nonetheless, they have undoubtedly had a transformative economic impact on locations in China that were previously marginalised and Taobao more generally has enabled millions of small enterprises in China to be inducted into e-commerce (AliResearch, 2021; Zhou et al, 2021).

The scale of this perceived success has been sufficient to convince Alibaba and, in particular, its CEO, Jack Ma, that experiences in China could form the basis for a new model of digital development: “inclusive globalisation” (Seoane, 2020). This would use the power of e-commerce to close inequalities by accelerating integration of those relatively-excluded by extant globalisation: small enterprise, youth, women. The principle vehicle for this has the concept of the Electronic World Trade Platform (eWTP). While it is recognised that the context in China is different from that in other developing countries (World Bank & Alibaba Group, 2019), eWTP has essentially sought to replicate the Chinese Taobao experience in other countries, bringing together as many of the features shown in Table 1 as possible as a package of measures claimed to create an entire digital trade ecosystem to facilitate growth of local small enterprise (Johnston, 2021). Setting aside questions of whether eWTP will actually deliver inequality-reducing development of local small enterprise (Hernandez, 2019), tailored versions of this full-ecosystem approach have been limited so far to just a few developing countries – namely, Malaysia, Rwanda and Ethiopia – where factors were conducive such as strong central government support and either an existing presence of Alibaba in the e-commerce market or the existence of local commodities demanded by China, which are to be commercialised via Alibaba’s platform (Yean, 2018, Lefevre & Wiert, 2020; Naughton, 2020).

Category	Dimension	Description	Chinese Taobao Villages Model	Traditional Approaches to Small Enterprise Digitalisation	
Content	Digital systems	Systems that facilitate value creation for small enterprises	Constellation of integrated systems focused around Alibaba e-commerce platform: e-payments, e-shop development tools, etc.	Techno-centric focus, particularly on Internet connectivity	
	Complementary inputs	Human capabilities	Knowledge and skills for effective use of digital systems by entrepreneurs	Development of entrepreneur e-commerce capabilities via direct training and indirect exposure e.g. intermediary support and site visits	Training and learning not particularly considered
		Infrastructural enablers	Factors required to enable effective use of digital systems by small enterprises	Physical infrastructure (internet connectivity, roads); support services (finance, logistics, intermediation and e-commerce facilitation); institutions (local government tax, regulation).	Not considered other than Internet connectivity
Process	Motivation	Incentives for participation and action of stakeholders	Financial and experiential incentives bringing gains for core and support-service entrepreneurs; market pull as core driver	No additional incentives beyond assumption that benefits of digitalisation were convincing enough	
	Leadership	Nature of core direction and drive for initiative	Market-led, demand-pull model that is government-enabled, with local stakeholder engagement	Government-led; top-down initiatives with little or no participation from local stakeholders	
	Value network	Formation of new commercial relationships	Creates new digital ecosystem and economic value network for small enterprises centred on e-shop intermediaries	Focuses on existing value network and relationships	

**Table 1: Comparing the Taobao Village Model with Traditional Approaches to Small Enterprise Digitalisation**

But such conditions do not exist in many developing countries, for example in much of Latin America, where e-commerce markets have been relatively well-developed for some years, Alibaba has historically had a very limited presence, and political pressures – e.g. from the US – may not always be conducive to high-profile central government collaborations with Chinese entities (Geldman, 2021; Malena, 2021). In these circumstances, Alibaba has had to

take an alternative approach that, while informed by the eWTP vision, is much less ambitious in its initial scope. Mexico is one such example, where Alibaba is working through its local subsidiary, Atomic88, and other local institutions to support digital inclusion, involving particularly a version of Digital Villages project. Given the lack of analysis to date of Alibaba's activities in Latin America, this forms the focus for the research described next, that includes a comparison of the Mexican Digital Villages project to the original Taobao Villages blueprint as summarised in Table 1.

## C. Methods

The research strategy adopted here was that of a single exploratory case study (Yin, 2018); with the case in question being the activities of Atomic88 in Mexico. Consistent with the tenets of case study research, a multi-method, qualitative methodology was adopted that sought triangulation of methods and data sources (Yin, 2013; Rashid *et al*, 2019).

The first method adopted was semi-structured interviews. Following the rationale of Brunetti *et al* (2020), this research adopts a multi-stakeholder approach. This gathered responses from at least one representative of each key stakeholder group that could be identified in relation to the case study; thus triangulating between different sources. This was therefore a purposive sampling approach that covered the following stakeholders: Atomic88, small enterprise owners, mentors, government officials and educators (see below for further explanation of roles). In addition, a structured questionnaire was administered to three trainee consultants emerging from the core training initiative of Atomic88. Table 2 provides a summary overview, with all contacts being undertaken in the first half of 2022. The codes in the table are used below in the Findings section. The final method and data source was gathering of primary documentation: webpages, newsletters, reports, etc., of specific relevance to Alibaba's objectives and actions in Mexico, and in accordance with principles of documentary research (Bowne, 2009).

