

# Utilizing game theory scenarios to elicit coopetition dynamics in the development of inclusive tourism projects

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*The aim of this study is to explore the efficacy of employing game theory scenarios, referred to as ‘experiments’, in comprehending the behaviours of souvenir retailers within the realm of tourism project development. Specifically, the objective is to assess whether presenting various scenarios can incentivize souvenir retailers to adopt practices aligned with the project’s goals (coopetition), as opposed to the prevalent competitive behaviours, within a secluded, post-conflict setting. What sets this research apart is its utilization of behaviour modelling principles within the studied environment to discern disparities between the researchers’ initial perceptions of observed behaviours and the precise motivations guiding souvenir retailers’ decisions, thus reflecting on the researchers’ epistemological reflexivity. Our findings indicate that employing game-theoretic experiments significantly facilitated information sharing among interviewees, thereby enhancing contextual understanding. This study bridges theoretical frameworks with real-world complexities, shedding light on the challenges and opportunities inherent in promoting coopetition within unique socio-cultural contexts.*

**Keywords:** *game theory, behavioural economics, coopetition, inclusive tourism, epistemological reflexivity, development projects*

## 1 INTRODUCTION

For over 20 years, tourism academics and practitioners have been exploring novel approaches to alleviate poverty through tourism. Grounded in the hypothesis that coopetition – defined as a dual relationship between entities that cooperate and compete – fosters economic development and poverty reduction, this study aims to examine the relevance of employing game theory scenarios as a qualitative method

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to stimulate and understand cooperation and competition dynamics within a United Nations International Trade Centre (ITC) development project linked to inclusive tourism. Game theory, which is increasingly being applied to tourism research, makes it possible to understand the dynamics of conflict and cooperation between players striving to optimize their positions (Tavares, 2022). Now, in the context of sensitive environments such as that of the present study, we understand that epistemological reflexivity must underpin research and that researchers must critically examine their role and the socio-cultural context. With reference to criticisms of how dysfunctional international organizations can be (Barnett and Finnemore, 1999; Jacquemin and Thomas, 2016), this means that any programme must be responsive to its environment. This reflexivity enriches the analysis, offering nuanced perspectives in these underdeveloped contexts (Denzin and Lincoln, 2011; Carvalho and Fernandes, 2023).

This research unfolded as part of an ITC inclusive tourism project in the Pan Pet villages of Kayah State, eastern Myanmar (2014–2019). Pan Pet is known for its ‘long-neck women’ from the Kayan ethnic group, famed for the brass rings that appear to stretch their necks. The selection of Pan Pet for the ITC project was influenced by the Burmese government’s request to support the development of inclusive tourism in this province, and by the fact that only a few areas of the country were accessible to international visitors.

The Pan Pet area presents a complex context for any development or research project. Its five hamlets, spanning a single road, harbour three religions, seven clans with historical tensions, and a generational gap between ‘Burmanized’ youth and elders. Additionally, political differences exist between those aligned with the military junta and supporters of traditional ruling structures. Moreover, a significant number of long-neck women recently returned from refugee camps and border areas of Thailand brought experiences from a tourism model of souvenir sales marked by price competition, dubbed the ‘human zoo’ (Trupp, 2011). This posed an ethical dilemma: pursuing a sustainable tourism model amid entrenched private interests, risking project failure.

The ITC project aimed to enhance destination attractiveness while maximizing the income and welfare of tourism producers and exporters. Strategies included marketing development, on-the-job training, and product linkage to tourists and the tourism industry. Basically, inclusive tourism aims to leverage the tourism industry’s potential for development and poverty reduction (Eilgmann, 2014). Scholars such as Biddulph and Scheyvens, (2018) underscore its role in empowering local enterprises and marginalized communities through ethical tourism practices and benefit sharing. An example is enabling the creation of local added value through ‘backward linkages’ between the tourism sector and non-tourism industries (Cai et al., 2006; Winters et al., 2013; Thomas, 2014; Daly and Gereffi, 2018). Among these backward linkages, souvenir selling emerged as a source of income, employment and empowerment, particularly benefiting the poorest sections of village society (Suriya and Gruen, 2012). Early findings highlighted the significant economic role of the informal souvenir sector, echoing prior research (Pye, 1986; Wu et al., 2022). However, in emerging tourism destinations, Chim-Miki and Batista-Canino, (2018) found fierce competition among souvenir vendors, raising questions about fostering cooperation dynamics.

The tourism nature of a destination can nevertheless act as a natural driver of cooperation or competition, ensuring a balance between competition and collaboration (Ritchie and Crouch, 2003; Bengtsson et al., 2010; Komppula, 2014), and thereby improving stakeholder performance and the attractiveness of the destination. This study therefore aims to delve into the transition from competitive to cooperative dynamics among souvenir sellers, leveraging insights from behavioural economics

and game theory discussions. It endeavours to unravel the decision-making processes underlying this transition, within and beyond development interventions.

