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Smart Tourism Technologies and Revisit Intention in Vietnam's Agritourism Destinations: An Expectation–Confirmation Model with Novelty and Worry

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Abstract: Smart tourism technology (STTs) is increasingly being used by agritourism locations in Vietnam to help travellers prior to, during, and following their travels. However, there is little empirical data on how digital technologies function that affect visitors' intentions to return, especially in rural and agritourism. Based on the expectation-confirmation paradigm and smart tourism studies, this study looks at how STTs, novelty-seeking behaviour, and travel anxiety affect visitors' satisfaction and, consequently, their propensity to return to Vietnam's agritourism sites. A structured survey of 230 agritourism visitors was used to gather primary data, which was then analysed using Partial least squares structural equation modeling (PLS-SEM) with bootstrapping and an Importance–performance map analysis (IPMA) to determine practical improvement goals. The results show that the main factor influencing the propensity to return is visitor pleasure. STTs enhance pleasure through immersion and reassurance, while novelty-seeking boosts experiential value. Notably, travel anxiety is positively correlated with satisfaction, suggesting that in technology-mediated contexts, moderate levels of apprehension may enhance information engagement and appreciation when expectations are adequately met. IPMA emphasises that satisfaction and novelty-related experiences are crucial factors in enhancing revisit intentions, while also underscoring the need to ensure dependable access to information and prompt digital assistance. By establishing STTs as pivotal drivers within the expectation-confirmation framework, this study elucidates how digital systems shape tourists' cognitive and emotional paths toward loyalty, offering destination managers and platform providers strategic blueprints for enhancing revisit intentions through technology-driven experience design and service quality.

Keywords: Agritourism; Expectation-Confirmation Model; Revisit Intention; PLS-SEM; Smart Tourism Technologies; Tourist Satisfaction

1. Introduction

Agritourism has evolved into experiential tourism, in which travellers seek intimate encounters with agricultural life, regional food systems, pastoral landscapes, and community-oriented cultural traditions. First-time travellers are drawn in by the ongoing growth of agritourism. Agritourism destinations encounter structural challenges that could negatively impact visitors' propensity to return. Agritourism generally has a dispersed range of service providers, uneven service quality, limited interpretive capacities, and limited infrastructure and visitor manage-

ment, in contrast to metropolitan or mass tourism contexts. Rural experiences are available to visitors. The destination's ability to deliver on its promises regarding the calibre of farm experiences, cleanliness, accessibility, information availability, safety, and convenience will determine their post-visit choices. Agritourism is a particularly suitable context for analysing revisit intention through post-consumption assessment processes.

STTs such as mobile travel applications, digital maps, Quick response (QR)-based interpretation, electronic payment systems, social media service communication, Artificial intelligence (AI)-driven recommendations, and data-informed visitor support are gradually implemented, visitor experiences improve and destination competitiveness increases. STTs can improve service accessibility (e.g., reservations, navigation, and real-time support), reduce information asymmetry (e.g., available activities and timetables), and promote interpretation (e.g., narratives on agricultural processes, sustainability, and local heritage) in agritourism. STTs can transform agritourism into a digitally enabled experiential system where travellers interact with information technology while travelling, rather than a collection of discrete service engagements. This development of intelligent and sustainable destinations, where Information and Communication Technology (ICT), AI, and Internet of Things (IoT) systems are used to provide real-time data collection, adaptive coordination, and improved decision-making responsiveness in addition to facilitating service delivery [1,2]. Smart tourism is increasingly aligned with broader destination management goals, such as visitor-centric experience design, sustainability, operational efficiency, and accessibility [3]. The current research often views digital technology as a contextual facilitator of tourism services rather than as a dynamic agent that affects tourists' cognitive and emotional processes, despite the widespread use of STTs. From a digital technology perspective, this is a conceptual limitation. In addition to making transactions easier, digital interfaces, information systems, and intelligent service platforms also influence travellers' expectations, perceptions of novelty, management of uncertainty, and evaluations of their experiences. Therefore, understanding revisit intention in technology-enhanced agritourism requires moving beyond STTs' service-quality perspective and adopting a mechanism-focused approach to clarify how digital technologies affect post-consumption assessment processes.

In the post-pandemic period, Vietnam's tourism industry has seen a strong comeback. Vietnam had between 17.5 and 17.6 million foreign tourists and 110 million local travellers in 2024, with a projected total tourism revenue of VND 840 trillion [4]. These findings highlight the growing strategic importance of building steady demand through repeat business, particularly for locations dependent on dispersed rural supply networks and small businesses. Both the market and policy have embraced rural and agricultural tourism [5]. Vietnam has generated more than 200 One Commune One Product (OCOP)-certified products related to community tourism services and tourist destinations rated three stars or above, in addition to more than 600 types of agricultural and rural tourism. The rapid spread of digital technology in Vietnam highlights the importance of STT. The country's internet penetration rate was 78.8% in 2025, with 79.8 million users [6]. In particular, at geographically remote agritourism destinations where physical infrastructure may not be sufficient to provide continuous service, this digital baseline creates favourable conditions for technology-enabled visitor support.

Despite the growing interest in rural regions and smart tourism, the present study has gaps. Agritourism is under-represented because research on STTs and revisit intentions typically focuses on urban smart destinations, particularly in Southeast Asian contexts, where rural tourism ecosystems and digital infrastructure develop unevenly. Furthermore, prior research often examines novelty, anxiety, and perceived risk as distinct psychological components without considering how digital technology influences and mediates these perceptions.

To clarify revisit intentions on Vietnamese agritourism sites, this study develops and assesses a model. The study clarifies how digital systems affect travellers' emotional reactions, experience evaluations, and cognitive clarity by logically repositioning STTs as essential processes in the expectation–confirmation process [7]. The study provides empirical data from Vietnam, a growing agritourism business, where context-specific questions about experience design are prompted by the interplay between rural authenticity and technology advancement. The study offers destination managers and agritourism operators practical advice on using STTs to increase confirmation rates, enhance the destination's reputation, allay visitor fears, and ultimately promote return visits.

The subsequent sections of this study are organised as follows. Sections 2 and 3 examine the pertinent research background and formulate the hypotheses. Section 4 delineates the research methodologies, encompassing measurement development, sampling techniques, and data analysis protocols. Section 5 presents the findings and analysis. Section 6 delineates the findings, underscores the theoretical and practical contributors, and concludes with limitations and avenues for future research.

2. Research Background

2.1. Travel Satisfaction and Smart Tourism Technologies

STT denotes technology-enabled resources and services that are interlinked, coordinated, and collaboratively utilised to assist travellers throughout their journey [8]. In the context of agritourism, STT may encompass, but is not restricted to, destination websites, official social media platforms, online travel agency (OTA) listings, mobile applications, QR-based interpretive systems at farms and craft villages, digital maps and navigation, electronic payment systems, chat-based customer service, and various forms of intelligent infrastructure that enhance information accessibility and service provision. Conceptually, STT aggregates and leverages data and content derived from physical infrastructure, social interactions, organisations, and user-generated input to enhance tourists' decision-making and overall experience [7–9].

In alignment with previous smart tourism research, STT can be comprehended through functional features that influence perceived usability and utility in information retrieval, transactions, communication, and content creation [10,11]. Informativeness reflects the accuracy, relevance, and timeliness of information provided. Accessibility refers to the ease with which tourists can utilise and engage with digital services. Interactivity denotes the degree of reciprocal communication and system responsiveness.

Personalisation denotes the tailoring of content and services to individual needs and contexts, while security relates to privacy and transaction safety. From a digital technology perspective, these attributes function as experiential mechanisms rather than static service features. Informativeness and accessibility primarily shape tourists' cognitive clarity and expectation calibration, reducing ambiguity during planning and on-site decision-making [12]. Interactivity and personalisation facilitate emotional engagement, perceived control, and experiential immersion by enabling responsive and context-aware interactions. Security underpins digital trust, which is essential for sustained engagement with technology-mediated services. Collectively, these mechanisms influence how tourists interpret perceived performance relative to their expectations, thereby activating the confirmation process central to Expectation–Confirmation Theory (ECT).

Travel satisfaction is typically defined as a tourist's overall evaluative judgment of whether a trip and its components provide a reasonable level of fulfilment [12]. Satisfaction is shaped by the perceived gap between expected and actual performance of the travel experience, and both cognitive evaluations (expectations and performance) and emotional reactions can jointly contribute to satisfaction formation [13]. Extending to agritourism, travel satisfaction can be understood as tourists' holistic appraisal of the extent to which farm-based activities, rural hospitality, accessibility, informational support, and the overall destination encounter meet (or exceed) what tourists expected before the trip.

Significantly, STT can influence travel satisfaction not only through the on-site experience but also through pre-trip planning and trip-related transactions. In agritourism, tourists often rely on digital touchpoints to evaluate destination credibility, compare experiences, assess availability, make reservations, and coordinate transportation in rural settings. Before the trip, these exchanges produce technology-mediated micro-experiences that can influence assessments of enjoyment. Travellers are more likely to perceive better performance and less uncertainty when STT facilitates easy planning and trustworthy transactions, thereby increasing their overall happiness with the trip. Conversely, when information is incomplete, booking processes are confusing, or digital services are unreliable, tourists may experience frustration, lowering satisfaction even if the on-site experience is otherwise positive. Therefore, understanding STT as an experiential enabler across phases of travel provides a strong foundation for modelling satisfaction and subsequent behavioural intentions in agritourism destinations.

