

Digital Technology for Tourism-Based Alternative Livelihood Intention among the Agripreneurs - Insights from the Hilly Regions of J&K

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Abstract *In the wake of economic mayhem and rising inequalities, entrepreneurial diversification has been put forth as a plausible solution for overcoming high rates of underdevelopment and unemployment by many think tanks. While the literature has already established the importance of digital technology as a significant driver of entrepreneurial intention in rural and agrarian areas, studies examining technology as an enabler for livelihood diversification in less developed locations have been scant. The paper using the Entrepreneurial Event theory (EEM), aims to explore the impact of digital technology adoption on the tourism-based alternative livelihood intention among agripreneurs in hilly regions of J&K. It also adds attitude towards tourism prospects and access to government support into the model. A sample of 75 agripreneurs has been utilized to draw inferences and data was analyzed using smart PLS. Findings show that all factors, except for access to government support have an impact on the alternative livelihood intention. The research addresses and expands on the literature on the limited theory of livelihood diversification, including the part played by technology. The results can help entrepreneurs, IT service providers, non-governmental organisations (NGOs), self-help groups, government agencies, and outside support agents enable modern-world firms that can expand their activities onto relevant segments as and when the window of opportunity opens.*

Keywords: *Digital Technology, Alternative Livelihood Intention, Tourism-Based Alternative Livelihood Intention, Entrepreneurial Event Theory (EET), J&K*

INTRODUCTION

The increasing turbulence in the global economies, coupled with the recurring nuances of zoonotic spillovers has given rise to multifaceted problems. In addition to the escalating health concerns, the emerging countries have seen a significant economic downturn marked by widespread layoffs, company closures, and debt traps. In the Indian context too, the daunting scenario has been apparent, with more than 50% of start-ups and Micro, small, medium enterprises (MSMEs) shutting down (Dave, 2021) and the gap between rural and urban areas rising. Most recently, rural unemployment rates has risen to nearly 8%, which has policymakers looking for new alternatives for livelihood

generation (“Rural unemployment rate shoots”, 2022). Think tanks have identified entrepreneurship as one of the most straightforward approaches for addressing the high rates of underdevelopment and unemployment. In the Indian context, numerous policy and institutional frameworks have been suggested, with self-employment and diversification at their core. Entrepreneurship forms a pivotal solution of the rural livelihood, which has high dependence on agriculture (Usman et al., 2019; Alsos et al., 2011). Even though the sector is mostly focused on farming, it also includes other associated activities including companies that deal in agro-inputs, equipment (such as seeds, fertilisers, chemicals, and pesticides), agro-products, processing, wholesale, and agro-supportive services. Over the past

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decade, the sector has witnessed a rapid and market centric transformation which has been accompanied with falling income levels. Coping up with this mis-match requires the development of specific skills and foresightedness among the Agripreneurs as well new strategies that act as a buffer against uncertainty. Entrepreneurship can help young people in rural and underdeveloped areas find employment within the prevailing social structure (Ahmadpour et al., 2020). This offers two-fold benefits. First, it discourages external migration among the rural youth in search of livelihood, and second, it contributes to the development of the local community through activities such as agriculture, small-scale manufacturing, and, if the resource endowments allow, – for tourism.

The tourism industry, which adds significantly to India's employment and foreign exchange earnings, encompasses a variety of unique products including hotels and hospitality, transportation, tourist attractions, and agencies. Its landscape has been gradually changing over the years, with simple recreation being replaced by the principles of production, service, and sustainability. Consumers' rising disposable income, the internet revolution, and regulatory promotion of "openness", are all contributing to the industry growing at an unprecedented 3.9%. (Calderwood & Soshkin, 2019). Additionally, a movement from careless to conscientious travel across destinations closer to homes has become more common, emphasising the need for more avant-garde travel products with sustainability at their core. The addition of novel varieties to existing travel portfolios can enhance the competitiveness of the country in the post pandemic tourism market.