Through an integration of theoretical perspectives and empirical analysis, the research seeks to elucidate pathways and context-specific obstacles to nurturing cooperation among sellers for mutual benefit. Particularly, it explores how game theory experiments can illuminate the theoretical foundations of cooperation, offering insights that are theoretically favourable to them (cf. Bengtsson and Kock, 1999; Brandenburger and Nalebuff, 1995; Suhartanto, 2017; Chim-Miki and Batista-Canino, 2018; Meena et al., 2023). On the other hand, we also hope to see more awareness among development players that development approaches need to be adapted to local conditions, which are shaped by different socio-cultural, economic, and political realities (Mubita et al., 2017).

In Pan Pet, initial observations revealed a lack of coordination among souvenir retailers, resulting in detrimental price wars and conflicts, and undermining the destination's appeal. The lack of cooperation left the retailers in a situation where they seemed, from a theoretical perspective, worse off than if they had decided to discuss and agree strategies and prices. The lack of cooperation/coordination between local suppliers of goods and services often led to a price-cutting race to the bottom, which sometimes (1) undermines the commercial sustainability of their businesses and (2) leads to conflicts, which can negatively impact the profile and attractiveness of a destination in the global tourism market.

To elucidate the decision-making logic, we use two economic decision environments as dialogue facilitation tools informed by game theory (Redpath et al., 2018). This study therefore explores the reasons for and willingness or unwillingness of 11 souvenir sellers participating in the ITC project to adopt cooperative behaviours in this post-conflict rural tourist destination. To be clear, the aim was not to repeat experiments indefinitely (for example, the prisoner's dilemma), drawing qualitative conclusions from quantitative methods. Instead it was to use the principles and tools of game theory as a means of addressing sensitive issues and engaging in discussions that can facilitate understanding of the context and decision-making process of the souvenir sellers with whom the project worked. To do this, the researchers simplified two basic economic decision-making scenarios faced by local souvenir sellers and turned them into games. However the experiment did not aim to converge towards a Nash outcome or equilibrium.

Again, our interest in using the tools of game theory was motivated by the fact that there was still a lack of understanding among the project team of the reasons for some souvenir sellers to become involved in the project compared to those who had decided not to be involved. While game theory was first developed to predict situations, it has been used to address a wider range of situations, including conflict resolution (Barough et al., 2012), communication risks in project management (Hrazdilová Bočková et al., 2015) and cooperation studies (Okura and Carfi, 2014). Based on epistemological reflexivity and cultural sensitivity, this approach seeks to advance inclusive and sustainable tourism project initiatives in underdeveloped contexts.

## 2 LITERATURE REVIEW

### 2.1 Development aid, social realities and implementation challenges

The efficacy of development aid as a tool for poverty reduction has been a topic of ongoing debate (Guillaumont and Wagner, 2014). Many discussions have focused on broader questions such as the overall impact of aid on economic growth, income

distribution, and structural transformation within recipient countries (Boone, 1996; Burnside and Dollar, 2000; Sachs, 2005; Easterly, 2006; Rajan and Subramanian, 2008; Acemoglu and Robinson, 2012). However, there is also growing recognition of the importance of examining the practical aspects of aid delivery, including issues such as effectiveness, transparency, accountability, and the alignment of aid with recipient country priorities (Easterly, 2009; Ravallion, 2009).

Indeed, the intersection of epistemological limitations in international organizations and the challenges of implementing development programmes from offices in developed countries is a relatively less explored area in the academic literature. In his book, Escobar, (1995) explores the epistemological biases inherent in development discourse and practice, arguing that the approaches of international organizations often fail to adequately understand and address the complexities of local contexts. Similarly, authors such as Fisher, (1997), Kapoor, (2002), Mosse, (2004), Eyben et al., (2007), and Sumner and Tribe, (2008) offer valuable insights into related themes such as critical evaluation practices, participatory approaches, and the politics of evidence in international development.

Epistemological limitations pertain to the inherent constraints and biases in how knowledge is constructed, shaped, and disseminated within international organizations involved in development work (Eyben et al., 2007). This includes the dominance of certain paradigms, theories, and methodologies that may not fully capture the diverse social realities and contexts of the communities they seek to assist (Sumner and Tribe, 2008). It also encompasses issues related to power dynamics, cultural biases, and the marginalization of local knowledge and perspectives in decision-making processes (Kapoor, 2002).

On the other hand, implementation challenges refer to the practical difficulties faced by development programmes when executed from offices located in developed countries. These challenges can arise due to mismatches between top-down policy formulations and grassroots realities, insufficient understanding of local contexts and needs, limited stakeholder participation and ownership, bureaucratic hurdles, and logistical constraints, among other factors (Mosse, 2004; Fisher, 1997).

Exploring how the tools of game theory can help fill the gap between epistemological limitations in international organizations and the challenges of implementing development programmes from offices in developed countries involves leveraging game-theoretic frameworks to analyse decision-making processes, incentives, and strategic interactions in the context of development aid.