2.2. Tourist Worries

Tourism consumption entails leaving one's habitual habitat and engaging in novel activities in a geographically distinct locale. This engenders ambiguity, especially during the planning phase, and may incite concerns among tourists. Tourist worry is characterised as an individual's effort to engage in cognitive problem-solving about travel-related concerns when consequences are viewed as unknown and potentially detrimental [14,15]. Worry is conceptually distinct from perceived risk: risk denotes cognitive evaluations of the probability and seriousness of negative events, while worry is often characterised as an emotionally intense, somewhat uncontrollable sequence of thoughts stemming from uncertainty about unfavourable future outcomes [16,17].

In agritourism destinations, concerns may arise from several issues [18]. Initially, rural settings may exacerbate issues related to accessibility and service preparedness (e.g., transportation, location transparency, operational hours, and activity availability). Secondly, tourists may express apprehensions about hygiene and food safety, especially when experiences involve local cuisine and on-farm dining. Third, ambiguities around booking precision, refund protocols, and interactions with several small suppliers can instigate apprehension during the pre-trip and transaction stages. Fourth, problems may stem from the service delivery channel itself, including perceived vulnerabilities in online payment, privacy issues, or technical malfunctions during booking and confirmation. These concerns might collectively diminish enjoyment, interrupt immersion, and skew post-trip assessments towards negative evaluations, thereby reducing travel happiness.

Tourists' concerns suggest that people use passive, active, and interactive information-seeking techniques to reduce uncertainty and improve predictability [18]. Travellers may broaden their information searches (e.g., reviews, videos, community posts), consult external sources (e.g., OTAs, influencers), or interact directly with providers (e.g., messaging, calls) to confirm details when they are unclear about agritourism options. Anxiety may be transformed from a simple negative emotional state into a stimulant for improved interaction with digital information and services through the use of STT features, including informativeness, interactivity, and customisation. Visitor concern as a crucial component for understanding how satisfaction develops in an agritourism destination.

2.3. Novelty Seeking in Travel

The quest for experiences that diverge from quotidian existence is frequently linked to curiosity, discovery, and enjoyment [19]. The apparent distinction between present experiences and past routines is commonly used to describe novelty [20]. In a tourist motivation study, novelty seeking is defined as a multidimensional impetus encompassing deviation from routine, escapism, excitement, adventure, surprise, and reduction of boredom [21]. In agritourism, the pursuit of novelty is especially pronounced, as tourists are drawn to experiential farm activities, local craftsmanship and culinary offerings, rural living, and relationships with hosts that differ markedly from urban routines.

According to earlier research, visitors report greater satisfaction when novelty expectations are fulfilled or exceeded, due to increased emotional arousal and memorability [22]. Novelty in digital tourism is increasingly mediated by technology. Digital platforms, visual storytelling, algorithmic recommendations, and interactive guidance shape how tourists discover, interpret, and engage with unfamiliar experiences. Rather than merely supporting novelty consumption, STTs actively structure the novelty experience by reducing uncertainty and enabling participation in unfamiliar rural activities. Novelty-seeking tendencies are often linked to exploratory information behaviours; tourists motivated by novelty may seek richer, more diverse content through digital channels to discover unique activities, off-the-beaten-path experiences, and time-sensitive rural events. STT can enhance the process of visualising and planning novel experiences through reviews, short-form videos, maps, and real-time recommendations. On-site smart support (e.g., QR-based interpretation, interactive guidance, or personalised itineraries) can deepen the novelty experience by enabling tourists to understand the meanings of rural practices better and to engage more confidently in unfamiliar activities. As a result, novelty seeking operates not only as a motivational driver but also as a mechanism through which technology-enabled experiences translate into satisfaction and revisit intention in agritourism contexts.

3. Research Model and Hypothesis

3.1. Expectation–Confirmation Theory (ECT) in Digital Tourism Contexts

Expectation–Confirmation Theory (ECT) is one of the most influential theoretical frameworks for explaining post-consumption evaluation and, in particular, the formation of customer satisfaction [23]. ECT conceptualizes satisfaction as an outcome of a cognitive comparison process in which individuals evaluate experienced performance against a set of pre-consumption expectations. From this perspective, satisfaction is not merely an emotional response to consumption; it is a judgment about the extent to which the experience meets, exceeds, or fails to meet consumers' expectations.

In digitally mediated tourism environments, the ECT process is increasingly structured by information systems. Expectations are consumers' beliefs about the likely performance or quality of a product or service before

consumption. Marketing communications, prior personal experiences, social influence (such as word-of-mouth), and information cues from digital touchpoints can shape these expectations. Perceived performance captures consumers' assessments of a product's or service's actual performance after use. Perceived performance is inherently subjective and reflects the consumer's interpretation of what was delivered rather than an objective measure of service quality. Accordingly, STTs function as a structural layer within the ECT mechanism, influencing the formation of expectations, the interpretation of performance, and confirmation judgments. Confirmation/disconfirmation represents the evaluative comparison between expectations and perceived performance. Confirmation happens when perceived performance meets expectations. Positive disconfirmation occurs when perceived performance exceeds expectations, whereas negative disconfirmation occurs when perceived performance falls below expectations. When the experience exceeds expectations (positive disconfirmation), individuals are likely to report higher satisfaction. Conversely, when experiences underperform relative to expectations (negative disconfirmation), dissatisfaction becomes more likely.

ECT is particularly pertinent to tourism contexts because of the experience and intangible nature of tourism consumption, which is co-created through tourists' active engagement. Tourism experiences are created and consumed simultaneously, and they are evaluated at multiple phases and interactions, unlike many material purchases. Before arriving, travellers set expectations by using destination websites, OTAs, social media, peer reviews, and advertising efforts. They reassess these expectations through in-the-moment interactions while travelling. As a result, a single service contact is not the only aspect of perceived performance in tourism.

The ECT mechanism may become more prominent in rural tourism and agritourism destinations for two reasons. Tourists' expectations may be greatly impacted by visuals, making them vulnerable to misalignment. Rural places are often associated with experiential qualities, genuineness, novelty, hands-on learning, and host-guest interaction. Engaging in locally integrated activities (such as farm tours, craft workshops, and community services) is often included in agritourism, where quality is evaluated based on interaction quality, information clarity, and service responsiveness throughout the visitor experience. Therefore, the degree to which tourists' actual experiences match the expectations formed by digital information and pre-trip narratives has a major impact on their level of pleasure.

3.2. Conceptual Framework and Hypothesis Development

This study develops a conceptual model explaining how technology-enabled experiences affect visitor satisfaction and, consequently, revisit intention in Vietnam's agritourism destinations. It is based on ECT and prior research on smart tourism destinations and technology-enhanced tourist experiences [24]. According to the model, smart tourism technology is a crucial component that affects travellers' emotional responses, experiential evaluations, and cognitive clarity. According to ECT, tourists establish expectations before travel and assess their experiences through multiple touchpoints, including information search, booking, navigation, on-site engagement, and post-visit interactions. The extent to which perceived performance confirms expectations becomes a primary mechanism through which satisfaction emerges and influences loyalty-related behaviours. Accordingly, the proposed model includes the following constructs: STT (conceptualised through key functional attributes), Novelty, Worry, Destination Image, Tourist Satisfaction, and Revisit Intention. Novelty seeking and tourist worry are incorporated as technology-sensitive experiential states that influence satisfaction within the digitalised ECT process. **Figure 1** summarises the proposed conceptual framework and hypotheses.

3.2.1. Smart Tourism Technologies and Tourist Satisfaction

Smart tourism destinations integrate digital technologies into destination resources and services to enhance tourists' experience and value creation [3]. STTs enhance perceived performance throughout the tourist journey by enabling access to information, interaction, personalisation, and trust. In such settings, technologies such as ubiquitous connectivity (e.g., Wi-Fi), mobile applications, social media platforms, IoT-enabled services, AR/VR features, and integrated payment systems enable tourists to access timely information, make better decisions, and experience smoother journeys [8,25,26]. Through these mechanisms, STTs increase the likelihood of positive expectation confirmation and higher satisfaction. From an ECT perspective, these technologies enhance perceived performance throughout the tourist journey, thereby increasing the likelihood of positive confirmation and greater satisfaction. Empirically, prior studies suggest that favorable perceptions of technology-enabled destination services are associated with enhanced tourist satisfaction, as technologies improve convenience, reduce friction, and

enrich engagement during travel [27–29]. Therefore, the following hypothesis is proposed:

H1. *STT has a positive effect on Travel Satisfaction.*

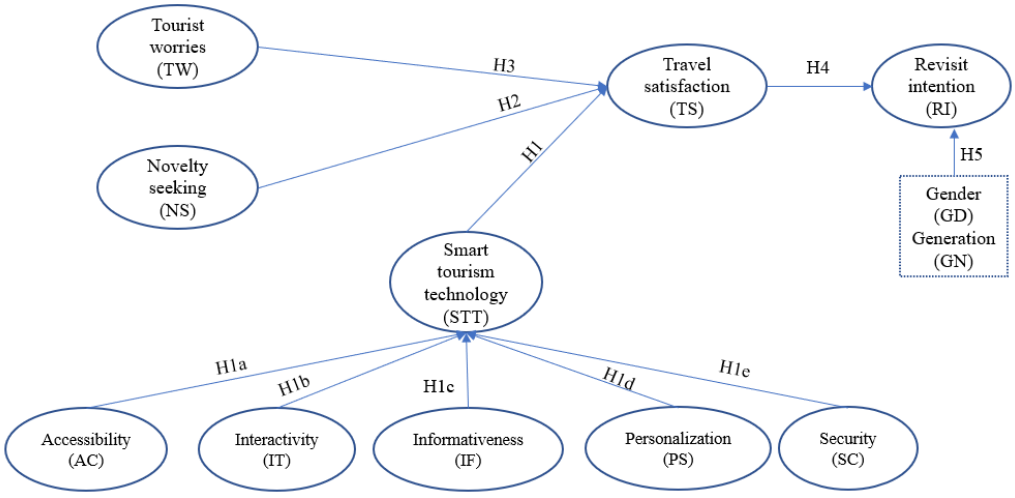

Figure 1. Research model.

