

Socio-Economic Changes in a Himalayan Mountain Village under Rapid Economic Growth in India: The Re-Investigation of a Village in the State of Uttarakhand

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Abstract This paper examined the recent socio-economic changes of a village in Uttarakhand that has shown rapid economic growth. We selected K Village as a study field, where we conducted a survey in 2007. Therefore, our primary intention was to examine the changes that occurred over the 10-year period since our original investigation. The research results are as follows. First, we found some changes in the employment structure. The agricultural sector continued to play an important role in employment opportunities, though the number of people who engaged in agricultural work decreased. There was an increase in non-agricultural jobs, particularly in the opportunity for office-work in Indian metropolitan areas (as well as overseas). Second, considering the benefits of tourism development in the village, some residents pointed out positive effects, such as employment creation and increase of aided businesses related to tourism. On the contrary, other residents emphasized negative effects, such as the deterioration of the environment due to improper development. Third, for the future development of agriculture, it is important to develop strategies for improving agricultural mechanization and increasing the value of products as the number of agricultural workers has marginally decreased in recent years. Fourth, we confirmed the continuous progress in income, education, and the spread of consumer goods over the 10-year period. Our 2017 reinvestigation of K Village was able to confirm the tendency for the village to continuously develop, though there were some issues to be solved.

Key words mountain village, employment opportunity, household economy, underdeveloped region, Uttarakhand, India

I. Introduction

This paper examines recent socio-economic changes in rural, underdeveloped regions of India under rapid economic growth. In this study, we focused on the State of Uttarakhand because it has been generally characterized by underdevelopment (Okahashi, 2014), but has shown a tendency for certain types of development after economic liberalization, such as industrialization and tourism. Specifically, we selected K village as a focus of study. K village is located near the provincial city of Nainital, which is a hill station that developed in the colonial period as a highland summer retreat. In September of 2007, we conducted an intensive household survey in K village. Based on our analysis of that survey, we then published research results that focused on the village's rural transformation (Okahashi, 2016).¹ In this study, we conducted a March 2017 reinvestigation of K village that involved the aid of graduate students in the Taoyaka Program at Hiroshima University. We conducted an intensive household census survey, along with some sample surveys. Therefore, this

paper focuses on a discussion of the changes that occurred in K village between 2007 and 2017.

Okahashi (2016) clarified the following important aspects of K village. The village is a notable example of an underdeveloped area of India that has improved its circumstances. Various employment opportunities were provided due to the development of commercial agriculture in the village. As well, the availability of various off-farm employment opportunities opened in the local labor market. A number of households in K village are economically dependent on income from off-farm employment. On the other hand, there is an extremely high number of households that are engaged in agricultural work, such as vegetable growing. The expansion of employment opportunities and the subsequent improvement of the household economy have mainly been attributed to the higher educational levels of villagers.

As mentioned above, our second survey of K Village was conducted in March 2017. The General Household Survey (GHS) covered all households in the central hamlet (KT Hamlet) of K Village. This paper provides a

detailed data analysis that exclusively covers KT hamlet.

II. An Overview of K Village and KT Hamlet

K Village is around 12 km by road from Nainital, which takes around 30 minutes to travel by automobile. Since access to K Village has been improved in recent years, it exhibits suburban characteristics. While Nainital has prospered as a highland resort since the colonial period, the number of tourists has rapidly increased in recent years. Along with that, economic growth has improved. In addition, the district's government office is located in Nainital. The area is central to both government and education. Consequently, K Village is strongly considered to be affected by Nainital's influence.

K Village is located on a gently sloping hill with a central elevation of around 1,635 m. A small lake in the center of the village attracts tourist activity to the area. While the village is a short distance from Nainital, it sits at an altitude of around 2,000 m. This means that there is approximately a 400 m difference in altitude between K Village and Nainital. This difference in altitude has presented an access problem.

According to 2011 census, there were 321 households in K Village, and 1,552 inhabitants. In 2001 census, there were 271 households, and 1,413 inhabitants. This means that both the number of households and the population have increased. Incidentally, the 2011 census revealed that there was a 92% literacy rate (95% for males, and 87% for females) for people over 7 years old in K Village, which is a fairly high number when compared to the 74% literacy rate in India as a whole, and the 84% rate (90% for males, and 77% for females) in Nainital district.

KT Hamlet, in which we conducted a household survey, is one of the five small hamlets that comprise K Village. The hamlet functionally has a central position in K Village.