Design of the interview and questionnaire content and analytical frame for these and the primary documentation data was based around the three research questions. This used a mixed logic. Given the lack of existing insights into Alibaba's strategy in Latin America, and the implications of that strategy, RQ1 and RQ3 were approached inductively. By contrast, given the analytical frame for Taobao Villages derived above, this was used as a deductive starting point for RQ2. Data from the multiple methods and sources were incorporated into a single corpus that was analysed using in vivo coding; either matching or deriving concepts and patterns depending on use of deductive or inductive logic for the different research questions (Auerbach & Silverstein, 2003; Gioia *et al*, 2013).

Institution	Role Description	Code
Atomic88	Manager in Alibaba Group subsidiary in Mexico	A8
ITESM Puebla	Alibaba Global Digital Talent (GDT)-certified educator in Puebla	CI
Tecnológico de Teziutlán	GDT-certified educator in Puebla	CT
Universidad Tecnológica de Querétaro	GDT-certified educator in Queretaro	CU
“Herbea”	Small enterprise owner in Mexico City producing beauty and personal health products	EH
“Viva Bacanora”	Small enterprise owner in the State of Sonora producing <i>bacanora</i> alcoholic beverages	EV
State Government of Guanajuato	Government official in Office for Coordination of Foreign Trade Promotion of the State of Guanajuato	GG
State Government of Puebla	Government official in General Office for Entrepreneurship, Competitiveness and Business Development of the State of Puebla	GP
“Poderosa”	GDT-certified mentor	MP
Tecnológico de Teziutlán	Trainee consultant	TC1
Tecnológico de Teziutlán	Trainee consultant	TC2
Tecnológico de Teziutlán	Trainee consultant	TC3

Note: names of enterprises have been pseudonymised

**Table 2: Interview/Questionnaire Stakeholders**

## D. Findings

### D1 The Digital Villages initiative in Mexico

In 2019, Mexico’s e-commerce market with potential for local small enterprise involvement was dominated by Argentina-based Mercado Libre and US-based Amazon, alongside the sites of major retailers – Mexican subsidiaries of major chains like Walmart and Sears, or local firms like Coppel and Liverpool (George, 2019). Alibaba itself had no real profile or presence via a subsidiary, nor had it built up any strong relationships with local actors, particularly at federal level. As a result, although guided by the logics and a narrative of inclusive globalisation and seeking to digitalise local small enterprises, it could not adopt the type of maximalist approach inherent to Taobao Villages or their global variant, eWTP.

Instead, Alibaba focused at state level, signing memorandums of understanding (MOUs) with a number of state governments, which sought to impact small enterprises mainly through the agency of state-level higher education institutions (HEIs). This was a Digital Villages model that originated from use of Taobao in rural China but was then modified through experiences in Africa and other global South locations during the late 2010s that provided e-commerce training for local entrepreneurs who were then to act as catalysts for further small enterprise digitalisation in their home countries (Vanek, 2018). Alibaba had

itself directly funded and delivered this training but had learned this approach did not generate local ownership and collaboration (A8). The strategy adopted in Mexico was therefore one that relied much more on the actions of, and funding from, local stakeholders.

The Digital Villages model within the MOU incorporated a staged process starting with identification, in collaboration with local stakeholders (e.g., government agencies or business associations), of small enterprises deemed to have marketable products but lacking digital systems and capabilities (Atomic88, n.d.). This was then followed by identification of a nearby HEI where staff would be trained to obtain certification in Alibaba's Global Digital Talent (GDT) programme (formerly known as Global eCommerce Talent). That training would be usually paid for by the state government. The HEI educators would then cascade this training to their students who would become "trainee consultants" sent out to support the implementation of new digital systems into the identified small enterprises. Based on their training and consulting interventions, the students would receive academic credits for their particular degree course.

State governments are well aware of the contextual differences between China and Mexico (GP), yet they remain attracted to the contrast between the image of Taobao Villages' success in China and the perceived relative failure of previous attempts to support small enterprise in Mexico. The first MOU was signed in August 2019 with the Guanajuato state government. With suggested potential for local small enterprises to export goods including shoes, handicrafts and agri-food to China, the local HEIs included Instituto Tecnológico de León and Universidad de Celaya (GG). In 2020, a similar MOU was signed with Sonora state with local HEIs training nearly 1,000 students working in teams of four to support digitalisation of more than 200 local small enterprises (though a planned second phase was cancelled in 2021 following a change of government).