## 2.2 Cooperation and behavioural economics

In her book *Community Development Through Tourism*, Beeton, (2006) primarily discusses tourism theories related to the motivations of residents and visitors. However, she overlooks the roots of individuals' decision-making processes to engage in tourism-related activities or development projects. Incorporating local culture and social norms is indeed essential for successful tourism development projects and research conducted by non-profit organizations at the community level (Timothy and Nyaupane, 2009). By integrating these elements into tourism initiatives, organizations can ensure that their projects are culturally sensitive, socially responsible, and beneficial to the local communities they aim to support (Jamal and Robinson, 2009). This entails recognition of the deep consequences of culture, the embedded patterns of behaviour, and the processes of making meaning, and the significance of how they

impact on doing research across cultures (Shah, 2004). Any programme or research approach in such contexts has epistemological implications and demands consideration of respondents' subjectivities.

Economic theory partially explains behaviour and economic phenomena in informal, post-conflict, rural, and underdeveloped areas. Yet, it singularly fails to comprehend the contexts of development organizations' work or the consequences of their interventions. The challenge for these organizations lies in continual reflection through research and analysis, seeing themselves simultaneously as welfare-improving solutions to problems of incomplete information. But development organizations are not always efficient in their achievements, due sometimes to a lack of reflexivity, often not acknowledging changes they should make to their research programmes.

In remote and post-conflict areas, social norms and trust regulate behaviour (Peyton Young, 2007; Damayanti et al., 2017). Coordination within such contexts may hinder cooperation, let alone competition. By definition, competition – part of the competitive paradigm – is also a form of cooperation (Battista Dagnino et al., 2007). It relies on trust, opportunism, governance (Volgger and Pechlaner, 2014), and trust-building, and research on competition has expanded recently (Gernsheimer et al., 2021). Contextual factors, rather than purely economic motives, significantly influence decisions to cooperate (Damayanti et al., 2017), and therefore to compete. However, few studies have explored competition in informal economies where norms and trust replace formal contracts (Czakoń and Czernek, 2016; Damayanti et al., 2017). Moreover, the examination of trust (Furlong, 1996) and beliefs pertains not only to economics but also to psychology.

Exploration of the boundary between economics and psychology began in the 1950s, when Simon, (1959) highlighted deviations from rationality assumptions, leading to the emergence of behavioural economics. Meignel, (1998) used the Weberian framework of rationality to underscore the existence of two very different definitions of 'rationality', albeit not necessarily applying to the same field of research. The first, a generic (formal) definition of rationality dedicated to the study of social interaction, is 'philosophically and psychologically neutral', merely expressing a coherence of choices; and the second, a psychological dimension (substantial definition) of rational choice, focuses on individual motivations. Savage, (2016) underscores how individuals deviate from rational predictions, challenging economic assumptions of rationality. This complexity is especially evident in isolated and post-conflict contexts, where individuals' decisions regarding competition principles may not align with rational expectations.

Behavioural economics, revealing deviations from the standard *Homo economicus*, not only tests rationality assumptions but also analyses individual motivations, even in extreme environments such as conflict zones (McQuillin and Robert, 2012). Humans prioritize social status and rights over material goods (Polanyi, 2001 [1944]), and tend to focus on the near future rather than the distant future when facing risks (Kahneman, 1991). Thus, in conflict environments, non-economic factors significantly influence economic systems. Esteban and Ray's, (1999: 380) definition of conflict – as a situation where social groups with opposing interests incur losses to achieve preferred outcomes – guides our understanding in this paper.

### 2.3 Game theory and competition

Behavioural economics, delving into the psychology of economic behaviour, often utilizes game theory to analyse and predict human behaviour in strategic situations

(Tirole, 2013). Game theory provides a formal framework for modelling strategic interactions among multiple actors with conflicting interests, offering insights into how different actors make decisions and respond to incentives. It explores decision-making among groups where each player's outcome hinges on their rationality or expectations of others' choices (Nahhas and Corley, 2018). It considers the claims of various groups – such as families, friends, local communities, and economic and social classes (Sen, 1977) – thus shedding light on individual behaviours and parties' willingness to interact with others.

By applying game-theoretic concepts such as Nash equilibrium, cooperative and non-cooperative game strategies, and information asymmetries, researchers can analyse the incentives and constraints facing international organizations, donors, governments, and local stakeholders involved in development programmes (Bardhan and Dayton-Johnson, 2002; Barrett and Carter, 2010; Dasgupta and Ray, 1986). Furthermore, game theory can help identify potential strategies for overcoming epistemological limitations and implementation challenges in development practice. For example, game-theoretic analysis can inform the design of incentive mechanisms to encourage knowledge sharing and collaboration among international organizations and local partners, or facilitate negotiations to overcome coordination failures and achieve mutually beneficial outcomes.