India has a huge scope for medical, nature, religious, sports and eco-tourism. Agricultural tourism or Village tourism is one such niche area which has potential for the future. While innumerable studies have addressed the typologies, service quality, and revisit intention of tourists, not many cater to the supply side factors- mainly, and the existing entrepreneurial intentions in the tourism sector. Even fewer studies explore the role and potential impact of diversification of livelihood to tourism-based ventures in areas with invaluable natural resources. Farm and non-farm-based diversification is an essential entrepreneurial strategy in the agriculture and agribusiness sector (Usman et al., 2019). However, it to a great extent, depends on emerging market opportunities and prevailing experience in using technologies among the entrepreneurs (Amanor-Boadu, 2013; Morris et al., 2017). Both of these have important implications for any firm's entry decision. Specifically, in markets with highly competitive markets, it is safe to argue that existing enterprises can evolve and extend their operations onto related segments as and when the window of opportunity opens. According to UNWTO, mountain and hill tourism provides communities with a means of subsistence while drawing between 15% to 20% of all tourists worldwide. The vulnerable mountain

community can be revitalised with some restructuring through tourism- centred alternative livelihoods.

Tourism-based livelihood opportunities refer to those economic pursuits that are directly and indirectly related activity of people travelling to other locations, either domestically or internationally, for leisure, social or business purposes including hotels, restaurants, personal services, and trades. The role of tourism in creating new income-generating activities and reducing dependencies on environmentally damaging practices is already well known.

This study focuses on the positioning and development of rural tourist villages and village tourism in Jammu and Kashmir's hilly regions. With its abundance of natural resources, the union territory is regarded as the nation's natural greenhouse. However, it is currently struggling with issues including dispersed holdings, challenging terrain, and socioeconomic backwardness, which can restrict the options available to aspiring entrepreneurs. While the scope of entrepreneurship in the Indian economy spans, and sometimes converges between sectors, it was both interesting as well as necessary to study the alternative livelihood behaviors among small entrepreneurs and delineate the barriers for them. Keeping this in view, the paper is structured as followed; the first part comprises a brief summary of the previous work on digital technology, livelihood diversification and tourism-based businesses. This is followed by the introduction of the research model and corresponding hypotheses. The methodological approach and empirical results are presented next, followed by a discussion of the theoretical and practical implications. The last section concludes with a summary of limitations and an outlook on future research.

REVIEW OF LITERATURE

The determinants of livelihood diversification have been classified into two major sets- namely push factors and pull factors. Push factors, refer to those pressing challenges that ultimately pave the way for additional sources of livelihood. These include risks, social insurance, seasonality of work, loss of past income, and availability of newer channels (Huang et al., 2021; Nyaupane & Poudel, 2011). Pull factors, on the other hand, are the opportunities that can drive out diversification of income sources in the less developed communities such as improved infrastructure and market access, physical proximity to tourism sites, governmental support, rich resource endowments, general positive attitude towards tourism, rising professional or entrepreneurial knowledge and growth of information, communication and ICT (Jayne & Chamberlin, 2012; Praptiwi et al., 2021). While most of the determinants have been discussed in depth in previous studies (Praptiwi et al., 2021), the role of digital adoption in increasing the specialization of entrepreneurs and alternate livelihood intention is yet to be embodied. Several

barriers to tourism-based alternative livelihood have also been addressed in the literature such as barriers related to basic amenities, low education levels among the population, overreliance on existing economic activity and reluctance to change. This could be due to the lack of disincentives or absence of push factors in the transition of tourism as an alternative.

ICT and rural entrepreneurship has been found to have a substantial relationship by a few researchers (Rahman et al., 2015; Zaremohzzabieh et al., 2016). Information and communication technology and information systems play a pertinent role in linking the resource-constrained businesses to the mainstream commercial hubs, thereby aiding in knowledge sharing. From an entrepreneur's perspective, the information generated from the use of technologies, such as the internet, mobile and social media can help proprietors acquire knowledge to diversify and become profitable (Kim & Kogut, 1996). Cost-effective and real-time social interactions also pave the way for greater network support and better decision-making. The ongoing and ever-expanding digital inclusion around the world are also impacting the general well-being of the communities through poverty elimination, sustainable livelihood, task extensions, and cost-effective communication. Thus, the paper aims to investigate the role of digital technology adoption in generating tourism-based alternative livelihood intention among agripreneuers in the study area.

In the wake of the changing entrepreneurial dynamics and the rising emphasis on P3 movements involving pro, planet and people. The alternate livelihood movement was introduced as the solution for many rural-world problems of low-income growth, high migration and excessive environmental exploitation. While only a few previous studies have explored the impact of tourism-based alternative livelihoods on island communities – such as (Praptiwi, 2021), and (Hilson & Banchirigah, 2009) in mining-based livelihoods, not many studies integrate the use of digital technology and livelihood diversification intention among entrepreneurs.