Source: The authors' recommendations are based on a literature review.

STT is characterised by five fundamental attributes: accessibility, interactivity, informativeness, personalisation, and security [10,13,30]. Accessibility denotes the degree to which STT services are available and usable with ease [31,32]. Improved accessibility increases visitors' perceived performance and happiness by lowering effort and barriers to information retrieval and service utilisation [33, 34]. The ability of technologies to facilitate responsive engagement and instantaneous, bidirectional communication is known as interactivity. Tourists' positive evaluations of the experience can be strengthened by interactive services that improve their sense of autonomy and decision-making quality [32]. In the information-intensive tourism industry, informativeness, which includes the quality, reliability, and usefulness of information shared by technological touchpoints, is crucial [33]. Good knowledge reduces ambiguity and cognitive overload, thereby promoting contentment. In order to minimise search time and improve relevance and satisfaction, personalisation refers to the degree to which services are tailored to individual needs, tastes, and circumstances [10,35]. Security, including privacy and data protection, is crucial for the adoption and long-term use of smart services; perceived insecurity can become a major barrier to use and enjoyment [11,36,37]. The following theories are put forth:

H1a. *Tourists' perceptions of STT are positively impacted by STT accessibility.*

H1b. *Tourists' perceptions of their STT experience are positively impacted by STT interaction.*

H1c. *Tourists' perceptions of their STT experience are positively impacted by STT's informativeness.*

H1d. *Tourists' perceptions of their STT experience are positively impacted by STT personalisation.*

H1e. *Visitors' perceptions of STT are positively impacted by STT security.*

3.2.2. Novelty Seeking and Travel Satisfaction

Novelty is the difference between current perceptions and prior experiences [37]. Novelty seeking has been emphasised as a key driver of travel decisions and experiential evaluation [22]. Travellers are more likely to view an experience as meaningful and satisfying when it provides excitement, surprise, discovery, and a break from routine [38]. Increased emotional arousal, improved memorability, and greater personal engagement are common outcomes of novel experiences and have a beneficial impact on post-trip evaluations.

Novelty in agritourism often arises from direct involvement with host people, interactions with the terrain, agricultural operations, and regional cultural traditions. These experiences have significant novelty potential because

they differ significantly from tourists' everyday metropolitan routines. When the journey's experiential uniqueness matches or surpasses travellers' pre-trip expectations created by digital narratives, visuals, and informational signals, novelty increases happiness from an expectation-confirmation perspective. Tourists are more likely to experience positive disconfirmation when such alignment occurs, thereby raising their satisfaction [39]. Instead of being experienced in isolation, novelty is increasingly enabled by digital systems in technology-driven tourism environments. While on-site technologies (such as QR-based interpretation, interactive guidance, or personalised itineraries) impact the understanding and engagement with novelty during the trip, digital platforms, social media content, short-form videos, online reviews, and interactive maps influence tourists' expectations of novelty prior to travel. STTs can convert novelty from a source of uncertainty into a structured, comprehensible experience, enabling tourists to engage in unusual agritourism activities with greater confidence and pleasure. Therefore, the following hypothesis is proposed:

H2. *Novelty seeking has a positive effect on Travel Satisfaction.*

3.2.3. Tourist Worries and Travel Satisfaction

Anxiety denotes a detrimental emotional condition linked to uncertainty regarding possible undesirable results and may arise during travel due to contextual factors [18]. In travel, concerns may include safety, unfamiliar cuisine, cultural obstacles, criminal activity, or general uncertainty about the area [14,40,41]. Worry is conceptually separate from perceived risk; although risk pertains to evaluations of probability and severity, worry embodies emotionally charged, often uncontrollable mental processes in the face of uncertainty. Heightened anxiety can diminish pleasure, impede experiential engagement, and impair visitors' favourable assessments of the journey [42,43]. In agritourism locales, such impacts may be exacerbated by fragmented service delivery, inadequate signage, inconsistent service quality, and ambiguity over booking precision or on-site arrangements. Consequently, anxiety has always been perceived as an adverse element that diminishes enjoyment and commitment. In digitally mediated tourism contexts, the interplay between anxiety and satisfaction may be more intricate. STTs equip travellers with resources to obtain information, confirm details, interact with providers, and oversee trip-related plans in real time. Informativeness, interactivity, and accessibility can diminish ambiguity and augment perceived control, whilst safe digital systems bolster trust. When effective STTs are put in place, travellers may actively seek out information and engage with digital support, feeling relieved when their expectations are ultimately met. In these situations, worry does not necessarily lower satisfaction; rather, after doubts are cleared up, it may coexist with or even increase positive appraisals. However, anxiety is likely to persist and negatively impact enjoyment when digital systems lack clarity or response. This study postulates a negative relationship between anxiety and satisfaction:

H3. *Tourist Worries have a negative effect on Travel Satisfaction.*

3.2.4. Travel Satisfaction and Revisit Intention

A fundamental post-consumption assessment of the vacation experience is tourist satisfaction [44] Satisfaction has been regularly associated with loyalty-related outcomes in destination environments, including recommendation behaviours and intention to return [45,46]. According to ECT, satisfaction summarises whether experiences fulfilled or surpassed expectations, making it a proximal antecedent of behavioural intention [47,48] This progressively accounts for visitors' experiences with digital systems, including online communication channels, booking interfaces, navigation aids, and information platforms, in technology-enabled tourism contexts. As a result, satisfaction measures both the perceived efficacy of technology-mediated assistance throughout the trip and the quality of the on-site experience. Even in situations like agritourism, which are marked by uncertainty, satisfied tourists are more likely to view the destination as dependable, fulfilling, and worth returning to. As a result, the following hypothesis is proposed:

H4. *Travel Satisfaction has a positive effect on Revisit Intention.*

3.2.5. Gender, Generation, and Intention to Revisit

Gender is a factor impacting differences in travel preferences, perceived constraints, and decision-making processes. Particularly in rural or agritourism destinations with variable service conditions and restricted accessibility,

gender-based differences in information processing, sensitivity to uncertainty, and a focus on safety and comfort may result in unique patterns of loyalty formation. Different patterns of loyalty formation and return intentions may result from differences in service quality and accessibility in agritourism destinations. Gender is therefore seen as a demographic predictor of intention to revisit. Similarly, generation reflects variations in life stage, total travel experience, and technological preparedness, all of which may influence how travellers assess locations and decide whether to return. When organising and sharing experiences, younger groups are more likely to rely on digital touchpoints, while older groups might give greater weight to factors like dependability, ease of return, and difficulty. Because farm-based and learning-oriented activities, physical environmental conditions, and the role of digital mediation are valued differently across age groups, generational disparities may be especially noticeable in agritourism situations. This study expects that revisit intention is influenced by generational traits. Thus, the following hypotheses are proposed:

H5a. *Gender (GD) effects on Revisit Intention (RI).*

H5b. *Generation (GN) effects on Revisit Intention (RI).*

In conclusion, the suggested theories explain how technology-enabled experiences and important travel-related perceptions, novelty, anxiety, and satisfaction, interact within a digitalised expectation–confirmation framework to influence the intention to return to agritourism destinations.

4. Research Methods

4.1. Data Collection

An online survey (Google Forms) for travellers who had previously visited Vietnam's agritourism or rural tourism destinations was used to collect data. A screening approach was embedded at the beginning of the questionnaire to ensure that respondents matched the study context (i.e., having visited rural/agritourism destinations in the targeted regions). The questionnaire asked respondents to indicate the province(s) in which they had visited rural tourism destinations (e.g., provinces listed on the form before 1 July 2025 included Dien Bien, Son La, Hau Giang, and An Giang in Vietnam). The study gathered 230 legitimate responses; the final sample size was judged sufficient for model estimation using variance-based structural equation modelling. The data included 98 men (42.6%), 103 women (44.8%), and 29 people (12.6%) who chose not to disclose their gender. In terms of cohort membership, Generation Y accounted for the largest share (36.5%), followed by Generation Z (33.0%), Generation X (9.1%), and other (11.3%). The majority of respondents planned their trips well in advance: 40.9% reported planning more than 30 days in advance, followed by 25.2% who planned 15–30 days ahead. Two to three years of STT use was the most common amount of technological experience (39.1%). Regarding how frequently they travelled, respondents typically made three to four leisure excursions per year (40.0%), followed by one to two trips (31.7%) and five or more trips (28.3%). Gender and generation were subsequently incorporated into the structural model as exogenous variables to examine their direct effects on revisit intention.