Despite facing challenges such as demands for increased practicality in real-world applications (Samuelson, 2016), game theory is finding increasing use in project management, notably in studying market coordination failures (Wenner, 2007; Narbaev et al., 2022). In these failures, investment profitability depends on interdependent decisions by other agents. While a project may aim to alleviate poverty, it must also strive to equitably maximize economic and social benefits among (in this case) villagers. This entails achieving Nash equilibrium, where all players form beliefs, choose responses, and adjust until consistent (Camerer et al., 2004). However, behavioural economics suggests that, in complex situations such as historical conflicts, some agents may not adhere to neoclassical rationality (Barough et al., 2012). While each party may logically pursue Nash equilibrium strategies, this may not lead to Pareto efficiency for the entire system.

### 3 RESEARCH CONTEXT

The research was conducted at an inclusive tourism project site in the Pan Pet villages of Kayah State, Myanmar, comprising five hamlets with about 1000 inhabitants. Of these, approximately 22 women independently became vendors (compared to only half a dozen at the start of the project), selling souvenirs to local and foreign visitors.

The opening of Kayah State to foreign visitors in 2014 – with improved accessibility but also lack of clear understanding of the direction of change, and a lack of business and destination management skills – was seen as an opportunity for public and private stakeholders to ensure and implement the principles of integrated and sustainable tourism planning. Even before the ITC project, some tourists had started arriving in Pan Pet through organic channels.

Unequal distribution of increasing but limited tourism expenditures favoured a few beneficiaries, leading to stiff competition among souvenir sellers for primary visitor access, and resulting in conflicts and distrust within the community. Souvenir sellers believed their success largely depended on location quality; but their observed choices were difficult to explain using traditional location theories (Reigadinha et al., 2017).

Unlike Hotelling's, (1929) model, where retailers selling the same product locate their stores at the centre of a market and sell at the same price, souvenir sellers in Pan Pet considered the trade-off between attractiveness and distance – Spatial Interaction Theory (Brown, 1993).

A baseline survey conducted in 2015, before the project's commencement, showed several vendors in Pan Pet moving their stalls further down the main road (away from the villages) to gain a competitive advantage and be the first on the tourist route. At that time, each hamlet had 5–10 direct beneficiaries, and the total income from tourism was still negligible for most households interviewed. Consequently, many residents chose to migrate to other major tourist areas of the country or to Thailand. Tourism began attracting community interest, with visitors transparently funding essential small community projects such as land irrigation. Unlike past initiatives led by cooperation agencies mainly involving the village elder and his relatives, these projects granted villagers more control.

Each party has distinct motivations, agendas, and capacities. Thus, simultaneously with the implementation of the ITC project, some returnees from Thailand and the village elder began replicating the 'Thai model' in a small souvenir market near the main road leading to the village. This resulted in a low-level equilibrium or correlated equilibrium, as described by Aumann, (1987), trapping the long-neck women in an unsustainable tourism model marked by intense price competition and minimal revenues, worsened by resettlement away from the village.

However, this Thai-influenced model failed to enhance the destination's appeal, and limited tourism benefits to those wearing neck rings or with close ties to the village elder. Individual retailers, primarily women wearing rings, operated within an environment where cooperation with peers seemed nearly impossible due to similarities in their craft products and strong individualism. From the project's outset, distrust and high transaction costs posed significant challenges, hindering joint actions that could have boosted the destination's attractiveness.

The establishment of the souvenir market by the village elder's relatives and associates further divided the community. Macrae, (1982) noted that exposure to a market economy could fuel aspirations for self-enrichment and nepotism among local leaders, exacerbating conflicts and social fragmentation. Even before the market's inception, retailers had begun relocating their stalls along the main road to gain a competitive edge, sacrificing proximity to the village for closer proximity to customers as the first stop along the road where visitors traditionally lingered. This situation prompted the team to conduct the first game theory experiment. Interestingly, the market's creation, initially requiring an entrance fee, mirrored the zero-sum competitive logic behind the gradual movement of sellers along the road. The market's strategic location ensured tourists visited it before any other shops in the village.

While the market mainly offered imported arts and crafts products from Thailand, sold by the iconic long-neck women, the ITC project team worked to create a cooperative environment aimed at increasing the overall attractiveness of the destination and the wellbeing of the community. This was done by improving the selling skills of independent shop owners in Pan Pet's two highest hamlets (closest to the main road) and by training community members in three other remote hamlets to develop new 'Artisan Trail' products, whereby tourists could meet artisans at home for a more intimate, hands-on demonstration and experience of their skills. Broadly speaking, participation in tourism by Pan Pet's villagers can thus be summarized as involving four distinctive groups: (1) sellers in the craft market organized by the village elder, who did not cooperate with the project; (2) sellers in the two highest hamlets, who cooperated with the

project in a limited way but were interested only in selling souvenirs (the research sample group); (3) community members from the lowest three hamlets who developed more experiential tourism products; and (4) other community members not involved in tourism.