Theoretical Background

The paper amalgamates literature on livelihood diversification, tourism, digital technology use, and entrepreneurial intention. The scholarship on entrepreneurship has been explored from the purview of several theories, the most common being- The entrepreneurial event theory (EET) by Shapero & Sakol (1982); theory of planned behavior (TPB) by Ajzen (1991); self-determination theory entrepreneurship potential model (EPM) by Krueger and Brazeal (1994) in the picture. The EEP model also called as the Entrepreneurial event model is based on the premise that the decision to perform any entrepreneurial activity is dependent on its desirability and feasibility, along with the propensity to act on the present opportunity. Within this backdrop, some studies

found the degree of perceived feasibility or desirability to be an antecedent of entrepreneurial intentions, while other studies investigated the combined effect of both as a strong determinant of entrepreneurial intentions (Fitzsimmons & Douglas, 2011; Ali et al., 2011). Recently, several studies have modified or extended the model to add to its robustness and relevance in the context of the study. Even though entrepreneurial intention has been explored from myriad contexts, including university students, Agri farmers, fisherman, mining community etc. (Pato & Teixeira, 2016), few studies have simultaneously incorporated digital or social media as a determinant of entrepreneurial intention (Alayis et al., 2018). Studied the impact of social networking sites use on the entrepreneurial intention among undergraduate students using the EEP. Another study, by Moghavvemi et al., (2013) converges the UTAUT model and the EEP model to understand entrepreneurial intention to use IT and also its use behaviour. Thus, based on the theoretical foundations, the following research hypothesis are presented.

H1: There is an association between digital technology use and entrepreneurial knowledge in the study area.

H2: There is a relationship between digital technology use and tourism-based alternative livelihood intention in the study area.

H3: There is an association between digital technology and access to government support among entrepreneurs in the study area.

H4: There is an association between government support and tourism-based alternative livelihood intention in the study area.

H5: There is an association between entrepreneurial knowledge and tourism-based alternative livelihood intention in the study area.

H6: There is an association between attitude regarding the development prospects of tourism and tourism-based alternative livelihood intention in the study area.

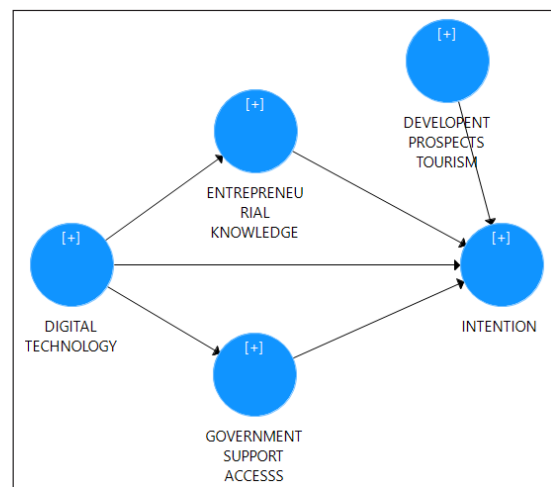


Fig. 1: Research Framework

H1: Digital technology use is associated with entrepreneurial knowledge among the agripreneurs in the study area.

Entrepreneurial knowledge refers to the know-how of different aspects of starting and running a business that can contribute realistically to the perceptions about entrepreneurship (Miralles et al., 2016; Roxas et al., 2008). Even though it has been considered as an exogenous variable that affects the determinants of entrepreneurial actions, such as attitudes, subjective norms, and perceived behavior control (Roy et al., 2017). It has also been found to affect venture creation intentions directly by virtue of it being the heart of entrepreneurship (Jebarajakirthy & Thaichon, 2015; Farani et al., 2017).

H2: There is a relationship between digital technology use and tourism-based alternative livelihood intention in the study area.

H2: The acceptance and development of ICT provide significant support to entrepreneurs for disadvantaged communities in an area. While evidence of its success in propagating rural e-commerce intention is available in the scholarship, it can be argued that technology has a role to play in raising intention to start tourism-based alternative livelihood among agripreneurs (Huang et al., 2021; McFadden & Gorman, 2016). This can be done by eliminating information imbalance, online learning to gain professional knowledge, and using online marketing.

H3: There is an association between digital technology and access to government support among entrepreneurs in the study area.

H4: There is an association between government support and tourism-based alternative livelihood intention in the study area.