4.2. Constructs and Measurement

All latent constructs were measured using multi-item scales adapted from established tourism and information systems literature and refined for the agritourism context. Unless otherwise stated, items were rated on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). The questionnaire was organised into (i) STT experience, (ii) novelty seeking, (iii) tourist worries, (iv) travel satisfaction, (v) revisit intention, and (vi) demographics and travel background.

All measurement scales were designed to capture tourists' perceived technology-mediated experiences rather than objective system characteristics, consistent with the study's conceptualisation of STTs as cognitive–emotional mechanisms shaping post-consumption evaluation. Consistent with widely used conceptualisations in smart tourism research, STT was a second-order construct reflecting tourists' evaluation of technology-enabled support across the travel journey. Following the attribute-based perspective, STT was captured by five first-order dimensions: Accessibility (ease of access and usability of technology services), Interactivity (responsiveness and two-way communication enabled by technologies), Informativeness (quality, relevance, and usefulness of information provided via digital touchpoints), Personalization (degree of tailoring to individual needs and preferences), and Security (perceived pri-

vacy, data protection, and transaction safety when using STT).

Novelty seeking was measured as tourists' perceived motivation to experience something different from routine life and to pursue discovery and surprise during travel. Items were adapted from prior novelty seeking scales and contextualized to agritourism activities (e.g., farm-based participation, rural lifestyle encounters). Tourist worries were conceptualized as a state-based negative emotional response associated with uncertainty and potential negative outcomes during trip planning and travel. Measurement items captured concerns relevant to agritourism settings (e.g., uncertainty about arrangements, service reliability, and the ability to complete the trip as planned). Travel satisfaction was measured as an overall evaluative judgment of the agritourism experience. In accordance with the ECT, satisfaction measures were phrased to assess the degree to which the trip experience met or surpassed expectations, thereby embodying the post-consumption evaluative process fundamental to ECT. The intention to revisit was assessed using standard destination-loyalty metrics that gauged respondents' likelihood of returning to the agritourism sites they visited and their intention to revisit under comparable circumstances in the future. Gender and generational cohort were documented as categorical variables in the survey's demographic section. For analysis, they were included as exogenous predictors of revisit intention (RI). The scales for the variables are described in detail in **Table 1**.

Table 1. Measurement Items.

Variable	Items	Sources
Smart Tourism Technology Experience (STT)	STT1. I had great/memorable moments when using smart tech apps during my rural trip. STT2. Smart tech apps made my rural trip enjoyable and complete. STT3. Smart tech apps benefited my rural trip (e.g., time savings, convenience). STT4. My experience using smart technology applications was meaningful and memorable.	Gretzel et al. [8], Sigala [25], Alsharif et al. [26], Buhalis [27]
Accessibility (AC)	AC1. I could use smart tech apps anytime, anywhere, at a rural destination. AC2. Smart tech apps were always available when I needed them at the rural destination. AC3. Smartphone apps were readily accessible at the rural destination. AC4. I could easily find suitable smart tech apps for my rural trip.	Huang et al. [29], Yoo et al. [35], Azis et al. [28], Yap et al. [11], No and Kim [47], Teng et al. [48], Um and Chung [49],Yuksel et al. [32], Nadee et al. [33]
Interactivity (IT)	IT1. Smart tech apps provided Q&A, reviews, and feedback from other users. IT2. Smart tech apps responded quickly to users' requests. IT3. I could easily share local information using mobile apps.	
Informativeness (IF)	IF1. Smartphone apps provided useful information about the rural destination. IF2. Information from smart tech apps strongly supported my visit. IF3. Using information from smart tech apps helped me complete the trip smoothly. IF4. Information from smart tech apps reduced my travel worries.	
Personalization (PS)	PS1. Smart tech apps provided tailored/personalized information for my needs. PS2. I could interact with smart tech apps to get personalized information. PS3. Personalized information from smart tech apps matched my needs well. PS4. Travel websites/apps provided clear links/steps that were easy to follow.	
Security (SC)	SC1. When using smart tech, I am not worried about excessive collection of my personal data. SC2. When using smart tech, I believe my privacy is protected. SC3. When using smart tech, I am not worried about the security of sensitive information (e.g., payment). SC4. Smart tech provides sufficient security measures to protect my personal information.	
Novelty Seeking (NS)	NS1. I want to experience new cultural things at the rural destination. NS2. I want to experience new local food/cuisine at the rural destination. NS3. I want to experience new people from different ethnic groups. NS4. I want to see and try new experiences. NS5. I am keen to learn more about the place, its people, and its things. NS6. I want to experience local handicrafts.	Toyama and Yamada [22], Mitas and Bastiaansen [37], Tjokrosaputro et al. [38]
Tourist Worries (TW)	TW1. I worry about trip planning because it involves a high level of uncertainty. TW2. During the trip, I often contemplate what could go wrong. TW3. I worry that bookings/services may not match what I expected. TW4. I worry about transport delays during the trip. TW5. I worry about getting lost or losing contact with companions.	Larsen et al. [14], Goo et al. [18], Muñoz-Navarro et al. [41], Le et al. [42]
Travel Satisfaction (TS)	TS1. I truly enjoyed the trip. TS2. I am delighted with my choice of this rural destination. TS3. I prefer this rural destination to others. TS4. I have positive feelings about the rural destination. TS5. The rural destination experience matched what I needed/expected. TS6. This rural destination was a delightful trip.	Hari and Mohan [44], Nguyen and Bui [45], Baghirov et al. [46]
Revisit Intention (RI)	RI1. I intend to revisit the selected rural destination. RI2. I will recommend the selected rural destination to family and friends. RI3. I will say positive things about the selected rural destination to others. RI4. I want to visit rural destinations more frequently. RI5. I plan to revisit the rural destination.	Torabi et al. [13], Baghirov et al. [46]

Source: The authors adapted from prior studies.

The proposed model was tested using PLS-SEM, which is appropriate for prediction-oriented research and for models involving hierarchical component constructs. The analysis proceeded in two stages:

(i) Measurement model assessment: Reflective constructs: internal consistency (Cronbach's alpha, composite reliability), convergent validity (Average Variance Extracted—AVE), and discriminant validity (Heterotrait-Monotrait Ratio—HTMT). Formative higher-order STT: multicollinearity diagnostics (Variance Inflation Factor—VIF) and significance/relevance of formative weights.

(ii) Structural model evaluation: Path coefficients and their significance were analysed using bootstrapping (e.g., 5,000 resamples). The model's explanatory power and predictive relevance were assessed using R^2, effect sizes (f^2), and Q^2. An Importance–Performance Map Analysis (IPMA) was performed to identify the constructs with the greatest total influence on revisit intention, while simultaneously evaluating their performance ratings, thereby emphasising key areas for managerial improvement.

5. Results and Analysis

The research utilised PLS-SEM via SmartPLS [49,50] to assess the measurement and structural models. PLS-SEM was deemed suitable due to its predictive orientation, emphasis on elucidating revisit intention within a developing agritourism framework, and incorporation of a hierarchical STT construct, operationalised through several first-order technology features. Moreover, PLS-SEM is appropriate for models with moderate sample sizes and does not necessitate assumptions of multivariate normality [51].

5.1. Measurement Model

An initial evaluation of indicator reliability revealed that TS6 (0.699) and TW1 (0.685) exhibited outer loadings beneath the acceptable level of 0.70, necessitating their removal to enhance measurement parsimony and assure consistent indicator reliability. All residual indicators showed acceptable loadings after purification, ranging from 0.735 to 0.925 (**Table 2**), confirming their unidimensionality and dependability. Thus, TS6's removal did not compromise content validity.

Table 2. AVE, CR, Cronbach's alpha, and outer loadings.

Factor		Outer Loading	Cronbachs Alpha	Composite Reliability	AVE
1. Accessibility (AC)	AC1 AC2 AC3 AC4	0.894 0.896 0.862 0.874	0.905	0.933	0.777
2. Interactivity (IT)	IT1 IT2 IT3	0.877 0.890 0.913	0.874	0.923	0.799
3. Informativeness (IF)	IF1 IF2 IF3 IF4	0.843 0.881 0.897 0.828	0.885	0.921	0.744
4. Personalization (PS)	PS1 PS2 PS3 PS4	0.882 0.835 0.894 0.824	0.882	0.918	0.738
5. Security (SC)	SC1 SC2 SC3 SC4	0.904 0.893 0.893 0.901	0.921	0.943	0.806
6. Smart Tourism Technology (STT)	STT1 STT2 STT3 STT4	0.850 0.846 0.735 0.804	0.824	0.884	0.656
7. Novelty Seeking (NS)	NS1 NS2 NS3 NS4 NS5 NS6	0.816 0.769 0.867 0.831 0.884 0.824	0.911	0.931	0.694

Table 2. *Cont.*

Factor		Outer Loading	Cronbachs Alpha	Composite Reliability	AVE
8. Tourist Worries (TW)	TW2	0.739	0.865	0.909	0.715
	TW3	0.868			
	TW4	0.925			
	TW5	0.839			
9. Tourist Satisfaction (TS)	TS1	0.833	0.897	0.924	0.709
	TS2	0.821			
	TS3	0.842			
	TS4	0.835			
	TS5	0.878			
10. Revisit Intention (RI)	RI1	0.880	0.900	0.926	0.715
	RI2	0.821			
	RI3	0.832			
	RI4	0.864			
	RI5	0.828			

Note: CR: Composite reliability (rho_c); AVE: Average variance extracted.
Source: Data processing results using SmartPLS.