Most households in KT Hamlet were part of the upper castes. As shown in Table 1, the caste structure included

10 households of the Brahmin caste, and 52 households of the Rajput caste. Both the Brahmin and Rajput castes accounted for 80% of all households, although 11 households were in scheduled castes and occupied 15% of the total. In terms of farmland ownership, there is a large gap between the castes. Rajputs were considered to be the dominant caste, and owned 90% of the farmland. Furthermore, many large households in this village owned more than 30 nari (60a, 6,000 m²). On the other hand, the scheduled castes were characterized by a lack of farmland ownership, whereas members of the Brahmin caste predominantly owned small plots of land, with a few who were not farmland owners.

Other than a newly joined Muslim household, there has been no fundamental change in the caste composition of KT Hamlet since the original survey.

III. Changes in the Employment Structure

From the perspective of employment, the 2007 survey revealed that KT Hamlet was endowed with a variety of opportunities despite its mountainous location. KT Hamlet was considered to have belonged to a remarkably good class because many of the villages in Uttarakhand did not possess the same type of employment opportunities. Labor-intensive vegetable cultivation has been expanded based on K Village's close proximity to Nainital and the abundant water supply provided by irrigation. Along with that, the high demand of Nainital's local labor market provided K Village with a variety of accessible non-agricultural job opportunities. The employment opportunities in Nainital were stable, and included jobs such as teaching, civil service positions, office work, and various other hotel and commercial jobs related to tourism. However, the disparity between above mentioned stable employment and tourism related jobs should be noted from an economic standpoint.

Based on data regarding the primary occupation of villagers, we analyzed the characteristics of the employ-

Table 1. Distribution of landholdings

	No. of households								
	0 nali	1~4	5~9	10~19	20~29	30~39	40~49	50~	Total
Brahmin	0	9	1						10
Rajput	7	19	7	4	4	4	4	3	52
Scheduled Caste (SC)	5	5	1						11
Muslim	1								1
Others	1								1
Total	14	33	9	4	4	4	4	3	75

Note: 1 nali=2a

Source: GHS data collected by the Taoyaka onsite training in March 2017

Table 2. Main occupation by sex and caste

No. of persons

	Male					Female				
	Brahmin	Rajput	SC	Muslim	Total	Brahmin	Rajput	SC	Muslim	Total
Agriculture (Cultivator)	2	34	1		37	4	24	1		29
Shop owner		6			6		2			2
Buisness	1	7			8		1			1
Transport buisness		3			3					
Contractor		1	1		2					
Teacher		3			3		7			7
Office worker (Technical)		5	3		8					
Office worker (Clerical)		9	3		12		5			5
Civil servant (Officer)	2	14	1		17		4	1		5
Village head		1			1					
Army		1			1					
Hotel employee		6	4		10					
Shopkeeper,servant,cook			4		4			1		1
Daily laborer			3		3					
Taxi driver		2	2	1	5					
Others							2			2
Total	5	92	22	1	120	4	45	3	0	52

Source: GHS data collected by the Taoyaka onsite training in March 2017

ment structure in KT Hamlet in 2017 (Table 2). It was evident that 30% of males were employed in agriculture. The majority of them were part of the Rajput caste, which dominated farmland ownership in the hamlet. On the other hand, males who were not employed in the agricultural sector worked in a wide variety of other occupations. Most notable among these were in civil service, office work, and teaching, which were the jobs held by 48% of non-agricultural workers. More than half of these individuals worked in Nainital. This indicated that the local labor market is playing a crucial role in providing employment opportunities for villagers. In addition, there were some who worked in hotels, stores and the transport business. These kinds of job opportunities were created, mainly because of the tourism development in Nainital and KT hamlet.

The employment status of females in KT hamlet is similar to that of males. Over 50% of females were engaged in agricultural employment. This rate would be higher if it considered the agricultural work of females who answered that their occupation was a housewife. Outside of the agriculture sector, there were a small number of females employed in non-agricultural sectors, such as those involving teaching, civil service jobs, and office work. Compared to males, it is worth noting that employment positions related to tourism, such as those in hotels, were not held by any female workers.

When comparing KT Hamlet's 2007 and 2017 employment structures, it can be pointed out that there are

four significant changes, as follows (Table 3). First, the agricultural sector was still playing an important role in providing employment opportunities for villagers. However, the number of people who engaged in agricultural work was decreasing, and especially declined in younger generations. For individuals in their 20s, only a very small number of females were engaged in agricultural employment. Second, there was an increase of males who were engaged in hotel jobs, especially those provided within the village. These workers were mainly of younger generations that ranged in age from the 20s to 40s. Third, there was also an increase of workers in their 20s who were engaged in office work. The job destinations of these workers were mainly distributed in metropolitan areas of India, with some being overseas (Table 4). It is interesting to note that there was a tendency for females with improved educational attainment to engage in these types of jobs. Finally, it is worth noting that there was an increase in the number of self-employed workers who were engaging in shop business or the transport business. The increase in these kinds of jobs was mainly caused by tourism development in the region.