In order to encourage the younger generation and potential entrepreneurs to start their own businesses, government and educational institutions are giving substantial attention to and focusing on fostering entrepreneurship. Time and again it introduces several programs and plans that enhance the competitiveness of the businesses and makes them more sustainable. According to Congregado et al. (2012), Favorable government policies, support mechanisms in the form of adequate resource allocations, technology, knowledge transfer and innovation programs, subsidies and positive reinforcements (Bakar et al., 2020; Waseem et al., 2021; Congregado et al., 2012). More recently, the introduction of e-government portals and online service delivery has added to the ease of doing business and added to the entrepreneurial creativity (Das & Das, 2021; Liang et al., 2016).

H5: There is an association between entrepreneurial knowledge and tourism-based alternative livelihood intention in the study area.

Entrepreneurial knowledge forms an essential strategic resource for the entrepreneurs and reflects the level of knowledge and awareness an entrepreneur has about the nuances of starting, running and expanding an enterprise (Yaghoubi Farani et al., 2017). It also includes capabilities of opportunity identification, within the ambit of a favorable structural support system and the awareness regarding the existence of other feasible options (Roxas, 2014). Since previous studies have established the relationship between entrepreneurial knowledge and intentions, it can be argued that it can promote diversification of livelihoods among entrepreneurs too through mimic behaviour (Kim & Kogut, 1996).

H6: There is an association between attitude regarding the development prospects of tourism and tourism-based alternative livelihood intention in the study area.

The shift of modern day travelers from destination of commercial interests to the untouched ones, has created opportunities for many lesser explored areas. Village tourism in Pancheri, is one key example that is not only promising but capable of promoting inbound tourism in the union territory. The plethora of activities included in the service industry are further adding to the potential of the tourism activities and making it a lucrative source of additional income.

METHODOLOGY

The objective of the paper is to investigate the influence of digital technology use on the tourism based alternative livelihood intention of agripreneurs in the hilly regions of Jammu & Kashmir. Considering the predominant image of the erstwhile state as a commercial tourist destination, and its aspirational quest to integrate new forms of leisure activities-such as Agri and rural tourism, village tourism, the study is relevant in the area.

A survey technique was used to collect information. The constructs of the research model were developed following an extensive literature review of relevant theoretical backgrounds and studies. A total of items 16 were generated. This was evaluated by 2 academicians with research interests in the study area. Based on the feedback, items were modified and deleted. The survey asked respondents related to the major constructs, the scales of which had been established in the previous studies. A list of entrepreneurs was obtained from the EDI and contacted personally in the month of May 2021 to August 2021. Out of the 150 entrepreneurs' short listed from the regions of Udhampur and Budgam. A description of the final survey items is given in Appendix 1. A five-point Likert scale was used, where 1 = Strongly Disagree (SD) And 5 = Strongly Agree (SA). Finally, data were analyzed using SPSS and PLS due to their characteristic feature of analyzing small samples with the requisite precision.

RESULTS AND FINDINGS

The sample for the data collection was first analysed using descriptive statistics. In terms of size, the majority of the firms were micro (75%), followed by small (25%).

In terms of technology infrastructure, most of the firms owned a desktop computer along with a smartphone (20.4%), but a significant portion of owner-managers reported having only a smartphone (79.6%). Findings show that the agriprenuers use of digital tools is mostly centered around utilizing mobile technologies and their applications such as WhatsApp, Short messages, you tube, internet searching, and e-banking. As it supports both one-to-one as well as one-to-many interactions, and provides access to information from all around the globe, it is slowly being used for more advanced functions also.

Table 1: Digital Technology Adoption by Agriprenuers

Technology Use	Frequency
YES	75
NO	30
TOTAL	105

To test and validate the framework developed from the extensive review of literature, Partial least square structural equation modelling (PLS-SEM) was used by employing

Smart PLS 3. Further, the recommendation by Manley et al., (2021) to use the Covariance based SEM instead of the Maximum likelihood SEM for assessing the model fit in entrepreneurial management and organizational fields was considered. Based on the steps for conducting PLS given by Hair et al. (2017), the analysis included the assessment of both the measurement and structural model.