Cronbach's alpha (CA), CR, and AVE were then used to evaluate internal consistency, reliability, and convergent validity. Strong internal consistency was confirmed by CA values ranging from 0.824 to 0.921 and CR values ranging from 0.884 to 0.943. These values exceeded suggested cutoffs. AVE values, which ranged from 0.656 to 0.806, indicated that each construct accounted for more than 50% of the variance in its indicators and that convergent validity was good [52].

Discriminant validity was evaluated using the heterotrait–monotrait ratio (HTMT). All HTMT values were below the conservative threshold of 0.90 (maximum = 0.872, between TS and RI), indicating that the constructs were empirically distinct (**Table 3**).

Table 3. Discriminant validity for the constructs (HTMT).

	AC	IF	IT	NS	PS	RI	SC	STT	TS	TW
AC										
IF	0.705									
IT	0.737	0.752								
NS	0.249	0.364	0.168							
PS	0.658	0.819	0.720	0.455						
RI	0.318	0.376	0.283	0.470	0.397					
SC	0.703	0.604	0.544	0.248	0.613	0.276				
STT	0.600	0.654	0.729	0.305	0.602	0.451	0.339			
TS	0.435	0.588	0.389	0.624	0.640	0.872	0.421	0.521		
TW	0.484	0.432	0.476	0.306	0.554	0.343	0.522	0.407	0.438	

Source: Data processing results using SmartPLS.

For the formative higher-order STT construct, multicollinearity was assessed using variance inflation factors (VIF). Outer and inner VIF values ranged from 1.039 to 2.629, remaining below the critical threshold, indicating no collinearity concerns (**Table 4**)

Table 4. Inner VIF Values.

	AC	GD	GN	IF	IT	NS	PS	RI	SC	STT	TS	TW
AC										2.430		
GD								1.039				
GN								1.083				
IF										2.629		
IT										2.246		
NS											1.118	
PS										2.454		
RI												
SC										1.882		
STT											1.176	
TS								1.043				
TW											1.178	

Source: Data processing results using SmartPLS.

The formative specification of the higher-order STT construct was assessed by examining the significance and relevance of its formative weights via bootstrapping. The results show that accessibility (w = 0.194, $p = 0.017$), interactivity (w = 0.367, $p < 0.001$), and informativeness (w = 0.191, $p = 0.019$) contribute significantly to the formation of STT, whereas personalisation is not significant (w = 0.128, $p = 0.104$). After adjusting for the other STT characteristics, security exhibits a substantial negative weight (w = −0.165, $p = 0.008$), showing a separate contribution (**Table 5**).

Table 5. Higher-order STT: Weights and significance (bootstrapping).

Formative Indicator	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	*T* Statistic (O/STDEV)	*p* Values	Conclusion
AC → STT	0.194	0.196	0.081	2.392	0.017	Significant
IT → STT	0.367	0.364	0.073	5.030	0.000	Significant
IF → STT	0.191	0.192	0.081	2.340	0.019	Significant
PS → STT	0.128	0.128	0.079	1.627	0.104	Not Significant
SC → STT	−0.165	−0.162	0.062	2.663	0.008	Significant

Note: O represents the estimated formative weight; significance was assessed via bootstrapping (5,000 resamples).
Source: Data processing results using SmartPLS.

The results of the measurement model demonstrate robust proof of the reliability and validity of the research constructs. All reflective measures exhibit adequate indicator reliability, internal consistency (CA and CR), convergent validity (AVE), and discriminant validity (HTMT). Furthermore, collinearity diagnostics (outer and inner VIF) reveal no issues with multicollinearity, and the formative assessment substantiates the significance of the higher-order STT construct, as demonstrated by the significance of the majority of formative weights. Following the establishment of the measurement model's adequacy, the subsequent part assesses the structural model by analysing the hypothesised relationships, explanatory power (R^2), effect sizes (f^2), predictive relevance (Q^2), and supplementary insights from IPMA.

5.2. Structural Model

The structural model was assessed using a bootstrapping procedure in SmartPLS to examine the significance of the hypothesised relationships, as well as the model's explanatory power (R^2) and effect sizes (f^2). The model demonstrates adequate explanatory power for the key endogenous constructs (**Table 6**). Revisit intention (RI) exhibited a significant level of explained variance ($R^2 = 0.636$; R^2adj = 0.631), whereas innovative tourism technologies (STT) and tourist satisfaction (TS) demonstrated moderate explanatory power ($R^2_{STT} = 0.451$; R^2adj = 0.439; $R^2_{TS} = 0.450$; R^2adj = 0.443). These results suggest that the proposed model accounts for a meaningful proportion of the variance in tourists' revisit intention at Vietnam's agritourism destinations.

Table 6. R—Square.

	R Square	R Square Adjusted
RI	0.636	0.631
STT	0.451	0.439
TS	0.450	0.443

Source: Data processing results using SmartPLS.

To further assess the contribution of each predictor, effect sizes (f^2) were examined (**Table 7**). The results indicate that TS has a dominant effect on RI ($f^2 = 1.598$), highlighting satisfaction as the primary driver of revisit intention. For the antecedents of satisfaction, novelty (NS) shows a large-to-moderate effect on TS ($f^2 = 0.336$), whereas STT exhibits a small-to-moderate effect ($f^2 = 0.118$). Travel worry (TW) contributes a small impact to TS ($f^2 = 0.044$).

Table 7. F-Square.

	AC	IF	IT	NS	PS	RI	SC	STT	TS	TW
AC								0.028		
IF								0.025		
IT								0.109		

Table 7. *Cont.*

	AC	IF	IT	NS	PS	RI	SC	STT	TS	TW
NS									0.336	
PS								0.012		
RI										
SC								0.026		
STT									0.118	
TS						1.598				
TW									0.044	

Source: Data processing results using SmartPLS.

The path coefficients and hypothesis testing results are reported in **Table 8** and visualised in the structural model (**Figure 2**).

Table 8. Path Coefficient.

Hypothesis	Hypothesis Path	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	*T* Statistic (O/STDEV)	*p* Values	Conclusion
H1a	AC → STT	0.194	0.196	0.081	2.392	0.017	Supported
H1b	IT → STT	0.367	0.364	0.073	5.030	0.000	Supported
H1c	IF → STT	0.191	0.192	0.081	2.340	0.019	Supported
H1d	PS → STT	0.128	0.128	0.079	1.627	0.104	Not Supported
H1e	SC → STT	−0.165	−0.162	0.062	2.663	0.008	Supported
H1	STT → TS	0.276	0.276	0.062	4.472	0.000	Supported
H2	NS → TS	0.454	0.454	0.055	8.196	0.000	Supported
H3	TW → TS	0.168	0.170	0.052	3.256	0.001	Supported
H4	TS → RI	0.779	0.780	0.029	26.995	0.000	Supported

Source: Data processing results using SmartPLS.

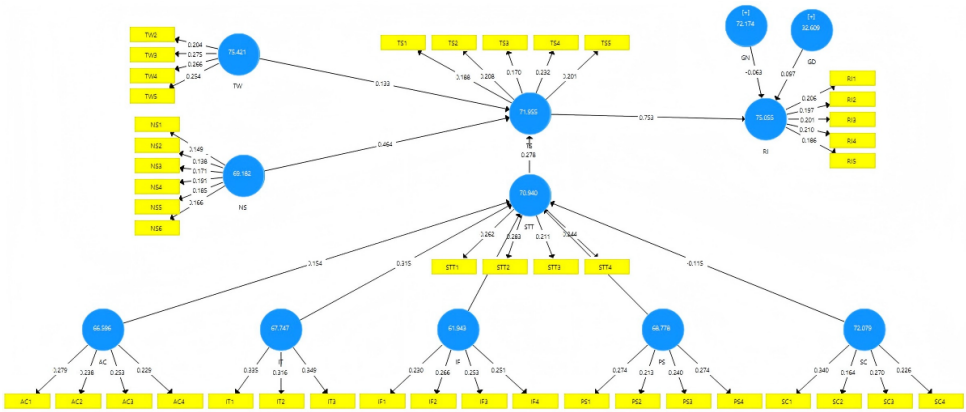

Figure 2. Structural model.

Source: Data processing results using SmartPLS.