The GDT training curriculum implemented in Mexico was a generic one developed by the Hangzhou-based Alibaba Business School on the basis of experiences with Taobao Villages. This curriculum has been delivered worldwide through the Alibaba Global Initiative which is the main instrument for promotion via education and training programmes of the Alibaba inclusive globalisation model (eWTP, 2021). In August 2020, Alibaba determined that delivery of this certificated trainer training and the other support outlined within its MOUs would best be undertaken through the creation of a local subsidiary that would bundle this as part of a Digital Villages project, but would also work to advance Alibaba's position in Mexico in other ways. That subsidiary was called Atomic88 which was also intended to provide a locally-associated "neutral space" through which local partners might work more comfortably rather than directly interact with Alibaba (A8). Alongside the Digital Villages project, Atomic88 also provides more general GDT training and e-commerce consulting services.

Following the formation of Atomic88, two other MOUs were signed in 2021. The Queretaro state government involved just one HEI, Universidad Tecnológica de Querétaro from which 50 staff were trained by Atomic88 and then cascaded this to 1,000 students as trainee

consultants to work with 50 small enterprises. In 2022, this was expanded to include five other universities, with their students reaching out to 200 enterprises. The government of Puebla state involved 15 different HEIs from which 37 staff were trained by Atomic88 and in turn trained more than 800 students to work as consultants supporting 180 small enterprises (*GP*). In addition, and without any direct state government involvement, one of Mexico's largest universities, Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM), which has campuses across the country, signed a direct agreement by which it would pay Atomic88 to train its staff, and knowledge would then be cascaded into small enterprises via the student trainee-consultant model (Tec Review, 2021). In terms of overall metrics, as of May 2022, Atomic88 states that the Digital Villages initiative in Mexico had thus far trained around 400 HEI educators, who had in turn trained 8,000 students as trainee-consultants, who had in turn supported 1,500 small enterprises (Atomic88, 2022). It further cites a claim from the Guanajuato state government that participating small enterprises had seen their income increase between 200-300%. The current research has no way of verifying these claims.

This, then, represents the dominant model being used by Alibaba in Mexico to support small enterprise; a key feature of which has been the lack of direct promotion of Alibaba's own e-commerce platforms. The local version of GDT training provided to the higher education staff – and thence to their students and through them as solutions offered to local small enterprise – does use Alibaba digital content as the model in discussing some of the more theoretical topics (*GP*). But it has otherwise been customised by Atomic88 to the Mexican context in terms of the applications that are incorporated (*A8*). Examples include e-commerce platforms (e.g. Mercado Libre), e-commerce shop/marketing development applications (e.g. Shopify), logistics applications (e.g. 99minutos) and financial services (e.g. Dapp). Another key feature is Alibaba's relatively arms'-length role. Although the key inspiration for the initiative may be the company's development of the Taobao Villages in China, it acts only indirectly in Mexico in two senses. It acts via a local subsidiary run by Mexican staff, and it provides only the first top-level training. The other steps from funding and small enterprise identification through to the cascade of knowledge via HEIs into the small enterprises, come entirely from Mexican organisations and individuals: small business associations, state governments, higher education institutions, local digital solution providers, students and entrepreneurs.

Since 2022, Alibaba has been able to expand to a broader strategy in Mexico, with initiatives aimed at larger and/or more export- or growth-focused enterprises (*GG*). Using the eWTP label, Alibaba has signed an agreement with CONAGO, the Mexican Confederation of State Governors, to roll out e-commerce to a greater number of Mexican enterprises. It has signed MOUs with individual state governments aiming to connect Mexican enterprises – especially larger, urban-based, export-ready firms – to exports via the alibaba.com platform. Atomic88 set a goal of 300 exporters participating in a Mexican "pavilion" on the platform by the end of 2022 (Campus, 2021). New training programmes for business owners were launched such as the Alibaba Netpreneur Masterclass for Latin America, and the e-Founders Fellowship that provides e-commerce training. It has also opened its first import logistics

distribution centre, to service Mexican consumers purchasing Chinese products through its AliExpress platform (Juarez, 2022).

Having outlined the Digital Villages strategy used by Alibaba in Mexico, we move next to analyse what is being done in more detail; particularly in comparison to the original Taobao Villages model. As per Table 1, we begin with content elements before then moving on to discuss process elements.