Measurement Model

The measurement model is the first step toward model assessment and involves the assessment of the reliability and validity of the constructs under study. The reliability and validity of the constructs in the measurement model were subjected to factor and reliability analysis. For the reflective measurement model, the guidelines provided by Hair et al. (2013) and Wong (2016) were followed to examine the construct reliability and convergent and discriminate validity, who reported a minimum of 0.40 (Table 3) as a guideline for checking indicator reliability. Therefore, all the indicators of the latent variables used are reliable as they exceed the minimum value required for individual indicator reliability. The indicator loadings for all reflective constructs were above 0.708 (Hair et al., 2013), thereby indicating that the construct explains more than 50 percent of the indicator's variance. Therefore, all items above 0.6 were taken as given in Table 2.

Table 2: Cross-Loading

	Digital Technology	Entrepreneurial Knowledge	Government Support	Dev of Tourism Prospects	Tourism-Based Alternative Livelihood Intention
DT1	0.879				
DT2	0.873				
DT3	0.785				
EK1		0.61			
EK2		0.819			
EK3		0.652			
EK4		0.821			
GOVE1			0.765		
GOVE2			0.879		
DEV1				0.682	
DEV2				0.819	
DEV3				0.580	
TI1					0.813
TI2					0.650
TI3					0.881

Composite reliability was used for examining the internal consistency reliability (value > 0.6) (Bagozzi & Yi, 1988; Hair et al., 2012).

Table 3: Reliability Measures of the First-Order Latent Variables

Construct	Item	CR	AVE
Digital technology	3	0.883	0.717
Entrepreneurial knowledge	4	0.814	0.684
Government support	2	0.874	0.779
Dev of tourism prospects	3	0.790	0.651
Tourism-based alternative livelihood intention	3	0.819	0.627

Previous studies (Bagozzi & Yi, 1988; Hair et al., 2012) have insisted researchers use composite reliability for examining the internal consistency reliability. The minimum value accepted for internal consistency reliability is 0.6 and the preferred level is 0.7 or higher value of composite reliability in PLS-SEM.

Cronbach alpha and Composite reliability scores were taken to establish internal reliability. The results were considered satisfactory with all composite reliability scores >.70 (Table 3).

Convergent validity implies the degree to which a measure shows convergence or divergence with other measures of the same construct and is indicated by the AVE scores being equal to or greater than 0.5 (Bagozzi & Yi, 1988; Hair et al., 2016) or inspection of the Composite reliability to be > or equal to 0.70 cut off. Lastly, the discriminant reliability is checked, using the *heterotrait-monotrait ratio of correlations* (HTMT) wherein if the HTMT value is below 0.90, discriminant validity is established between two reflective constructs (Table 4).

Table 4: HTMT Criterion Analysis

Construct	Development Prospects Development Prospects	Digital Technology	Entrepreneurial Knowledge	Government Support Access	Tourism-Based Alternative Livelihood Intention
Development Prospects					
Digital technology	0.175				
Entrepreneurial knowledge	0.31	0.441			
Government support access	0.123	0.476	0.300		
Tourism-based alternative livelihood intention	0.218	0.767	0.337	0.430	

Structural Model

With respect to the structural model, the significance of the path coefficient was evaluated to ascertain the explanatory power. Bootstrapping with 1000 bootstraps was used to

determine the stability of estimates. It is also used to measure the t-value and beta coefficient of the variables thereby establishing strength and validity between the connecting variables.

Table 5: Path Coefficients and Results

	Original Sample (O)	T Statistics (O/STDEV)	P Values	Result
Digital Technology -> Entrepreneurial knowledge (H1)	0.399	3.822	0.000*	Supported
Digital Technology -> Intention (H2)	0.556	3.628	0.000*	Supported
Digital Technology ->Government Support Access (H3)	-0.489	2.629	0.000*	Supported
Government support access -> Alternative livelihood intention (H4)	0.161	1.143	0.253	Not supported
Entrepreneurial knowledge -> Alternative livelihood intention (H5)	0.470	2.248	0.000*	Supported
Development prospects -> Intention	0.691	9.234	0.000*	Supported

*Significant at 0.05 level.

DISCUSSION

The findings of the study show that all but one of the hypotheses were supported. H1, H2 and H3 show that there is an association between digital technology and entrepreneurial knowledge, tourism-based alternative livelihood intention, and access to government services. However, no major support was found for the association between access to government support and tourism-based alternative livelihood intention in the study area (H4). One of the main reasons for the lack of association could be the lacking awareness about government programs for the promotion of tourism in the study area, or the high level of paper work and red-tapism in starting tourism-related businesses, say a hotel or homestay (Tende, 2014). Another reason can also be the shortcomings in policy inclusions that are more centered around serving the unemployed youth than the existing entrepreneurs. More specific schemes can be introduced to provide opportunities to existing agriprenuers to diversify operations. This includes agri farmers, processors and even traders who can alternate between traditional operations and food, accommodation or service providers (Sundar, 2016). Entrepreneurial knowledge is found to be associated with tourism-based alternative livelihood intention, thereby validating the immensely important role of prior experience, up-to-date knowledge and learning willingness for diversification (Leng et al., 2020; Liu, 2018).