First, the results largely support the formative composition of STT. Accessibility (AC → STT) (β = 0.194, p = 0.017), interactivity (IT → STT) (β = 0.367, p < 0.001), and informativeness (IF → STT) (β = 0.191, p = 0.019) positively and significantly contribute to tourists' overall evaluation of STT, supporting H1a–H1c. In contrast, personalisation (PS → STT) is not significant (β = 0.128, p = 0.104), thus H1d is not supported. Personalisation was not determined to significantly predict the STT experience. This may illustrate the prevailing digital landscape of agritourism in rural Vietnam, where several destinations continue to encounter fragmented infrastructure and constrained capacity to develop data-driven, customised offerings. In these contexts, tourists may prioritise fundamental technical functionalities over customisation attributes. Security (SC → STT) is significant but negative (β = −0.165, p = 0.008), supporting H1e and suggesting that, after accounting for other STT dimensions, security represents a distinct (and statistically differentiating) component of tourists' overall STT evaluation in this sample. Security significantly impacts the STT experience; the association is negative rather than the anticipated positive correlation. In agritourism, security is more about a fundamental sense of comfort than about directly enhancing the experience. Higher security concerns may increase awareness of system constraints or service disruptions in rural areas with varying levels of digital preparedness, leading to a less positive overall evaluation of STT.

Second, STT significantly enhances tourists' satisfaction (STT → TS: β = 0.276, $p < 0.001$), supporting H1. Additionally, novelty significantly increases pleasure (NS → TS: β = 0.454, $p < 0.001$), supporting H2. There is a statistically significant correlation between travel worry and satisfaction (TW → TS: β = 0.168, $p = 0.001$). H3 is deemed unsupported on directional grounds, as the connection is notably positive and thus at odds with the predicted negative direction. The results show that travel anxiety has a positive effect on satisfaction, contrary to H3's prediction of a negative association. This suggests that mild worry may function as adaptive vigilance rather than just negative anxiety in the context of agritourism in Vietnam. Travellers are likely to evaluate the experience more favourably when intelligent tourism technology reduces uncertainty by offering fast support and clear information. Lastly, visitor satisfaction is a strong predictor of revisit intention (TS → RI: β = 0.779, $p < 0.001$), supporting H4 and demonstrating that satisfaction is the primary mechanism that converts technology-enabled and uncertain experiences into loyalty intentions.

Gender and generation had little effect on revisit intention (GD → RI = 0.097; GN → RI = −0.063), indicating that demographic factors may have less direct influence than experience-related and attitudinal variables in the model. This implies that in agritourism, visitors' evaluations of technology-enhanced services and the overall quality of the experience have a greater impact on their decision to return than do demographic variables alone. At the same time, recognition of generational warrants is necessary. The results may partially reflect the expectations of travellers who have extensive experience with digital interfaces in travel planning and experience sharing, since Generations Y and Z make up the majority of the sample. While older customers might place a higher value on dependability, clarity, and user-friendliness, younger groups might be more open to smart tourism features. These variations offer useful practical insights for creating more inclusive agritourism experiences, even though they are not strong direct predictors of revisit intention in the current model.

An IPMA (standardised effects) was conducted for RI to establish improvement priorities based on importance (total effects) and performance (average scores) (**Figures 3** and **4**). TS has the highest significance at the concept level (total effect = 0.753; performance = 71.959), followed by NS (0.349; 69.182) and STT (0.209; 70.940). Interactivity has the highest significance (0.066; 67.747) among the STT dimensions, whereas informativeness shows a comparatively lower performance (61.943) despite its noteworthy importance (0.038). This suggests that improving the quality and applicability of the information may yield meaningful increases in revisit intention via the satisfaction mechanism.

The most significant importance values at the indicator level pertain to satisfaction-related items, specifically TS4 (0.175; 71.087), TS2 (0.157; 67.391), and TS1 (0.142; 67.826). From a managerial perspective, metrics that combine high relevance with relatively poor performance indicate specific areas that need improvement, especially STT2 (0.059; 61.087) and NS5 (0.065; 65.652). For STT2, the goal is not just to add more technology but also to improve digital support, making it easier, more seamless, and more enjoyable for tourists in rural areas. Examples include streamlined app design, better navigation, more reliable real-time assistance, and digital features that align with the pace and spirit of agritourism. The results for NS5 show that more culturally grounded and informative experiences, such as involvement in farms, local craft projects, seasonal events, and storytelling-enhanced encounters with rural heritage, are necessary to improve perceptions of novelty. All of these findings suggest that IPMA can guide managers' efforts and align digital and experience improvements to increase satisfaction and the likelihood of return.

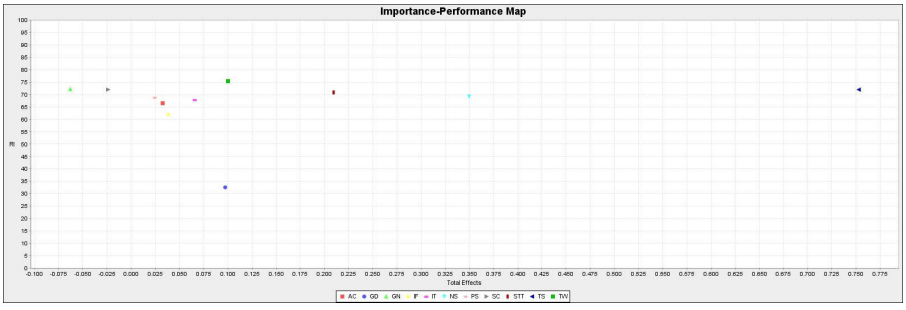

Figure 3. IPMA for Revisit Intention (RI): Constructs (standardised total effects).

Source: Data processing results using SmartPLS.

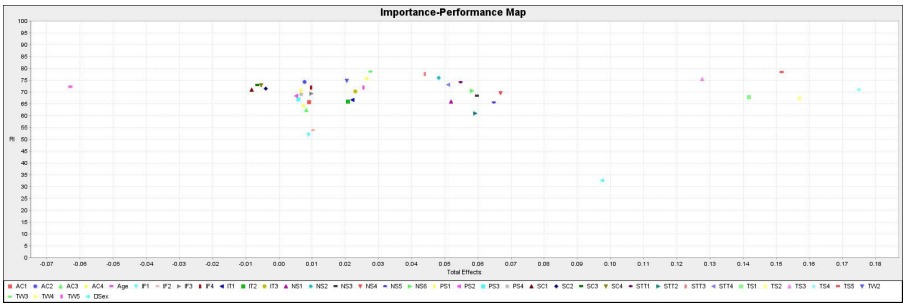

Figure 4. IPMA for Revisit Intention (RI): Indicators (standardised total effects).

Source: Data processing results using SmartPLS.

6. Discussion and Conclusion

6.1. Discussion

By elucidating how technology-mediated experiences influence travellers' cognitive and affective assessments and transfer into revisit intention through a digitalised expectation–confirmation process, this study improves research on smart tourism and agritourism. The results place STTs as key experience processes that intervene in post-consumption appraisal, rather than viewing them as contextual service enhancers. The results support the idea that visitor pleasure serves as the most direct driver of loyalty-related outcomes, such as intention to return and positive word-of-mouth, in line with a large body of tourism research. Previous research in smart tourism and destination marketing has consistently demonstrated that satisfaction quantifies how well the experience fulfils or surpasses pre-trip expectations, making it a crucial factor in determining return behaviour.

The predominance of satisfaction in agritourism, where experiential value and emotional evaluation are important, is both theoretically justified and empirically consistent with earlier research showing that travellers are more likely to return when they feel that the trip offered a significant overall sense of fulfilment rather than just service quality. Importantly, this fulfilment in the current study is influenced by a blend of on-site experiences and technology-mediated interactions along the route rather than solely by physical encounters at the destination. From a digital technology perspective, visitor satisfaction is an all-encompassing evaluation in which STTs influence the development of expectations, the interpretation of performance, and the formation of confirmation judgements.

The results are consistent with the widely held belief that novelty seeking is essential to visitor motivation and experiential evaluation, and that destinations that offer exploration, surprise, and a break from routine generally lead to increased satisfaction [21, 22]. In Vietnam's agritourism setting, authentic cultural experiences, regional cuisine, farm-based involvement, community interaction, and experiential learning are likely to be more indicative of distinctiveness than enthusiasm. By demonstrating that novelty in rural/agritourism is closely associated with authenticity and meaningful engagement, elements that might increase post-visit pleasure and, consequently, reinforce the intention to return, this piece builds on earlier novelty research. The findings show that internet channels are increasingly supporting agritourism innovation. Travellers' expectations and interactions with new rural experiences are shaped by digital material, visual narratives, interactive maps, and real-time support, making unfamiliar activities enjoyable. In this regard, STTs facilitate the conversion of novelty from a potential source of uncertainty into an organised and gratifying experience.

The results on smart tourism technologies are largely consistent with smart tourism literature, which posits that technology enhances travel experiences by augmenting information accessibility, connectivity, decision-making support, and service responsiveness [8]. By conceptualising STT as a formative higher-order construct and showing that interactivity, accessibility, and informativeness, dimensions consistently identified as essential features of smart tourism technologies in prior frameworks, are the main factors influencing tourists' overall assessment of STT, this study adds to the discourse [10,32]. Personalisation typically requires sophisticated data infrastructures, continuous user profiling, and intricate recommendation systems, whereas agritourism destinations, which are often characterised by fragmented information and uneven digital readiness, may derive greater perceived value from dependable, readily available, and real-time responsive technologies rather than highly customised ones. From the perspective of digital technology, these findings imply that basic system functions, those that improve perceived

control, cognitive clarity, and real-time interaction, are more important than sophisticated personalisation features in influencing visitors' technology-mediated experiences in agritourism environments.