## **D2. Content features**

Alibaba's Digital Villages initiative in Mexico is guided by the same logic as that of the Taobao Villages in recognising the value of, and need for, small enterprise digitalisation in order to increase market access and growth, and to reduce socio-economic inequalities. Atomic88 thus echoes the sentiments of Taobao Villages; seeing the Mexican project as an exercise in inclusive digital transformation focussed on bottom-of-the-pyramid empowerment (A8) and providing more than digital technologies. In other ways, though, Alibaba's strategy in Mexico is different from that in China.

### **D2.1. Digital systems**

As described above, Alibaba's platform is centrepiece of Taobao Villages: not just the e-commerce heart but also the site for digital intermediaries running e-shops, and the basis for other services such as payment and logistics. By contrast, Alibaba seems to have no direct interest in promoting use of its platforms such as Alibaba.com or AliExpress to Mexican small enterprises, and does not seek to impose a standardised, one-size-fits-all model. What is offered instead within the GDT training is much more of a patchwork of stand-alone services based on different applications already widely-used in Mexico (A8).

The link from Alibaba to the small enterprises is even more indirect because the educators and student trainee-consultants undertake an adaptation between the GDT training and the context of the small enterprises they seek to assist. As noted, the training focuses on e-commerce particularly but also on other relatively sophisticated applications of digital technology: e-payments, network risk management, development of IT services, ensuring systems compatibility, etc (MP). The staff and students of HEIs are not often that familiar with the circumstances of small enterprise but they rapidly become aware that much of this content has limited relevance to the much more basic digitalisation level and infrastructure of Mexican small enterprise (CI). To fully apply the digital systems covered by GDT training would mean understanding, sometimes paying for, and integrating a series of different applications. This would create complexity and increase the capability requirements for those involved. Given the limited digital capabilities and financial resources of the Mexican entrepreneurs (CI), this is then more likely to exceed the threshold of what the entrepreneurs themselves might be capable.

As a result, the consulting inputs to small enterprise typically focus on much simpler levels of digitalisation and look for applications that cost little or nothing: "good-enough" application solutions, rather than intending to be world-class or cutting-edge (A8, MP). For

example, they might help the small enterprise to set up a Facebook page or use a trial version of a web development tool to build a web page in order to create a first internet presence. In contrast to the situation with Taobao Villages, one does not therefore find development of e-shop intermediaries, e-payment systems, business networking, etc (*GP*).

## **D2.2. Complementary inputs**

As discussed above, the Taobao Villages initiative was particularly strong at delivering a series of complementary inputs beyond just software applications, which were necessary to ensure e-commerce would develop in the communities. Such inputs are much needed in parts of Mexico where there is a lack of human, financial, physical (e.g. roads, logistics) and digital infrastructure (IFAD, 2017; Martínez-Domínguez & Mora-Rivera, 2020; Aguerrebere & Bustos, 2021).

As seen above, Alibaba has focused on the development of the one input – human capabilities – that it can fairly readily influence given its role in Mexico. Even then, the Digital Villages initiative is not providing direct training to entrepreneurs as occurred in China, in part, perhaps, because all training materials are currently in English (*A8, CT*). Instead, the project is seeking to indirectly insert additional knowledge and skills via the student trainee-consultants. This itself has been somewhat hampered because, due to Covid-19, many interactions between students and entrepreneurs have been taking place by phone or online, which is seen to have affected the engagement of the entrepreneurs (*CT, GP*). This sets it further from the Taobao Village approach where site visits and other direct interactions enabled an experiential learning approach.

Development of other inputs such as physical and institutional infrastructure would represent much more of a challenge and these were not part of the programme, which has therefore not adapted itself to the full range of local requirements (*GP*). This has led to difficulties because a minimum requirement for participation was that small enterprises would have internet connectivity and yet many in Mexico do not (*A8, GP*). As a result, some state governments such as Puebla and Querétaro had to reorient their programmes (*CU, GP*). Their original intention had been to prioritise particularly marginalised small enterprises or those making traditional products. But many of these were in rural areas without internet access, alongside lacking other elements necessary for effective growth in commerce. Hence the programmes had to refocus on enterprises in urban and sub-urban locations that were somewhat larger, more-formalised and digitally-connected.

Urban locations and formal enterprises are already better provided with physical and institutional infrastructure and support services. For the initiatives that stayed focused on rural areas, these were still absent and not provided by the Digital Villages project. As one response, the government of Guanajuato decided to supplement the project with additional inputs including facilitation of logistics and financial services, provision of physical spaces for enterprises, and arranging direct, customised training of entrepreneurs (*GG*). Although these were not part of what Alibaba provided via Atomic88, they did come a bit closer to the provisions of the original Taobao Villages model.