From its start prior to the development of the market and its continued development simultaneously over four years, the project has definitely achieved its key aims of establishing Kayah as an important new destination on Myanmar's tourism map while supporting the country's tourism stakeholders to develop more inclusive, sustainable, and profitable tourism. As evidenced from the field, between 2015 and 2019 the number of active community-based tourism (CBT) members increased by 177 per cent, from 35 to 97 people. In 2019, CBT service providers earned a direct income of US\$19,771, 10 per cent of which was contributed to a community fund used for school construction. As well as paying for the CBT services, on average, tourists spent an additional \$3–10 per group on souvenirs. In 2019 the Pan Pet Artisan Trail added significant value to local handicraft sales (scarves, blankets, bracelets, carvings, and so on): alongside the fixed CBT tour service charges, craft sales generated an additional income of approximately \$5548 (and villagers also earned extra by selling vegetables and chicken to the CBT's caterers).

#### 4 METHOD

By way of introduction to this section, we will delineate the two objectives associated with the hypotheses in the introduction that motivated this work: a research objective and a development objective. The research objective aims to explore whether utilizing experiments derived from classical game theory problems, based on real-life situations of individuals, can enhance understanding of their decision-making processes and the context in which the project operates. Conversely, the development objective seeks to investigate how development organizations can incentivize these same individuals to transition from a competitive dynamic to a cooperative one, thereby optimizing development projects. Utilizing game theory scenarios as a qualitative method involves constructing hypothetical situations where decision-makers strategically navigate their choices. These scenarios can offer insights into decision-making processes, preferences, and potential outcomes.

The post-conflict context of this research aligns well with the fundamental assumptions of game theory (Roy et al., 2010), including: (1) asymmetric information; (2) non-contractual social interactions; (3) the significance of local institutions and informal rules governing them; (4) adaptive preferences (bounded rationality); and (5) the dependence of individual benefits on the actions of others.

Initially, the team engaged in preliminary discussions with the ITC project fieldworkers to lay the groundwork and develop scenarios reflecting the research context (game 1) and the project objectives (game 2). Because an interview is a 'social event' (Hammersley and Atkinson, 2019) and 'displays cultural particulars' (Silverman, 1985), and, given the sensitive and dynamic nature of Pan Pet village, maintaining strong relationships was paramount. Recognizing their dual role as international consultants for the CBT segment of ITC's inclusive tourism project, the research team decided against directly conducting the research themselves because those doing research can not only affect data collection and analysis but can also impact the overall project (Griffiths, 1998). Concerns arose regarding culture-related codes and modes of interacting with outsiders, and potential misunderstanding or disagreements

with villagers due to the complex nature of the research. Therefore, a local Kayan team member – who had previously worked as a tour guide and was fluent in the local language and familiar with cultural codes and norms (that is, a social insider) – facilitated the research among the souvenir vendors involved in the project.

It is important to clarify that not all local parties (retailers) were willing to actively participate in the project (9 out of a total of 22) or act in ways that (from the researcher's point of view) could lead to the best results for the whole community rather than a part of it. Eleven other vendors, associated with the village chief, were therefore deliberately not interviewed to avoid complicating the overall fieldwork; however two other vendors (one who had moved his stall to the main road and the other who was located in the village) who were initially not part of the project asked to take part after hearing about it. The research assistant received training and detailed briefings from the researchers about the game theory situations before commencing the fieldwork, ensuring clear understanding and consistent presentation of available strategies and potential consequences.

The research assistant conducted 2x2 simultaneous-move games individually with the participant long-neck women residing in Pan Pet and selling products such as woven scarves, traditional musical instruments, and imported souvenirs from Thailand. The first game addressed a social dilemma, while the second was a coordination game. The selection of these game theory scenarios was to engage individually with respondents in more qualitative discussions in order to understand their motivations, beliefs, and constraints to anticipate their decision-making strategies effectively. In the social dilemma game, game theory was utilized to describe the situations themselves, such as the actions available to agents and their utilities, rather than analysing the actual behaviours of participants. Conversely, in the coordination game, we examined the actions performed by participants, particularly those who chose not to be involved in the project.

These game theory structures were tested for one week at the end of the peak tourist season. Participants were not rewarded based on their game payoffs. Although incentivizing participants could influence their decisions, the primary objective was to observe their comprehension of the relationship between the game and real-life situations observed locally.

The 11 souvenir sellers were all female and aged between 24 and 65, and (with the exception of one) were approached at their shops. Except for the two volunteers, none of them were informed about the research prior to participating. Given the prevalence of illiteracy among souvenir sellers in Pan Pet, traditional questionnaires were not feasible, so alternative methods were sought to visually represent the livelihoods and financial choices embedded in the selected situations without relying on text. Drawings and photographs depicting different currency denominations and amounts of money were used by the researchers to illustrate the potential outcomes resulting from the sellers' decisions (Figure 1).