IV. The Progress of Tourism Development

Nainital is a city located near K Village that developed as a highland summer retreat (or hill station) during the colonial period. After the economic liberalization of 1991, tourists to Nainital dramatically increased. In the 2000s,

Table 3. Main occupation by age groups

No. of persons

	Male									Female								
	10s	20s	30s	40s	50s	60s	70s	80s	Total	10s	20s	30s	40s	50s	60s	70s	80s	Total
Agriculture (Cultivator)			6	5	9	12	3	2	37		5	6	7	7	3	1		29
Shop owner				5		1			6				2					2
Business		3	2	2	1				8				1					1
Transport business			1	2					3									0
Contractor		1			1				2									0
Teacher			1	2					3		2	1	3	1				7
Office worker (Technical)	1	4	2	1					8									0
Office worker (Clerical)		1	9	0	1	1			12		4		1					5
Civil servant (Officer)			6	6	5				17			3	1	1				5
Village head				1					1									0
Army				1					1									0
Hotel employee	1	3	3	3					10									0
Shopkeeper,servant,cook			2	2					4			1						1
Daily laborer			1	1		1			3									0
Taxi driver		1	2	2					5									0
Others									0			1	1					2
Total	2	13	35	33	17	15	3	2	120	0	11	12	16	9	3	1	0	52

Source: GHS data collected by the Taoyaka onsite training in March 2017

Table 4. Working places of major occupations

No. of persons

	Male						Female						Grand total
	Office worker (Clerical)	Office worker (Technical)	Civil servant	Teacher	Hotel employee	Total	Office worker (Clerical)	Office worker (Technical)	Civil servant	Teacher	Hotel employee	Total	
K Village and surrounding areas	2		1		5	8			1	1		2	10
Nainital	4	3	11	1	4	23			3	2		5	28
Plain districts within the state	3	1	1			5	1		1	1		3	8
Other places within the state			1	2		3				2		2	5
Delhi and surrounding areas		2	1			3	2					2	5
Other places within India	1	1	1		1	4	2			1		3	7
Foreign countries	2	1				3						0	3
Total	12	8	16	3	10	49	5	0	5	7	0	17	66

Source: GHS data collected by the Taoyaka onsite training in March 2017

two hotels (a resort facility managed by external capital, and a Central Government Holiday Home) were constructed in the village (Picture 1). After 2007, two residential complexes were emerged just near the lake (Picture 2)

As for tourism development, the 2007 survey revealed the following points. Employment created by tourism to the village was notably limited. This is partly due to the villagers' critical attitude toward the idea of local women working at resort facilities in KT hamlet. There is concern that the development of tourism will have adverse effects on the local youth. Interviews with the villagers revealed that they held negative perceptions about tourism, and

were anxious about a loss of sacredness concerning the local lake. Villagers also complained about problems that existed in the buying and selling process of lands involved in tourism development.

In the 2017 survey, we asked a question that was not provided in the 2007 survey. That is, we asked whether villagers had gained profits from activities surrounding the development of tourism (Table 5). Only 12 households, which account for 16% of the total, answered that they had definitely gained profit from tourism. To be more specific, they pointed out that the benefits of tourism were employment, an increasing demand for agricultural prod-



Picture 1. Landscape of K Village near the lake in 2007
Source: Okahashi, September 2007



Picture 2. Landscape of K Village near the lake in 2017
Source: Okahashi, March 2017

Table 5. Did your household gain profits from activities surrounding the development of tourism or not?

	No. of households			
	Yes	No	No answer	Total
Brahmin	2	7	1	10
Rajput	8	42	2	52
Scheduled Caste (SC)	1	9	1	11
Muslim	0	1		1
Others	1	0		1
Total	12	59	4	75

Source: GHS data collected by the Taoyaka onsite training in March 2017

ucts, and business related to tourism. In addition, respondents stated that road maintenance and improvement was an incidental benefit.

On the contrary, local residents revealed that there were problems created by tourism. For instance, hotels did not adopt local farm commodities to serve their guests,

tourists did not buy products in local shops, and tourists disturbed the public peace. In particular, respondents emphasized that tourism resulted in negative effects, such as environmental deterioration due to improper development.