PRACTICAL IMPLICATIONS

The significance of digital technology and entrepreneurial knowledge as a subset of the feasibility factors for entrepreneurial intention are manifold. As a result, several international and government agencies are now supporting educational initiatives that target behavioral, resource, regulatory, and structural barriers (Solesvik, 2013). Technology, knowledge, and access to government barriers are intertwined in the paper, placing it within the framework of entrepreneurial event theory. The aforesaid constructs are considered feasibility factors, while an individual construct of a general attitude toward the development of tourism prospects is deemed as a desirability factor. As economic stressors continue to escalate, alternate livelihood initiatives can help address the issues related to the triple bottom line. To the best of our knowledge, the study is one of the first to investigate the effects of technology on the alternative livelihood intention of existing entrepreneurs. Since agribusinesses form the sample of the study, the study area chosen has immense potential for the development of tourism-related commercial activities. Think-tanks, non-governmental organizations (NGO's), government departments, and external support agents can use the study findings to channel the phenomenal potential of digital adoption and maintain sustainability through diversification.

LIMITATIONS AND FUTURE SCOPE

The current study is subjected to certain limitations. Firstly, it takes into consideration the constructs with their basis in the Entrepreneurship event theory (EET). As a result, it is subject to the same limitation as that of theory, especially related to the construct of intentions which may or may not convert into actual behavior. Similarly, the use of perception-based measures and self-reported data have their shortcomings (Podsakoff et al., 2012). However, in the absence of other robust measures of the given constructs, and literature support for the aforesaid argument (Kautonen et al., 2015), the study seems viable. Considering the small size of the sample, generalizations may be difficult. Future studies can be used to understand the context of diversification of livelihood among entrepreneurs and agriprenuers using qualitative and quantitative studies, and the addition of other factors such as resource endowments, income falls, and impact of a pandemic. Studies can also study moderating effect of personal characteristic factors such as age or gender to understand the relationship better in the wider rural context that is attracting a lot of entrepreneurial research.

CONCLUSION

The study integrates the role of digital adoption into the factors influencing the diversification of livelihood, more specifically, tourism-based livelihood in hilly regions of J&K. While findings show that there is an inclination of existing entrepreneurs towards the opportunity provided by tourism, some underlying factors may affect this intention. The findings address and add to the scarce theory on livelihood diversification literature, and include the role of technology in it. Findings can be useful for entrepreneurs, IT service providers, non-governmental organizations (NGOs), SHG government departments, and external support agents for enabling modern-world enterprises that are more competitive and less destructive and restrictive.

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APPENDIX-1

1.	<i>Digital Technology Use</i>
	I think access to digital technology has made my business easier.
	I think access to digital technology has helped me get more market information.
	I think access to digital technology has provided me with a variety of marketing tools.
2.	<i>Entrepreneurial Knowledge</i>
	I think it is very important to obtain professional knowledge to carry out alternative businesses related to tourism.
	I am keen on obtaining professional knowledge of tourism entrepreneurship through online or offline means.
	5a: I think it is very important to obtain professional knowledge to carry out rural e-commerce entrepreneurship.
	I can better obtain and master the professional knowledge of carrying out alternative businesses related to tourism.
3.	<i>Development Prospects of Tourism -Based Businesses</i>
	I firmly believe that tourism-based business has broad prospects for development.
	I think starting a business in tourism-based business can bring about changes in income and life.
	I am optimistic about the future of the tourism-based and want to start alternative businesses in this sector.
4.	<i>Tourism-Based Alternative Livelihood Intention</i>
	Starting my own tourism-based business sounds attractive to me.
	I would rather find a new tourism-based venture than be the manager of an existing one.
	I plan to set up an alternate business to cater to the growing tourism potential of my area.
5.	<i>Access to Government Support</i>
	I think there is enough encouragement from the government to start off alternative livelihoods.
	I think help from government organizations is easily available.