### **D3. Process features**

Alongside provision of digital applications and complementary inputs, the Taobao Villages projects involved presence of strategic processes to develop rural e-commerce. The presence or absence of these in Mexico's Digital Villages project is analysed next.

#### **D3.1. Motivational incentives to participate**

Alongside the framework of inputs provided within the Taobao Villages initiative, its design motivated those involved to participate. The case in Mexico was different: there were low expectations about the programme which therefore did not particularly affect the initial motivation of entrepreneurs. Some came to the programme with a pre-existing motivation for higher sales and income through digitalisation; something to which Covid-19 had added a sense of urgency and opportunity in Mexico (A8, CI, Chiatchoua & Lozano Arizmendi, 2021). Other entrepreneurs would potentially have digitalised their SE without Digital Villages, but the programme may have been attractive because they expected exports. "Viva Bacanora", for example, a *bacanora* alcoholic beverage producer based in Sonora joined the initiative seeking better export opportunities (EV). With cancellation of the Digital Villages programme in 2021 after the change in government in Sonora, Viva Bacanora kept engaged with state officials in seeking help with exports because its owner was internally motivated. For many other entrepreneurs, though, that pre-existing internal motivation was not there. They had little appreciation of the role of digital technologies, they were very busy with the day-to-day activities of their enterprise, and they were reluctant to get involved (A8, CI, CT, CU). In some cases they did, for example with the persuasion of the local HEI or government, but it was not clear – especially for older entrepreneurs – that there was an internalisation of motivation that would enable the consulting interventions to be sustained into longer-term digitalisation (CT, CU, GG, GP).

As noted above, the Digital Villages project adopted a trickle-down model of capability-building with existing small enterprises via the HEIs, rather than seeking either to directly train entrepreneurs or to stimulate the formation of new enterprises, both of which were features of Taobao Villages. Within the trickle-down model, the trainee-consultants were the main carrier of capabilities into the enterprises. There was no financial motivation for them and the only direct incentive was to receive GDT certification and grades for their courses. As a result, their focus was on course requirements more than, say, delivering particular improvements for the small enterprises (CT, EB, EV). While some were keen to support the small enterprises, they have little or no experience with business and this was at best a temporary measure with no clear path to sustainable intervention (TC1, TC2, TC3). The presumption was that any support was transitory: that it would not sustain once the students had completed the particular degree course unit, and that succeeding cohorts of students would engage with new enterprises rather than continue to work with enterprises already supported by earlier students (CT). One could thus contrast this with the long-term presence, and hence potential support for local enterprise, provided by e-shop and other intermediaries in Taobao Villages.

As with the absence of complementary inputs, these issues had led the Guanajuato government to adopt a somewhat different approach. In seeking greater sustainability for their Digital Villages intervention, this government used HEI educators as the consultants working directly with small enterprises (*GG*). Students were used only in support roles and responsibility for digitalisation was, where feasible, given to young family members within the target small enterprises. For educators, the programme could help build new capabilities especially if, as in Guanajuato, these can be built by direct interaction with the enterprises and hence offer experiential learning (*CI, MP*). For their institutions, there was potential for attainment of institutional goals such as building university-industry links or delivering social impact or employability indicators (*CT, CU*). But this highlights that the Digital Villages project is dependent on motivations of higher education institutions and their staff and students who are all at least one step removed from the small enterprises whereas the Taobao Villages project more directly centred on entrepreneur motivations.

### **D3.2. Leadership**

In China, the Taobao Villages develop through a demand-pull model in which local government and other local actors remove barriers and provide the necessary complementary inputs to small enterprises being guided by market signals. By contrast, in Mexico, and following a historical pattern of digital and small enterprise interventions in the country, the model is more supply-push, with leadership coming from a combination of the state governments and higher education institutions.

Alibaba itself, via local subsidiary Atomic88, takes a relative back seat. It had initially considered funding the Digital Villages initiative but, as noted above, had not done this following earlier negative experiences in Africa when Alibaba funding failed to secure effective local ownership of and collaboration in the initiative (*A8*). Instead, and more akin to the original Taobao Villages approach, the local state governments – or the education institution in the case of ITESM – have come up with the funding for the project; something which ensures their engagement. As evidenced above, supply-push projects can suffer from not creating sufficient market incentives to induce entrepreneurial action. However, government leadership has a number of advantages since it allows for the programme to be delivered at scale and reaching out to locations in ways not possible if, for example, the project had been led by a commercial partner (*CI, CT*). Government leadership and funding has also ensured that other actors – the higher education institutions, business associations, even some of the individual small enterprises – have been more ready to involve themselves than they otherwise might (*A8, GG, GP*).