As these factors illustrate, there are many problems related to the development of tourism in K Village. The hotel that was built in the residential area of KT Hamlet has resulted in significantly negative impacts. To make the situation better, tourists are required to develop high morality of themselves. Moreover, KT Hamlet may benefit from contemplating the ways in which the balance between the quality of life for residents and the desirable development of tourism can be achieved. In that respect, it is worth considering the possibility of homestay tourism, as well as the direct sale of local commodities, such as agricultural products. Furthermore, promoting organic farm products would be effective in adding more value to the existing items for sale.

V. Changes in Agriculture and Its Potential

The 2007 survey results clarified the development of intensive vegetable cultivation and the recent expansion of dairy farming. Vegetable farming began in KT hamlet nearly 20 years ago, and was then the predominant form of agriculture there. Presently, vegetables are cultivated year-round in production cycles that last three years. Vegetable farming has become an important source of cash income. Although the vegetable farms came together to form a region, shipments were not collaborative throughout the hamlet, having been essentially left to the methods of individual farmers.

Dairy farming has experienced rapid growth since the 2004 establishment of dairy cooperatives in KT hamlet. Milk was jointly shipped through the union. Because trucks arrived at the village to collect the milk and transport it to the factory, the burden of shipping was relatively small for farmers. Joint shipment to factories has improved quality management as compared to the traditional shipment method. Against the background of this rapid development of dairy farming in KT hamlet, the use of cow manure as an organic fertilizer for vegetable cultivation has been another useful aspect.

We have analyzed changes in agriculture by making a comparison between 2007 and 2017. To begin with, we can clearly point out the decreasing number of agricultural workers and the aging of those population based on a figure which indicates a change in age distribution (Figure 1). The male agricultural workers has decreased con-

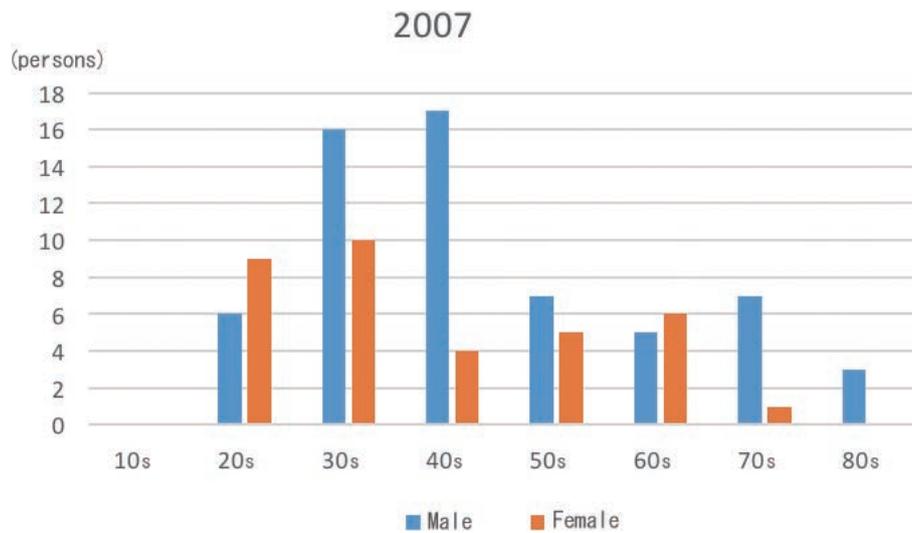


Figure 1-1. Age distribution of agricultural workers in 2007
Source: Field survey data collected in Sept. 2007 (Okahashi, 2016)

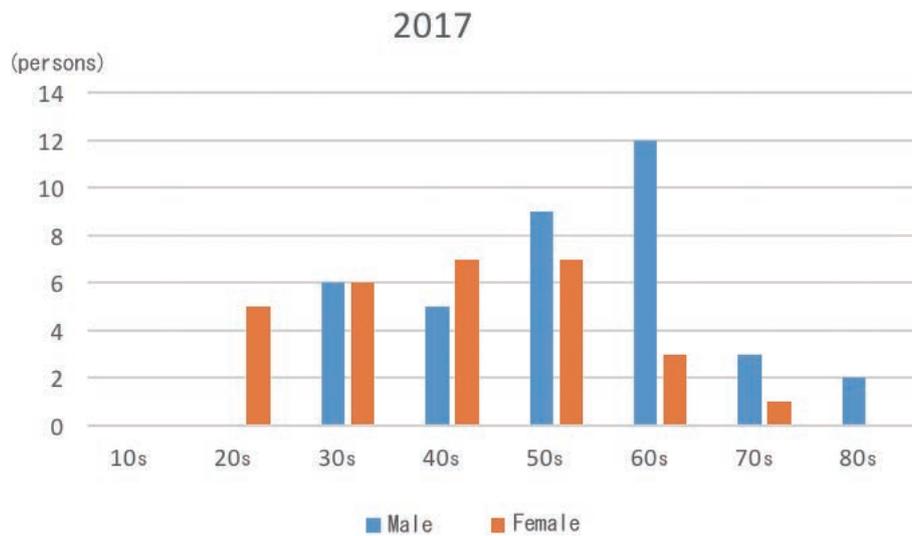


Figure 1-2. Age distribution of agricultural workers in 2017
Source: GHS data collected by the Taoyaka onsite training in March 2017

siderably. Moreover, the average age of individuals who primarily engaged in farming shifted from the 30s–40s to the 50s–60s.