Participants were informed that the game theory experiments mirrored two real-life situations: (1) the initial trade-off faced by sellers between remaining in the village and relocating their booth further up the main road; and (2) the coordination objectives of the project aimed at enhancing the destination's attractiveness. It was emphasized that both vendors and players were theoretically competing with each other, reflecting their daily activities. Non-constant sum games were chosen to align with the varied values of the rewards. To ensure realism, the chosen payoff amounts closely resembled those observed in the field, and were organized into a tabular format for clarity. Each souvenir seller was individually briefed on the rules of the social



Figure 1 Tools and methods used for the games

dilemma and coordination scenarios using drawings and photographs, after which they were asked to make a choice.

#### 4.1 The social dilemma game

We simplified the decision-making process to illustrate that souvenir sellers face a trade-off: they must choose between proximity to their family in the village (positive) and uncertainty about product sales (negative) or a commercial advantage by relocating further up the main road where tourists arrive (positive), with the drawback of sometimes having to stay there overnight (negative). It is logical to assume that sellers seeking to maximize revenue would opt to move up the main road, despite the associated relocation costs. The game theoretically exhibits a unique Pareto-dominated equilibrium in strictly dominated strategies. Moreover, if all sellers decide to move to the main road, there must be a unique Nash equilibrium.

##### 4.1.1 Scenario 1

Two sellers of similar souvenirs must decide whether to relocate from the village closer to the main road or stay put. Table 1 illustrates the resulting payoffs in this scenario. Local seller 1 earns a daily turnover of 10,000 Kyats if she remains in the village and 15,000 Kyats if she moves to the main road without informing seller 2. If both sellers relocate to the main road, both receive a daily payoff of 5000 Kyats, which is inferior to the cooperative solution (failure).

An important aspect conveyed to all participants in the research is that when a local souvenir seller decides to relocate, she must utilize her savings to construct a new booth and relocate there daily. There are no other rules or conditions involved. Additionally, participants were informed that they cannot predict the decisions of others until they are made. It is worth noting that, beyond this direct binary choice, in the actual scenario the decision of souvenir sellers not to move from the village may have been influenced by opportunities to engage in the inclusive tourism project.

Table 1 Coordination failure game

		Seller 2		
		Move	Do not move	
Seller 1	Move	5000	5000	0
	Do not move	0	15,000	10,000

## 4.2 The coordination game

The objective here was for local souvenir sellers to recognize that specialism and local know-how would yield greater individual and collective value than selling competing, very similar products. In essence, are coepetition strategies/relationships among souvenir sellers perceived as valuable options for the future? Theoretically, a coepetitive scenario would enhance the visitor experience, thereby increasing visitor numbers and spending (cf. Bengtsson and Kock, 1999; Brandenburger and Nalebuff, 1995; Suhartanto, 2017). When there are more than two players in the game, they may consider forming coalitions, cooperating in some manner (with each player aiming to maximize personal gain). Although the game was simplified to involve only two players for ease of understanding, the potential for forming coalitions by cooperating in certain ways (with each player always aiming to maximize personal gain) was emphasized. Once again, the current lack of specialization was referenced, along with the project's objectives to enhance visitor and villager satisfaction/wellbeing, notably through specialization in their respective areas of interest.

### 4.2.1 Scenario 2

Souvenir sellers were presented with a choice between two activities, one of which they had a comparative advantage in. The options were simplified to two creative tourism activities: preparing local food or selling traditional fabrics. Table 2 illustrates the payoff outcomes in this game theory scenario. Local souvenir seller 1 earns a higher daily turnover of 5000 Kyats if she keeps to her area of expertise as defined by the game (in this case food or fabrics), provided seller 2 does the same (that is, specializes in the other choice), resulting in an equal income gain of 5000 Kyats. Moreover, if both opt to continue a coepetitive strategy by not offering a service in which they have a comparative advantage, the payoff is lower (4000 Kyats) but still more than in the absence of cooperation. Ultimately, the absence of cooperation and the provision of similar goods/services by both souvenir sellers would result in a lower payoff compared to cooperative solutions.

In the ideal scenario, the self-interested actions of both parties should lead to an outcome that maximizes welfare for both. The iterated dominant strategy would involve seller 1 specializing in traditional fabrics/garments (scarves, shirts, and so on), where she has a comparative advantage, while seller 2 specializes in local food, where she has a comparative advantage. The game has two Nash equilibria that are Pareto ranked. Choosing the activity for which they have a comparative advantage is not an 'iteratively dominant strategy': if one player believes the other will choose a particular activity, their best response is to choose the other activity.

Table 2 Successful coordination game

		Seller 2			
		Fabrics		Local food	
Seller 1	Fabrics	3000	2000	5,000	5000
	Local food	4000	4000	2000	3000

Following the completion of the two scenarios, the research assistant engaged in individual discussions with all 11 souvenir sellers to explore their choices and delve into their current circumstances, which were also utilized in the analysis of the results.