### **D3.3. Value network**

In China's Taobao Villages, a new digital ecosystem has been created, centring around the small enterprises. Not just an ecosystem but, within that, a new value network of suppliers, buyers and supporting services that is essential for any enterprise to create significant new value and, hence, greater income and growth (Christensen et al, 2019). In Mexico, the Digital Villages project has brought new connections for the small enterprises. However,

these connections are with student or educator consultants, not with new value chain stakeholders. Such consultants bring technical skills rather than a profound understanding of business, and, as seen, they come with uneven motivations for involvement (*GP, TC1, TC2*). Given the relative absence of links to new suppliers and buyers or to local digital intermediaries like those in China who run platform e-shops, then the project in Mexico can be seen more as an impetus to internal digitalisation of enterprises rather than to the insertion of enterprises into new e-commerce let alone export networks.

Guanajuato state again presents a somewhat different picture in that – moving beyond the initial remit of Atomic88's project – it has given its export promotion agency an orchestrating role (*GG*). The aim has been to facilitate the supply chain linkages and logistics for small enterprises via e-commerce and to boost the ability of local enterprises to export their goods. Universidad Tecnológica de Querétaro had similarly recognised some limitations of the current approach and was exploring how to put small enterprises together on a sectoral basis and then create an e-shop through which their goods could be sold (*CU*).

This is not to say that the Digital Villages project had failed to create a new value network. The initiative had brought together Alibaba (in the form of Atomic88), local governments, local business associations, and local HEIs; creating a collaborative network both at an institutional level and also at the level of personal relationships. While the prime mover in implementation may be the educational establishments – this is, in essence, an educational ecosystem – and while there was evidence of some new relationships being formed for the state governments (*A8, GG, GP*), it is Alibaba that has benefitted particularly. Atomic88 has built both social and political capital from this; developing knowledge, trust and relationships. Where Taobao Villages create an economic value network at the level of small enterprise, the Digital Villages project has been more notable for creating a socio-political value network at a higher, institutional level.

## **E. Discussion and Conclusions**

China is seen as an exemplar of how a developing country may overcome the capital and institutional deficits that have perpetuated poverty across the global South (Santos-Paulino, 2013; Chow, 2015). Significant use of digital technologies within its rapid economic growth have led China to be a digital role model and, within this, the Alibaba Taobao Villages have been of particular interest in developing countries (Kshetri, 2018). Alibaba has built its experiences in China into what it claims to be an alternative development model; one that particularly pays attention to groups relatively excluded from the benefits of development to date, including rural small enterprises.

Given limited analysis to date of Alibaba's attempts to roll out this model across the global South, we focus here on analysis of its Digital Villages initiative in Mexico. In addressing the first research question posed above, we find that Alibaba has adopted a localised and tightly-focused strategy that can be contrasted with the approach used with its eWTP

initiatives in Malaysia and elsewhere (Lefevre & Wiart, 2020; Johnston, 2021). Rather than seeking an immediate, high-profile presence for the Alibaba brand, it has worked through local subsidiary, Atomic88. Rather than operating at national level, it has worked with state governments. Rather than acting directly, it has adopted an indirect, trickle-down model. Rather than funding the initiative, it has persuaded local actors to spend their funds. And rather than undertaking a multi-dimensional intervention that would build a new digital ecosystem, it has concentrated only on training and consultancy.

We can expand these latter points by addressing the second research question, that compares the Digital Villages project in Mexico with the original Taobao Villages template from China; a comparison summarised in Table 3.

As shown, the Mexican Villages project is significantly different, with a number of elements found in Taobao Villages either absent or more limited in Mexico: many complementary inputs, site visits, local intermediary facilitators, entrepreneurship incentives and facilitation, nature of leadership, etc. Where Taobao Villages create a new digital ecosystem and concentrate on use of e-commerce to insert enterprises into new economic value networks, Digital Villages creates a new educational ecosystem that inserts higher education institutions, their staff and students into new learning opportunities. The Mexican projects have also been much more incremental and diverse in their digital interventions; helping enterprises with individual priorities rather than follow a template.

This explains why some actors – the Guanajuato state government most notably but also in the plans of Universidad Tecnológica de Querétaro – have supplemented the Digital Villages model. They have provided some absent elements or strengthened some more limited elements and thus brought their interventions closer to the Chinese original. Other states have reoriented from rural areas to locations which already have a greater presence of complementary inputs. Alibaba's own role is also quite different. In China, Alibaba stands at the heart of the digital ecosystem and the new value networks through its e-commerce platform and it is an institutional and educational prime mover. In Mexico, by contrast, Alibaba plays no role as digital platform provider, and stands almost off-stage as a facilitator of knowledge spillovers that are primarily driven by local actors.