Second, the mechanization of farming was an important change. Small tractors that were not seen in 2007 were being widely used 10 years later. There are now 17 tractors in KT Hamlet. We assume that the decrease in agricultural labor has accelerated this trend.

Third, irrigation is a little decreasing. While abundant irrigation has sustained vegetable cultivation in KT Hamlet, many villagers have found a noticeable change in the irrigation water. Of those surveyed, 29 households (accounting for 40% of the total) mentioned that there were certain changes in the irrigation water. To be more specific, 8 households claimed that the amount of rainfall has decreased, and 5 households replied that the amount

of irrigation water has also decreased. Since KT Hamlet has been deriving the full benefit of abundant irrigation water, we are concerned about the negative effects of weather changes in whole of the State of Uttarakhand as they apply to the village. In particular, this involves the decreasing of amount of rainfall.

Based on the factors mentioned above, we presume that vegetable cultivation will gradually decline in KT Hamlet. Although dairy farming in KT Hamlet has rapidly developed since 2000, the number of cows is decreasing. Additionally, only 6 households hope that their children succeed them in farm management, which deteriorates the situation. Farmers attribute their avoidance of wishing the succession of farming on their children to the lack of farmland, low profits, the indifference of their children, and a high educational background. Meanwhile, as the

quality of vegetables in KT Hamlet is highly evaluated, it is important to increase the value of those products. For example, it is possible to take advantage of this high value in relation to the tourist industry, such as in direct marketing and through consumption in places of accommodation. Moreover, there is room for considering the possibility of organic farming. However, although Uttarakhand state puts effort into establishing an “Organic State,” their policy has not affected K Village at all.

VI. Changes in the Lives of Villagers: The Economy, Education, and the Spread of Consumer Goods

As for the lives of villagers, the 2007 survey revealed the following points. First, many households in KT Hamlet relied on non-agricultural employment, while those with high incomes had a tendency to rely on large earned incomes. With recent economic growth, the number of salaried workers had been steadily rising. This has led to an increase in household incomes. Many households were engaged in agriculture, which helped compensate household economies. However, it is apparent that the disparity in the hierarchy of household incomes was derived from the wage gaps in non-agricultural employment.

Second, improvements in employment and household economies were in part achieved by a notably high level of education in KT Hamlet. Because of the abundant educational opportunities in the area, education had rapidly become more oriented to university-level education for both men and women. As a whole, higher education has helped people achieve stable employment, though a portion of people that received higher education were found to be unemployed.

Third, the use of consumer goods in KT hamlet was

fairly widespread. The spread of consumer goods indicated the rapid expansion of purchasing power, even though dissemination was accompanied by a significant gap among the various strata of the income hierarchy. By considering the income hierarchy, we can understand the differences in lifestyle among villagers.

The 2017 survey confirmed continuous progress in income, education, and the spread of consumer goods over a 10-year period.

As for income in 2017, we adopted the same classification criteria as Okahashi (2016). Those criteria were based on the nation’s income hierarchy, ranging from the highest to the lowest income. The income classes are as follows. There is the Rich Class, Middle Class I, Middle Class II, Deprived I, and Deprived II (Table 6). We examined the share of income for each class in 2007 and 2017 (Figure 2). Household income in KT Hamlet dramatically increased over the 10-year period. Middle Class I was one of the higher income classes, and expanded the greatest amount, moving from 23% to 38%. The Rich Class had newly emerged, though the number of the households were lim-

Table 6. Classification of households by income

No. of households

Annual household income (Rs.)	Income class	No. of households in 2017	Share (%)
1,000,000~	Rich class	3	4.3
200,000~1,000,000	Middle Class I	38	55.1
90,000~200,000	Middle Class II	17	24.6
45,000~90,000	Deprived I	9	13.0
0~45,000	Deprived II	2	2.9
Total		69	100.0

Note: 1 Rupee = 2.85 Yen (Sept. 2007)

Out of total 75 households, 6 households did not provide their income information