Travel anxiety is a negative emotional state that reduces happiness and contentment, especially in situations of uncertainty and danger [14]. However, this study finds a positive correlation between worry and contentment. Moderate levels of worry may trigger coping behaviours (e.g., planning, information search, verification, contingency preparation) that increase perceived control and consequently improve the perceived quality of the trip experience, according to a plausible interpretation that is consistent with the uncertainty reduction perspective and arguments that worry can be functional [41]. Travellers who are more watchful and prepared may encounter fewer unpleasant surprises and report greater pleasure in agritourism settings, where service standardisation may be lower and situational unpredictability may be higher than in mass tourism contexts. This shows that the valence of anxiety may rely on whether destinations and digital touchpoints offer effective uncertainty-reducing cues (correct information, clear advice, responsive help), not that worry is always beneficial.

From a digital perspective, this research suggests that STTs serve a moderating function by influencing whether concern is harmful or adaptive. When technology-facilitated knowledge and communication effectively diminish ambiguity, anxiety may coexist with, or even bolster, favourable post-trip assessments. This interpretation establishes a framework for future study to investigate the boundary conditions (e.g., destination digital readiness, prior rural travel experience, perceived control) in which fear becomes harmful rather than beneficial.

6.2. Practical Interpretation Using IPMA

The structural model identifies statistically significant correlations, while the IPMA offers managerial diagnostic value by highlighting which constructs and indicators should be prioritised to enhance the desired outcome (revisit intention). At the construct level, IPMA suggests that improvements in tourist satisfaction are expected to yield the largest marginal increases in revisit intention, as satisfaction is highly significant and non-ceiling. This corresponds with tourism loyalty studies indicating that a singular service attribute seldom instigates loyalty development; rather, it is rooted in the tourist's comprehensive evaluative assessment. This underscores the essential requirement for agritourism locations to effectively manage the entire tourist journey, encompassing pre-trip information, on-site experience, and post-visit contact to optimise satisfaction.

Additionally, according to IPMA, novelty and STT are important upstream levers since they indirectly influence revisit intentions through satisfaction. From a management standpoint, this suggests that initiatives to improve revisit intention should go beyond marketing campaigns; they should prioritise experience design and technology-driven support that continuously enhances enjoyment. Customised agricultural activities, interactive cultural experiences, seasonal events, and community participation that promote special moments and educational opportunities are all ways to adopt novelty-driven enhancements. These results, which emphasise the value of inquiry and active participation in fostering enjoyment, are consistent with the literature on novelty and rural tourism. At the same time, digital platforms could make it easier to curate, communicate, and sequence these special experiences, so that visitors can interact with them confidently and with sufficient knowledge.

IPMA expands on technological discoveries, claiming that the most practical improvement goals are interactivity, accessibility, and informativeness. Destinations and their digital collaborators (DMOs, OTAs, and platform operators) should prioritise functional enhancements that mitigate friction and uncertainty, including clear digital wayfinding, current activity schedules, transparent pricing, dependable connectivity, real-time messaging and feedback channels, and swift response mechanisms. By highlighting features that are extremely significant despite relatively poor performance, the IPMA indicator-level map enables thorough prioritisation and identifies the most actionable components for improving revisit intention through satisfaction. These findings highlight the strategic value of digital infrastructure as a managerial tool that influences post-visit evaluation and improves operational effectiveness.

6.3. Conclusion, Limitations, and Future Research

This study used a technology- and uncertainty-informed ECM to investigate revisit intentions at agritourism sites in Vietnam. The findings show that visitors' overall enjoyment, influenced by the value of novelty and technology-assisted assistance during the trip experience, primarily determines their willingness to return. The study integrates uncertainty-related dispositions and smart tourism technologies into a model specifically designed for the agritourism

setting, and validates basic connections identified in studies on tourism loyalty. This study demonstrates the relevance of digital platforms in post-consumption evaluation processes within rural tourism contexts by clearly integrating STTs into the expectation–confirmation paradigm. This research possesses some limitations. Because the correlations were observed only once, the cross-sectional design makes it impossible to draw firm conclusions about causality. The sample, which is quite small, was collected from particular agritourism destinations in different parts of Vietnam. The results might not fully capture the agritourism scene in Vietnam or other Southeast Asian countries. By using bigger, geographically diverse samples and, when feasible, longitudinal approaches, future research could improve this field of study.

To investigate how expectations and confirmation processes change over time, future research may employ longitudinal designs, such as multi-wave surveys or experience-sampling methods. Survey results may be correlated with behavioural or digital trace data in the future, such as platform interaction logs, location-based usage statistics, or actual revisit records. In the end, comparative studies across different visitor cohorts and destination types (such as agritourism versus urban smart destinations) could improve the generalisability of the suggested model and elucidate the theoretical understanding of how technology and uncertainty together affect satisfaction and revisit behaviour.

Author Contributions

Conceptualization, H.H.H., T.T.H.V., and H.T.B.T.; methodology, H.H.H., and T.T.H.V.; software, H.H.H., and D.-M.N.; validation, T.T.H.V., H.T.B.T., D.-M.N., and H.H.H.; formal analysis, H.H.H. and T.T.H.V; investigation, T.T.H.V., H.H.H., and H.T.B.T.; data curation, H.T.B.T., T.T.H.V., H.H.H., and D.-M.N.; writing—original draft preparation, H.H.H., T.T.H.V., D.-M.N., and H.T.B.T.; writing—review and editing, H.T.B.T., and T.T.H.V.; visualization, H.H.H., D.-M.N., and T.T.H.V.; supervision, T.T.H.V. and H.T.B.T; project administration, T.T.H.V.; funding acquisition, H.T.B.T. and T.T.H.V. All authors have read and agreed to the published version of the manuscript.

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Institutional Review Board Statement

The study was conducted in accordance with the Declaration of Helsinki and approved at the faculty level by the Faculty of Economic Information System and Electronic Commerce, Thuongmai University, under Approval No. 2025/IS-06-010, dated 10 June 2025.

Informed Consent Statement

Informed consent was obtained from all participants involved in the study.

Data Availability Statement

This study used primary survey data collected from tourists visiting Vietnam's agritourism destinations. The corresponding author may provide anonymised data upon reasonable request, as the dataset is not publicly available due to confidentiality agreements with participants.

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Conflicts of Interest

The authors declare no conflict of interest.

AI Use Statement

During the preparation of this manuscript, the authors used QuillBot and Grammarly solely for language refinement. No AI tools were used for data analysis, interpretation, or generation of scientific content. All outputs were critically reviewed and edited by the authors. The authors take full responsibility for the integrity and accuracy of the work.