This explains how Digital Villages differs from Taobao Villages but the second part of the research question seeks to understand why this should be the case. In a general sense, it is understood that all countries are different and that China's particular characteristics make it more different than most. Hence, any Chinese initiative would need to be customised in some ways to the local context of another country and this becomes more likely when the interests and objectives of local stakeholders – here the state governments – are taken into account. Some of the customisations can therefore be seen as planned: for instance, the interest of state governments to use public sector bodies as the implementing agencies for the project. Other customisations have been more emergent; for instance, the consultants' translation of GDT content to the conditions and priorities they met when interacting with the small enterprises; a translation that meant they might well diverge from the solutions covered within their training in order to fit the situation and priorities of the enterprises.

Category	Dimension	Description	Chinese Taobao Villages Model	Mexican Digital Villages Model	
Content	Digital systems	Systems that facilitates value creation for small enterprises	Constellation of integrated systems focused around Alibaba e-commerce platform: e-payments, e-shop development tools, etc.	Focus on stand-alone, locally-available digital systems with Alibaba only as theoretical example. Consulting focus on basic digitalisation of small enterprises using individual, simple, often cost-free systems	
	Complementary inputs	Human capabilities	Knowledge and skills for effective use of digital systems by entrepreneurs	Development of entrepreneur e-commerce capabilities via direct training and indirect exposure e.g. intermediary support and site visits	Development of HEI staff digitalisation knowledge via direct training, with trickle-down (Covid-impacted) model into small enterprises via student consulting
		Infrastructural enablers	Factors required to enable effective user of digital systems by small enterprises	Physical infrastructure (internet connectivity, roads); support services (finance, logistics, intermediation and e-commerce facilitation); institutions (local government tax, regulation).	Not considered in the standard model, so dependent on existing presence. Some exceptions to standard model
Process	Motivation	Incentives for participation and action of stakeholders	Financial and experiential incentives bringing gains for core and support-service entrepreneurs; market pull as core driver	Covid crisis and export expectations, reliant on temporary education-related incentives of HEIs, staff and students	
	Leadership	Nature of core direction and drive for initiative	Market-led, demand-pull model that is government-enabled, with local stakeholder engagement	Supply-push model that is local government-/HEI-led	
	Value network	Formation of new commercial relationships	Creates new digital ecosystem and economic value network for small enterprises centred on e-shop intermediaries	Creates new institutional ecosystem and educational value network centred on HEIs	

**Table 3: Comparing the Taobao Village Model with the Mexican Digital Villages Project**

There is a less-positive view of the local variance from the original Taobao Villages model, which is that it reflects a path-dependency from earlier digital initiatives in Mexico; particularly because of the involvement of government. We cannot provide direct evidence for this but – summarised in a comparison of the right-hand columns of Tables 1 and 3 – there are certainly many similarities between the Digital Villages project and earlier

initiatives: the supply-push, top-down design; the lack of action on other complementary inputs; the lack of attention to entrepreneurship incentives and facilitation or to creation of new enterprise value networks; etc.

Of course one key difference from earlier initiatives is the core of Digital Villages, around training, consulting and capability development. This derives from Alibaba, and Alibaba's Digital Villages strategy can in turn be seen to derive from the company's position as a relatively new entrant in a market already dominated by Mexican or US digital firms. Rather than seeking to immediately compete with them head-to-head, Alibaba developed a strategy at the intersection of two niches largely ignored by existing players: small enterprise and digital capabilities development. This follows a more general pattern of Chinese digital firms targeting market segments in developing countries that existing (typically Western) incumbents were neglecting (Djan & Owusu-Ansah, 2020). Looking across the various elements of Taobao Villages – centrality of Alibaba's own platforms; induced investment in physical infrastructure; development of rural digital support services – most would have been well beyond its capacities to deliver in Mexico. It thus instead chose an intervention within its zone of feasibility that was well-bounded and sensibly leaving the 'last-mile' direct engagement with small enterprises to local actors given its own limited knowledge of the particular circumstances of rural small enterprise. The company chooses what it is able to do given the local context rather than what it might ideally wish to do.

What of the outcome of Digital Villages; the third research question? One thing is clear: significantly greater levels of exports could not be expected of small enterprises involved. Of those small enterprises contacted within Digital Villages, many have been reluctant to, or unable to, engage. Some of the remainder have been assisted to enhance their level of digitalisation, at least temporarily during the interaction with the students, albeit with a lack of clarity as yet about any sustainability. But there still remains a gap to making even these enterprises into digitally-enabled exporters. It may, rather, be appropriate to understand the impact more in educational and institutional than enterprise terms. Alibaba has certainly succeeded in building digital capabilities in the HEI educators it has trained and, through them, their students. Whether or not the current initiative sustains long-term, those educators will train many more student cohorts with at least an indirect value from the capabilities they have developed.