## 5 RESULTS

The analysis presented here draws on both the outcomes of the games and the ensuing discussions they provoked. With 11 participants aged between 24 and 65, there is a sufficient pool of observations to derive qualitative insights from the study. Consequently, the findings can offer valuable insights for practitioners and development project managers seeking to grasp the dynamics of bounded rationality in remote environments like the one examined in this study.

First, all participating souvenir sellers expressed difficulty in envisioning themselves in a specific hypothetical scenario. In the social dilemma game, the majority of participants (ten out of 11) indicated a preference to ‘not move’. They explained that their personal experiences were more influential in their decision-making than hypothetical income prospects. The choice between staying in the village and relocating was generally driven by a variety of influences beyond purely economic considerations. For one of the respondents:

Staying at home makes life simpler; transportation is a hassle and staying home allows for easier management of my shop. I can balance caring for my children and household tasks effectively. Moving is not an option due to the lack of available land, and setting up a temporary shop is prohibitively expensive with the scarcity and costliness of materials like zinc, wood, and bamboo. (Daw, 46 years old)

Subsequent discussions following the games shed light on the significant role of risk aversion in the souvenir sellers’ decisions to remain in the village. Despite a clear motivation for financial gain in real life, the immediate investment required to build a new shop (if they chose to move) was a significant deterrent: ‘Wood is too expensive for me to consider building a shop. I prefer not to waste energy and petrol, so staying at home is a better choice’ (Mu, 25).

I’m worried that if I move, I might not be as lucky. Plus, I really don’t want to spend extra money on stuff like zinc for roofing and bamboo for construction. And where would I even go to set up shop? It’s not like I have another place lined up. Besides, I’m not keen on the idea of commuting back and forth every day, especially now that more tourists are coming to the village. (Daw, 60)

Real-life constraints, such as water scarcity and food shortages in the village, also weighed heavily on their decisions; and factors like age and household circumstances were perceived as additional barriers to a potential move:

It's quite inconvenient for me to keep shuttling back and forth, especially since I don't drive and would need my husband's help. He's actually encouraging me to sell only from home, so I can still balance my time between work and taking care of the house. (Daw, 46)

As I'm getting older, I really value saving time, which is why I prefer to stay where I am. It allows me to be there for my grandchildren and take care of them at home, which is something I cherish. (Daw, 65)

The introduction of new players, including those moving house, occurred in the newly established market outside the village. Interestingly, responses regarding barriers to accessing this new vending space were not solely economic or related to practical factors, but also indicated nepotism on the part of the local elder: 'The chief of [the] village only invites those he knows to the market' (Daw, 56). This underscores a set of hidden challenges and limitations not addressed in the game theory scenarios but present in the minds of the participating villagers. Thus, the use of game theory situations facilitated access to new insights on the decision-making processes of souvenir sellers: 'I'm not keen on paying a commission at the market, so I prefer to sell from home' (Daw, 24).

In the coordination game, the assumption is that it is in the best interest of the souvenir sellers to cooperate and sell different products or services based on their expertise or comparative advantage. However, in reality, market demand for these products/services may vary, and it might be more profitable for the sellers to offer a variety rather than specialize in one. Interestingly, only one out of five respondents identified as a food expert chose to sell food. The uncertainty associated with involvement in an activity that does not currently exist is the main reason for rejecting the hypothesis of offering food to visitors. In particular, contextual factors such as lack of water (hygiene), scarcity, and the risk of food wastage played an important role in the responses: 'Since meat and vegetables aren't available daily, I face the risk of ingredients spoiling if I can't sell them promptly' (Mary, 51); 'Obtaining fresh fruits and vegetables in Pan Pet is quite challenging, and the scarcity of clean water further complicates cooking' (Daw, 46).

In contrast, the vendors who were traditionally weavers preferred to continue selling fabrics/garments, emphasizing the importance of maintaining their cultural traditions: 'As a skilled cloth seller, I find it more beneficial to focus on selling scarves, a product I'm proficient in crafting. Additionally, I'm passionate about preserving our handicrafts culture and take pride in showcasing my skills through scarf making' (Daw, 60). This highlights the influence of non-economic socio-cultural factors on real-life decisions, underscoring the need for deep contextual understanding.

## 6 DISCUSSION

The game theory situations aimed to promote cooperation, yet they did not consistently lead to behavioural changes in this particular environment. This is illustrated by Mu, a 25-year-old participant, whose confidence in their weaving skills over selling food suggests that cooperative principles may not always yield immediate shifts in behaviour. Further examination of subjects' strategic behaviour within the context, coupled with comparisons to controlled tasks or real-world scenarios, could provide deeper insights. Removing the saliency of certain activities, such as weaving, might

reveal whether subjects would still fail to coordinate in scenario 2, clarifying whether observed behaviour stems from a lack of strategic coordination or deeper cultural reasons.