References

1. Suanpang, P.; Pothipassa, P. Integrating Generative AI and IoT for Sustainable Smart Tourism Destinations. *Sustainability* **2024**, *16*, 7435. [CrossRef]
2. Mak, H.W.L.; Lam, Y.F. Comparative assessments and insights of data openness of 50 smart cities in air quality aspects. *Sustain. Cities Soc.* **2021**, *69*, 102868. [CrossRef]
3. Le-Dinh, T.; Le, T.D.; Labelle, F. Digital technologies in the circular economy: A bibliometric analysis. *J. Trade Sci.* **2025**, *13*, 252–278. [CrossRef]
4. Viet Nam National Authority of Tourism. Viet Nam records more than 17.5 million international visitor arrivals in 2024. Available online: https://vietnamtourism.gov.vn/en/post/20764 (accessed on 5 January 2026).
5. Nhan Dan Online. OCOP and tourism in relation to the rural economy. Available online: https://en.nhandan.vn/ocop-and-tourism-with-the-rural-economy-post155748.html (accessed on 5 January 2026).
6. DataReportal. Digital 2025: Vietnam. Available online: https://datareportal.com/reports/digital-2025-vietnam (accessed on 5 January 2026).
7. Vu, T.T.H.; Nguyen, T.H. Smart Tourism Research: Where Are We Going: A Science Map of the Field. *Int. J. Hosp. Tour. Syst.* **2026**, *19*, 66–80. [CrossRef]
8. Gretzel, U.; Sigala, M.; Xiang, Z.; et al. Smart tourism: Foundations and developments. *Electron. Mark.* **2015**, *25*, 179–188. [CrossRef]
9. Buhalis, D.; Harwood, T.; Bogicevic, V.; et al. Technological disruptions in services: Lessons from tourism and hospitality. *J. Serv. Manag.* **2019**, *30*, 484–506. [CrossRef]
10. Au, W.C.W.; Tsang, N.K.F. Smart Travel Experiences: A Bibliometric Analysis of Knowledge Domains and Research Areas. *J. Hosp. Tour. Res.* **2024**, *48*, 920–936. [CrossRef]
11. Yap, Y.-Y.; Tan, S.-H.; Tan, B.-C.; et al. Smart tourism technologies and tourist satisfaction: A systematic literature review and research agenda. *Acta Psychol.* **2025**, *258*, 105191. [CrossRef]
12. Oliver, R.L. Whence Consumer Loyalty? *J. Mark.* **1999**, *63*, 33–44. [CrossRef]
13. Torabi, Z.-A.; Pourtaheri, M.; Hall, C.M.; et al. Smart Tourism Technologies, Revisit Intention, and Word-of-Mouth in Emerging and Smart Rural Destinations. *Sustainability* **2023**, *15*, 10911. [CrossRef]
14. Larsen, S.; Brun, W.; Øgaard, T. What tourists worry about—Construction of a scale measuring tourist worries. *Tour. Manag.* **2009**, *30*, 260–265. [CrossRef]
15. Borkovec, T.D. The nature, functions, and origins of worry. In *Worrying: Perspectives on Theory, Assessment and Treatment*; John Wiley & Sons: Hoboken, NJ, USA, 1994; pp. 5–33.
16. Freeston, M.H.; Rhéaume, J.; Letarte, H.; et al. Why do people worry? *Pers. Individ. Dif.* **1994**, *17*, 791–802. [CrossRef]
17. Rezaei, M.; Rokni, L.; Kim, D.H. Contribution of 'Agritourism' Activities in Visitors' Wellbeing and Improved Mental Health in Society. *Iran. J. Public Health* **2021**. [CrossRef]
18. Goo, J.; Huang, C.D.; Yoo, C.W.; et al. Smart Tourism Technologies' Ambidexterity: Balancing Tourist's Worries and Novelty Seeking for Travel Satisfaction. *Inf. Syst. Front.* **2022**, *24*, 2139–2158. [CrossRef]
19. Urry, J. The Consumption of Tourism. *Sociology* **1990**, *24*, 23–35. [CrossRef]
20. Pearson, P.H. Relationships between global and specified measures of novelty seeking. *J. Consult. Clin. Psychol.* **1970**, *34*, 199–204. [CrossRef]
21. Lee, T.-H.; Crompton, J. Measuring novelty seeking in tourism. *Ann. Tour. Res.* **1992**, *19*, 732–751. [CrossRef]
22. Toyama, M.; Yamada, Y. The Relationships among Tourist Novelty, Familiarity, Satisfaction, and Destination Loyalty: Beyond the Novelty-familiarity Continuum. *Int. J. Mark. Stud.* **2012**, *4*, 10–18. [CrossRef]
23. Oliver, R.L. A cognitive model of the antecedents and consequences of satisfaction decisions. *J. Mark. Res.* **1980**, *17*, 460–469.
24. Buhalis, D.; Amaranggana, A. Smart Tourism Destinations Enhancing Tourism Experience Through Personalisation of Services. In Proceedings of the Information and Communication Technologies in Tourism 2015,

Lugano, Switzerland, 3–6 February 2015; pp. 377–389. [CrossRef]
25. Sigala, M. Tourism and COVID-19: Impacts and implications for advancing and resetting industry and research. *J. Bus. Res.* **2020**, *117*, 312–321. [CrossRef]
26. Alsharif, A.; Isa, S.M.; Alqudah, M.N. Smart Tourism, Hospitality, and Destination: A Systematic Review and Future Directions. *J. Tour Serv.* **2024**, *15*, 72–110.
27. Buhalis, D. Technology in tourism-from information communication technologies to eTourism and smart tourism towards ambient intelligence tourism: A perspective article. *Tour. Rev.* **2020**, *75*, 267–272. [CrossRef]
28. Azis, N.; Amin, M.; Chan, S.; et al. How smart tourism technologies affect tourist destination loyalty. *J. Hosp. Tour. Technol.* **2020**, *11*, 603–625. [CrossRef]
29. Huang, C.D.; Goo, J.; Nam, K.; et al. Smart tourism technologies in travel planning: The role of exploration and exploitation. *Inf. Manag.* **2017**, *54*, 757–770. [CrossRef]
30. Tosyali, H.; Tosyali, F.; Coban-Tosyali, E. Role of tourist-chatbot interaction on visit intention in tourism: The mediating role of destination image. *Curr. Issues Tour.* **2025**, *28*, 511–526. [CrossRef]
31. Tran, H.T.B.; Nguyen, T.H.; Le, X.C. What Boosts Users' Intention to Follow Generative Artificial Intelligence-Assisted Recommendations in Tourism. *Tour. Hosp.* **2026**, *7*, 64. [CrossRef]
32. Yuksel, F.; Kement, U.; Dogan, S.; et al. Effect of smart tourism technology experience (STTE) on tourist satisfaction and tourist happiness in Bordeaux: The mediation role of self-gratification. *Int. J. Tour. Cities* **2025**, *11*, 218–241. [CrossRef]
33. Nadee, W.; Kaewkitipong, L.; Ractham, P.; et al. An Investigation of the Intention to Visit Smart Tourism Destinations: Domestic Travelers vs. International Travelers. *Sustainability* **2024**, *16*, 10484. [CrossRef]
34. Yan, D.; Marzuki, A.B.; Yang, J.; et al. Bibliometric Analysis of Smart Tourism Destination: Knowledge Structure and Research Evolution (2013–2025). *Tour. Hosp.* **2025**, *6*, 194. [CrossRef]
35. Yoo, C.W.; Goo, J.; Huang, C.D.; et al. Improving travel decision support satisfaction with smart tourism technologies: A framework of tourist elaboration likelihood and self-efficacy. *Technol. Forecast. Soc. Change* **2017**, *123*, 330–341. [CrossRef]
36. Vu, T.T.H.; Hoang, H.H.; Hoang, T.N.N.; et al. Bibliometric and Content Analysis of Global Trends in Digital Transformation and Rural Tourism. *Geoj. Tour. Geosites* **2025**, *58*, 161–175. [CrossRef]
37. Mitas, O.; Bastiaansen, M. Novelty: A mechanism of tourists' enjoyment. *Ann. Tour. Res.* **2018**, *72*, 98–108. [CrossRef]
38. Tjokrosaputro, M.; Ekawati, S.; Keni, K.; et al. Cultural Tourist Loyalty: Investigating Novelty, Authenticity, and Tourist Satisfaction as Mediation. In Proceedings of the Twelfth International Conference on Entrepreneurship and Business Management 2023 (ICEBM 2023), Surakarta, Indonesia, 2024; pp. 158–172. [CrossRef]
39. Strickland, P.C.; Ratten, V. Study motivations of Bhutanese students in hospitality and tourism courses. *J. Trade Sci.* **2024**, *12*, 22–36. [CrossRef]
40. Nguyen, H.Q.T.; Vu, T.T.H.; Nguyen, T.H. A Study on Factors Affecting Work Engagement of Employees in Travel Businesses in Vietnam. *Int. J. Hosp. Tour. Syst.* **2025**, *18*, 32–42.
41. Muñoz-Navarro, R.; Malonda, E.; Llorca-Mestre, A.; et al. Worry about COVID-19 contagion and general anxiety: Moderation and mediation effects of cognitive emotion regulation. *J. Psychiatr. Res.* **2021**, *137*, 311–318. [CrossRef]
42. Le, B.N.; Nguyen, H.V.; Nguyen, D.M. Understanding how perceived value enhances consumer loyalty toward energy-efficient appliances: The role of satisfaction and product category. *J. Trade Sci.* **2025**, *13*, 23–43. [CrossRef]
43. Nguyen Huu, T.; Nguyen Ngoc, H.; Nguyen Dai, L.; et al. Effect of tourist satisfaction on revisit intention in Can Tho City, Vietnam. *Cogent Bus. Manag.* **2024**, *11*, 2322779. [CrossRef]
44. Hari, R.; Mohan, D.R. Tourist Satisfaction and Revisit Intention in Responsible Tourism Destinations: Insights for Sustaining Engagement and Growth. *Int. J. Environ. Sci.* **2025**, *11*, 1221–1226. [CrossRef]
45. Nguyen, T.Q.; Bui, T.-P. Tourist satisfaction and revisit intention in tropical mountain resorts: A structural equation modeling study in a developing country context. *Tour. Hosp. Res.* **2025**. [CrossRef]
46. Baghirov, F.; Bozbay, Z.; Zhang, Y. Individual factors impacting tourist satisfaction and revisit intention in slow tourism cities: An extended model. *Int. J. Tour. Cities* **2025**, *11*, 63–82. [CrossRef]
47. No, E.; Kim, J.K. Comparing the attributes of online tourism information sources. *Comput. Hum. Behav.* **2015**, *50*, 564–575. [CrossRef]
48. Teng, X.; Wu, Z.; Yang, F. Research on the Relationship between Digital Transformation and Performance of

SMEs. *Sustainability* **2022**, *14*, 6012. [CrossRef]
49. Um, T.; Chung, N. Does smart tourism technology matter? Lessons from three smart tourism cities in South Korea. *Asia Pac. J. Tour. Res.* **2021**, *26*, 396–414. [CrossRef]
50. Hair Jr, J.F.; Sarstedt, M.; Hopkins, L.; et al. Partial least squares structural equation modeling (PLS-SEM). *Eur. Bus. Rev.* **2014**, *26*, 106–121. [CrossRef]
51. Chin, W.W. The partial least squares approach to structural equation modeling. In *Modern Methods for Business Research*; Psychology Press: Hove, UK, 1998.
52. Fornell, C.; Larcker, D.F. Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *J. Mark. Res.* **1981**, *18*, 39–50. [CrossRef]