Source: GHS data collected by the Taoyaka onsite training in March 2017

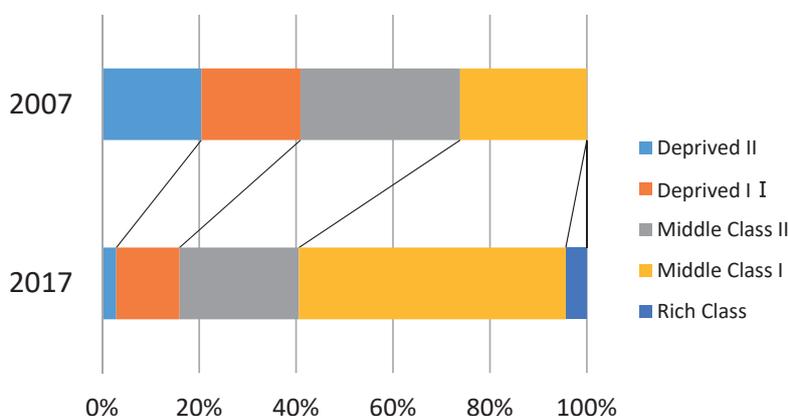


Figure 2. Composition of income classes in 2007 and 2017

Source: Field survey data collected in Sept. 2007 (Okahashi, 2016), GHS data collected by the Taoyaka onsite training in March 2017

ited. On the other hand, both of the Deprived classes saw a clear share reduction. As described in Okahashi (2016), the most crucial factor that contributed to high income households was the existence of a high-salaried person in the family.

The 2007 survey revealed a clear characteristic of the highly educated village that remained true over the 10-year period. That is, the village's educational level was high, and improved continuously (Figure 3). If we pay attention to villagers in their 20s (Table 7), 64% of males

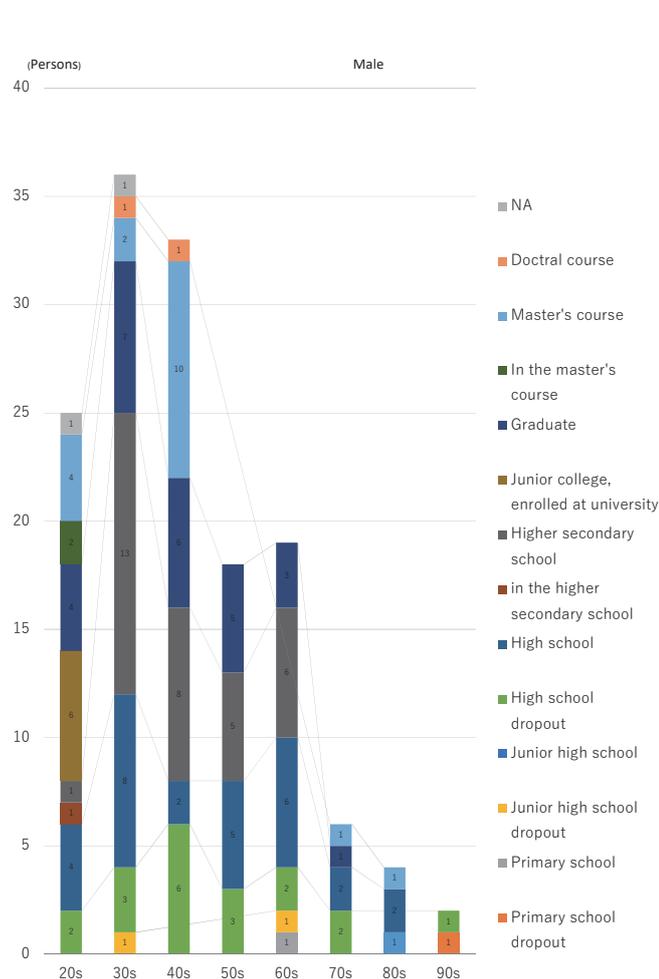


Figure 3-1. Educational career by age group (Male)
Source: GHS data collected by the Taoyaka onsite training in March 2017