Institutionally, the Digital Villages project can be seen to have helped Alibaba "find its feet" within the Mexican market: building knowledge, trust and relationships, all of which can be a valuable foundation for future expansion. There could have been a risk to all of these were the Digital Villages project seen to have failed but the outsourcing of implementation to local actors in some senses outsources this risk. In any case, risks of overt failure are small. The digitalisation of small enterprise occurs largely behind closed doors of the enterprise, and the worst likely to happen from the consulting is a lack of progress with digitalisation rather than any actual damage to the enterprise. Far from any risk of reputational damage, the Alibaba brand seems to have benefitted from the project. Alongside the building of social and political capital, this can be seen as partly explaining the

company's ability to expand from 2022 to a broader strategy. As outlined previously, this moves closer to the kind of eWTP approach seen in Asia and Africa and closer to the Taobao Villages model with a greater focus on the Alibaba platform, on e-commerce, on more export- and growth-oriented local enterprises, and on direct training from Alibaba. All of this involves Alibaba and its platforms more centrally than the Digital Villages project. From this perspective, the Digital Villages project can be understood as an initial market entry strategy and stepping stone towards the kind of Alibaba presence seen in other markets. That presence has included sales to Mexican consumers via AliExpress, which had grown to become one of the top 10 Mexican e-commerce sites by 2021 (Statista, 2021).

## **E1. Conclusions**

One view of Chinese multinationals in the global South is that they adopt a Sino-centric strategy; using Chinese funding to buy Chinese goods that are installed and run by Chinese labour (Tugendhat & Voo, 2021). There has been evidence of this in some projects of digital companies such as Huawei and ZTE (Makundi et al, 2016; Erie & Streinz, 2021). Alibaba, though, has taken a rather different approach. Consistent with findings about its eWTP initiatives (Yean, 2018; Neilson, 2022), analysis of the Digital Villages projects in Mexico shows use of a local subsidiary to collaborate with local stakeholders who fund the activity and implement key parts of it. Beyond that, though, the Mexican Digital Villages experience differs from that seen under eWTP. The platforms and systems of local and US competitors substitute for Alibaba's platforms as the advocated and implemented solutions; there is a singular orientation towards human capabilities; and Alibaba has taken a much smaller and more indirect role. These and other differences from the original Taobao Villages blueprint that has guided Alibaba's engagement with the global South arise because of context sensitivity. That context includes the specific nature of small enterprise in Mexico; the past history of digital interventions to support small enterprise; the priorities of local stakeholders, most especially state governments; and Alibaba's position as a relatively new entrant to a relatively mature e-commerce market. From that latter dimension, the rather uncertain impact of Digital Villages on Mexican small enterprise likely is of less concern to Alibaba than the success of the programme in relationship- and reputation-building, and in helping it move on to later-stage market strategies.

One can look at the gaps between Digital Villages and Taobao Villages and use those to make a series of recommendations: development of local intermediaries; use of site visits to motivate and educate entrepreneurs; direct training for entrepreneurs; provision of training materials in the local language; greater investment in complementary inputs; greater integration of enterprises into new value networks that provide access to new markets; and so forth. From Mexico's perspective, these will be developmentally valuable and this explains why some local stakeholders are trying to provide some of these gap-filling interventions. Their iterative approach – learning from the initial formulation of the Digital Villages programme and then revising that formulation on the basis of its impact – is also something that could be copied more broadly. It would enable a better match to the heterogeneity of context and experiences within each of Mexico's states; though it is an

approach that can be challenged by the changes in state government that occur in Mexico and which can disrupt continuity of long-term initiatives, as seen by the experiences of Sonora state. From Alibaba's perspective, however, the necessity for change to Digital Villages may be more questionable given that the programme in its current form appears to be delivering strategic benefits for the company.

Looking beyond Mexico, we hope that the analysis provided here can be of value in other developing countries. This may be especially so in Latin America given that the Digital Villages / Atomic88 approach is being replicated in other countries such as Chile and Bolivia. Given the crucial importance of local context that has emerged from this study, application in other countries needs to factor in the elements just listed: the status of small enterprise, the priorities of local stakeholders, and Alibaba's market position and strategy. Future research can track the progress of Digital Villages initiatives in other countries and, more generally, undertake further investigation of the nature, causes and outcomes of Alibaba's digital strategies in other developing countries.

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