The content of the game theory situations stemmed from meticulous modelling of the environment and behaviours observed throughout the project. Despite the theoretical foundation in stakeholder theory (Freeman, 1984; Freeman and McVea, 2001), decisions in this context may not always be influenced by the actions of others. For instance, a retailer's choice might be a response to a given situation without consideration of potential future decisions by other stakeholders. This underscores the complexity of achieving equilibrium in contexts where local sensitivities and personal factors often take precedence. Therefore, integrating game theory with insights from behavioural disciplines, as suggested by Gintis, (2009) and Ross et al., (2024), becomes imperative.

The decisions of souvenir sellers in Pan Pet were influenced by diverse factors beyond economics, where prioritizing one aspect may mean sacrificing another (Damayanti et al., 2017; Ostrom, 2010). This applies equally to those who moved their shops to the main road or market due to loyalty and the influence of local leaders, within a context allegedly characterized by nepotism, as well as to those who chose not to move. Recognizing, valuing, and incorporating these non-economic factors into development projects, especially when encouraging cooperation, could mitigate social conflicts and alleviate pressure.

Cultural norms significantly shape decisions and behaviours in underdeveloped contexts (Frydman, 1994; Guiso et al., 2006; Morris et al., 2015). Decades of conflict, fear, secrecy, and distrust deeply ingrained in the social fabric of Pan Pet override economic rationality, emphasizing the importance of a deep understanding of the cultural context. Choices made by a programme or community may contradict the beliefs of others due to procedural rationality in decision-making as individuals consider factors beyond mere economic gains (Kahneman, 1991).

Kothari, (2005) discusses the professionalization of international development and its challenges in understanding diverse social realities, as observed in Kayah State. The dominance of certain epistemologies and expertise within international organizations can lead to interventions inconsistent with local beliefs and preferences. This tendency to prioritize Western perspectives or global norms over local practices marginalizes indigenous knowledge systems (Escobar, 1995; Smith, 2012), hindering a comprehensive understanding of cultural contexts.

Cornwall and Brock, (2005) and Telleria, (2021) argue against standardized approaches, instead emphasizing the need for tailored interventions that account for local beliefs and social structures. However, we contend that game theory experiments facilitate communication and community participation, offering valuable insights into decision-making processes within international organizations. While game theory alone cannot predict human behaviour accurately – particularly in contexts where decisions are not solely rational calculations – its integration with insights from behavioural economics, sociology, and psychology can provide a more nuanced understanding.

In underdeveloped contexts, where informal economies prevail, patterns of cooperation may differ from those in formal economies. The dominance of certain epistemologies and expertise within international organizations often intertwines with power dynamics (Foucault, 1980; Leach et al., 2005), marginalizing local knowledge holders and inhibiting their participation in building trust and credibility within communities – thereby limiting understanding of cultural contexts.

## 7 CONCLUSION

In conclusion, our study – conducted in Pan Pet, a rural area in Myanmar recovering from conflict – employed game-theoretic scenarios to explore how souvenir retailers perceive opportunities for cooperation and competition. The experiments, conducted in the field, generated descriptive results and contextual insights thanks to the replication of locally studied situations in game form.

Despite the theoretical suggestions of cooperation and competition benefits, our findings reveal a general inability among these retailers to effectively coordinate their actions. Through simulations using game theory models such as the social dilemma, we observed trade-offs between proximity to customers and distance from competitors, leading sellers into suboptimal equilibria. While some vendors have moved closer to the main road to become more competitive, others have chosen to remain in the village for family reasons or lack of means – but also to preserve traditions rather than engage in activities where they could theoretically make more money, reflecting the diversity of stakeholder viewpoints.

Additionally, our study underscores the potential disparity between the perceptions of researchers and those of the surveyed individuals. The researcher's perspective, often influenced by theoretical frameworks and academic lenses, may differ from the lived experiences and cultural understandings of the surveyed population. This disconnect highlights the importance of engaging with local communities and incorporating their perspectives into research and development initiatives.

It also points to the epistemological limitations of international organizations in understanding and taking account of diverse social realities. The predominance of certain epistemologies can lead to interventions that are incompatible with local beliefs, preventing a global understanding of cultural contexts. Furthermore, implementing development programmes in underdeveloped contexts poses significant challenges that go beyond the welfare objectives pursued by offices located in developed countries.

As such, the use of game theory scenarios is encouraged as part of the launch of development projects in contexts such as research. With souvenir sellers, this has provided valuable insights into decision-making processes, revealing nuanced motivations that go beyond expected revenues or competitor behaviour. Non-monetary rewards and cultural factors emerged as significant influences, underlining the need for tailored interventions that take account of local realities.

In conclusion, our study highlights the extent to which the importance of cultural nuances and the diverse perspectives of stakeholders can be overlooked in development interventions if research into the socio-cultural fabric is not undertaken beforehand. The use of game theory tools is a possible but insufficient solution. Moving forward, a holistic approach that integrates insights from various disciplines and engages local communities in decision-making processes is essential for effective and sustainable development initiatives, recognizing the epistemological limitations of international organizations, and addressing implementation challenges beyond mere wellbeing objectives.

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