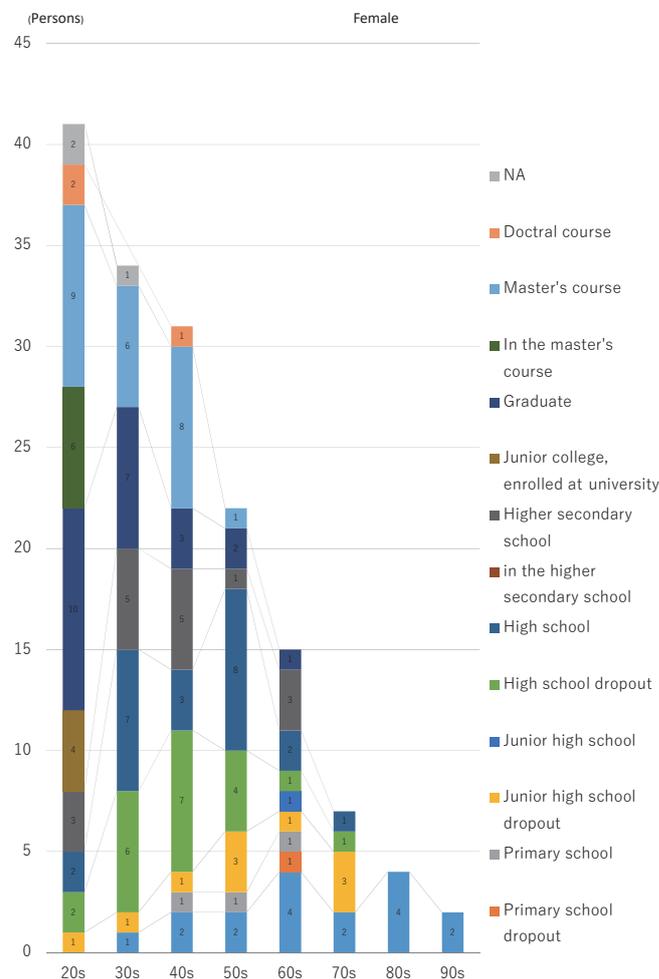


Figure 3-2. Educational career by age group (Female)
Source: GHS data collected by the Taoyaka onsite training in March 2017

Table 7. Educational career of 20 s by sex and caste

		No. of persons												
		Junior high school dropout	Junior high school	High school dropout	High school	in the higher secondary school	Higher secondary school	Junior college, enrolled at university	Graduate	In the master's course	Master's course	Doctoral course	NA	Total
Male	Brahman							2						2
	Rajput			1	4	1		4	4	2	4		1	21
	SC			1			1							2
	Sub total			2	4	1	1	6	4	2	4		1	25
Female	Brahman							1	3					5
	Rajput			1	2		1	1	6	5	9	2	1	28
	SC	1		1			1	2	1	1				7
	Sub total	1		2	2		2	4	10	6	9	2	2	40
Total		1		4	6	1	3	10	14	8	13	2	3	65

Source: GHS data collected by the Taoyaka onsite training in March 2017

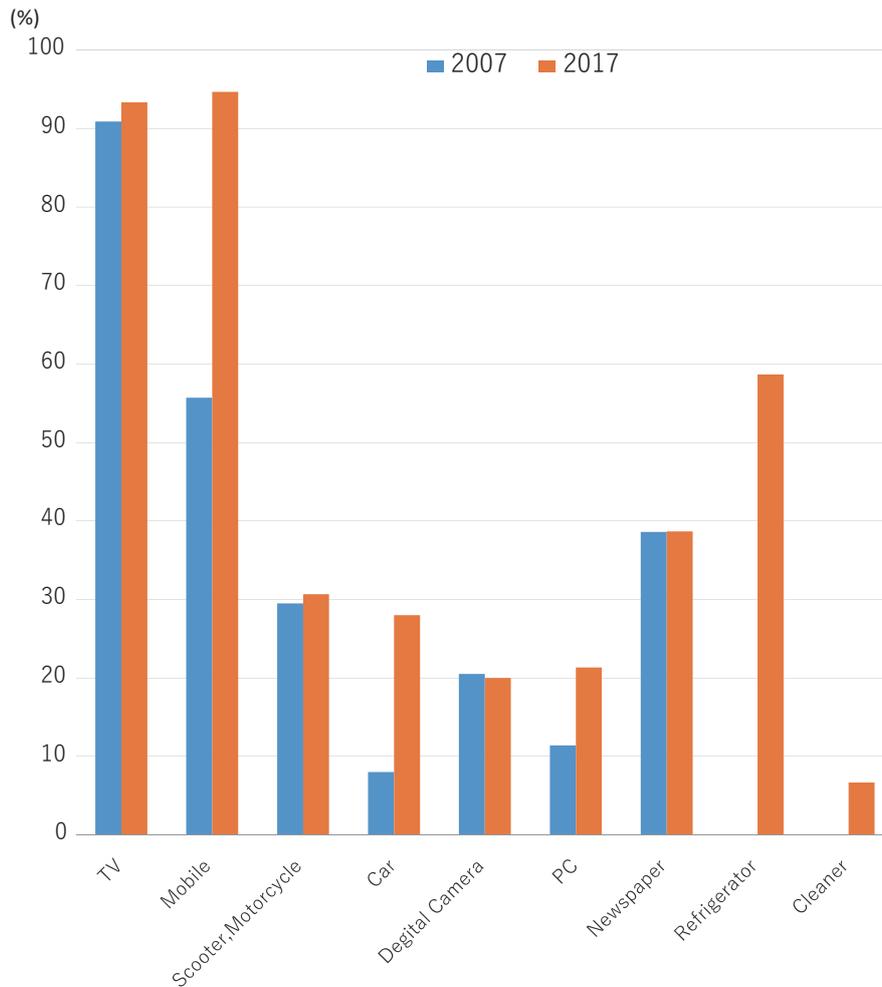


Figure 4. Penetration rate of consumer goods

Source: Field survey data collected in Sept. 2007 (Okahashi, 2016), GHS data collected by the Taoyaka onsite training in March 2017

and 76% of females were at the varsity level, or had graduated from college. It is surprising that 44% of the 20s in Scheduled Castes (SCs) shared the same type of career. When looking at the study from Okahashi (2016), we pointed out that a bias toward the higher castes was also connected to a higher level of education in the village. However, the younger generations of the lower castes are also striving to achieve a high level of education. This is a notable and important trend in rural India.

Consumer goods were widely used in KT hamlet. In the 10-year period between 2007 and 2017, important changes were observed in the penetration rate (Figure 4) An increase in car ownership is the most notable because the item may contribute to a significant lifestyle change. In 2007, 91% of villagers owned TVs, 56% owned mobile phones, and 39% received newspapers. In 2017, a dramatic change occurred in the penetration rate of mobile phones, reaching 95%. Now mobile phones became necessities of everyday life, even in the mountainous areas. On the other hand, newspaper readership remained the same.

Among other goods that exhibited a low penetration rate in 2007, car ownership significantly increased from 8% in 2007, to 28% in 2017. The 2007 computer penetration rate of 11% had doubled by 2017. However, bike, scooter, and digital camera ownership did not increase. The high penetration rate of refrigerators (59%) is noteworthy, though we have no ownership data from 2007.

VII. Conclusion

In this paper, we examined the recent socio-economic changes in a village of Uttarakhand that has shown rapid economic growth. Specifically, we conducted a 2007 survey in KT hamlet of K Village. We then selected the village as a focus of study in 2017. Therefore, our primary intention was to examine the changes that occurred over the 10-year period since our original investigation.

First, this study found significant changes in the employment structure as follows. The agricultural sector was still playing an important role in providing employ-

ment opportunities for rural areas, though the number of people who engaged in agricultural work was decreasing, especially in the younger generation. On the other hand, there was an increase of non-agricultural jobs, such as those in hotels, for young male villagers. As well, there was an increase in the opportunity for office work in Indian metropolitan areas (as well as overseas), and a self-employed group that engaged in the shop or transportation business.

Second, as for the benefits of tourism development in the village, some residents pointed out that it created employment, increased the demand for agricultural products, and aided businesses related to tourism. On the contrary, other residents revealed that there were also problems created by tourism. These residents emphasized that tourism created negative effects, such as the deterioration of the environment due to improper development. In that respect, it is worth considering the possibility of homestay tourism and the direct sale of local commodities, such as agricultural products.

Third, some problems appeared for agricultural sustainability, though production was fundamentally maintained until recently. For example, the number of farmers has slightly decreased, especially in the younger generation, and there was a reduction in the quantity of water available for irrigation because of less rainfall. However, agricultural mechanization was underway, which reduced the need for labor. Small tractors had been newly introduced into KT Hamlet. For the future development of agriculture, it is most important to develop a strategy for increasing the value of products.

Fourth, the 2017 survey confirmed that there was continuous progress in income, education, and the spread of consumer goods over the 10-year period. The household income of villagers increased remarkably, and relied on high-salaried workers. The clear image of a highly educated KT Hamlet was maintained after 10 years. The educational level of KT Hamlet was high, even in the lower castes. As for consumer goods, important change

occurred in the increase of car ownership, which has the potential to cause significant changes in the lifestyles of villagers.

Our 2017 reinvestigation of K Village intended to clarify the realities of development in rural India during a period of rapid economic growth. We were able to confirm the tendency for the village to continuously develop, though there were some issues to be solved. The results of our study of K Village in Uttarakhand suggest that the key factors in India's rural development are the expansion of non-agricultural employment, the development of commercial agriculture, and improvements in the level of education.

Acknowledgements

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Note

1. Okahashi (2016) is a revised English version of Okahashi et al. (2011) originally appeared in *Geographical Sciences*.

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