Supplementary materials

**Table A1** ﻿Summary of the survey constructs/variables, measures, expected direction toward intention, reliability test and validity test.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Constructs** | **Statements**  **Score 1-3** | **Expected direction** | **Reliability test**  **(Cronbach's coefficient alpha)** | **Validity test**  **(KMO and Bartlett's test)** | |
| **Sustainable harvesting behavior** |  |  | **0.71** | **0.78** |
| B1 | I would evaluate the quality of the grassland and decide whether to harvest or not. | + |  |  |
| B2 | I only harvest leaf herbs. | + |  |  |
| B3 | I would choose to use traditional tools to harvest herbs. | + |  |  |
| B4 | I would try to harvest for expensive herbs as much as possible. | \_ |  |  |
| B5 | I would harvest herbs in the same location. | \_ |  |  |
| B6 | I would harvest herbs in the spring. | - |  |  |
| B7 | I would harvest herbs from the top of the mountain. | - |  |  |
| B8 | I would harvest herbs from the holy mountain and holy water. | - |  |  |
| B9 | After digging herbs in the grassland, I would use backfill soil/grass to deal with the hole left after harvesting. | + |  |  |
| **Harvesting capability** |  |  | **0.72** | **0.74** |
| C1 | I have enough energy to harvest herbs. | + |  |  |
| C2 | I can harvest herbs all day in the grassland. | + |  |  |
| C3 | My body can bear the such work intensity of harvesting herbs. | + |  |  |
| C4 | I know how to harvest and handle after harvesting for herbs I have ever harvested on the grassland. | + |  |  |
| C5 | I know the distribution where the herbs I've harvested in the grassland. | + |  |  |
| C6 | I can find the herbs what I need on the grassland. | + |  |  |
| **Harvesting opportunity** |  |  | **0.70** | **0.74** |
| O1 | My family grassland is relatively close to my house. | + |  |  |
| O2 | The quantity of herbs in my family grassland is stable. | + |  |  |
| O3 | The soil in my family grassland would not become "black soil" after harvesting. | + |  |  |
| O4 | When the season, I have enough time to harvest. | + |  |  |
| O5 | Herbs are allowed to be harvested in the grassland in our village | + |  |  |
| O6 | We have been harvesting herbs in our village. | + |  |  |
| O7 | Other villagers go with me to harvesting herbs. | + |  |  |
| **Sustainable harvesting motivation** |  |  | **0.71** | **0.73** |
| M1 | I harvest herbs to sell to shop buyers. | - |  |  |
| M2 | I harvest herbs to sell to the Tibetan doctors in the village. | + |  |  |
| M3 | I harvest herbs to self-use when sangsol ceremony (Weisang). | + |  |  |
| M4 | I harvest herbs to cure myself or my family members. | + |  |  |
| M5 | I only wanted to harvest when I see herbs while herding. | - |  |  |
| M6 | I am used to harvesting herbs. | - |  |  |
| M7 | I see other people harvesting herbs and I want to harvest too. | - |  |  |
| **Perception of environmental change** |  |  | **0.66** | **0.75** |
| PEC1 | I feel that the migratory time from winter grassland to summer grassland has changed | + |  |  |
| PEC2 | I feel that the grass is green earlier than before | + |  |  |
| PEC3 | I feel that the wild animals on the mountain are getting closer to the village (Byg and Salick, 2009). | + |  |  |
| PEC4 | I feel that the mortality rate of yak calves has increased. | + |  |  |
| PEC5 | I feel the color of yak milk has become lighter. | + |  |  |
| PEC6 | I feel like the snow is melting earlier than before (Byg and Salick, 2009). | + |  |  |
| PEC7 | I feel that the number of sudden rainstorms is more frequently than before in spring and summer (Byg and Salick, 2009). | + |  |  |
| PEC8 | I feel the clothes I wear are thinner than before in winter (Byg and Salick, 2009). | + |  |  |
| **Ecological worldview** |  |  | **0.79** | **0.90** |
| EW1 | I think people and wild animals are equal(Li and Yang, 2020). | + |  |  |
| EW2 | I think people is just one part of the natural system (Li and Yang, 2020). | + |  |  |
| EW3 | I think everything on the holy mountain and water are sacred (Li and Yang, 2020). | + |  |  |
| EW4 | I think nature cannot be easily changed and destroyed(Wei, 2013). | + |  |  |
| EW5 | I think human beings must fully respect and adapt to nature in order to survive (Wei, 2013). | + |  |  |
| EW6 | I think directly or indirectly destroying grass and killing life is shameful (Wei, 2013). | + |  |  |
| EW7 | I think destroying nature would be punished (Li and Yang, 2020). | + |  |  |
| EW8 | I think harvesting plants would harm the insects on the plants (Li and Yang, 2020). | + |  |  |
| **Compliance to village rules and customs** |  |  | **0.76** | **0.90** |
| CVRC1 | People would abide by the rules that the village elders told us in our village (Niu, 2018). | + |  |  |
| CVRC2 | People would obey the taboos involving "sacred mountains and lakes" in our village(Niu, 2018). | + |  |  |
| CVRC3 | When someone violated some village rules, the old man would educate him in the village (Niu, 2018). | + |  |  |
| CVRC4 | The people would abide by the regulations of Aba Prefecture on plant harvesting in the village (Niu, 2018). | + |  |  |
| CVRC5 | We would decide which herbs to harvest according to the village regulations (Liu, 2014). | + |  |  |
| CVRC6 | Generally, people would abide by the village's regulations on grassland leasing in our village (Niu, 2018). | + |  |  |
| CVRC7 | People would listen to the temple's publicity advice on plant harvesting in our village (Liu, 2014). | + |  |  |

Note: All questions without references are designed by first author according to the results of pilot interview

**Table A2** Error checking during data transcription (Questionnaire manual record to digital storage).

|  |  |  |  |
| --- | --- | --- | --- |
| ***Sampling with replacement*** | ***Repeat sampling times*** | ***Number of questionnaires with errors*** | ***Probability (%)*** |
| One in ten | 1 | 12 | 13.04% |
| One in ten | 2 | 14 | 15.21% |
| One in ten | 3 | 6 | 6.52% |
| One in ten | 4 | 8 | 8.70% |
| One in ten | 5 | 2 | 2.17% |
| One in ten | 6 | 1 | 1.08% |
| One in ten | 7 | 3 | 3.26% |
| One in ten | 8 | 0 | 0 |

**Table A3** Model selection of GLMM on harvester’s willingness to harvest *N.jatamansi.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 5** | **Model 6** |
| (Intercept) | -1.47 | -1.71 | -2.23 | -2.00 | -2.49 | -2.96 |
| Yak roaming frelly (Ref. not freely) | + | + | NA | NA | NA | NA |
| Number of yaks | -0.29 | -0.29 | -0.24 | -0.23 | -0.22 | NA |
| Yak price | NA | NA | NA | NA | NA | NA |
| Number with junior high school education in family members | NA | NA | NA | NA | NA | NA |
| Potential harvesting income of *F. cirrhosa* | NA | NA | NA | NA | NA | NA |
| Potential harvesting income of *N. jatamansi* | + | + | + | + | + | + |
| Past harvesting experience of *F. cirrhosa* | NA | NA | NA | NA | NA | NA |
| Past harvesting experience of *N. jatamansi* | + | + | + | + | + | + |
| Harvester gender (Ref. female) | NA | + | + | NA | + | + |
| Number of monks in the family | NA | NA | NA | NA | NA | NA |
| Family grassland tenure (Ref. collective) | NA | NA | NA | NA | + | NA |
| Number of family expenditure categories | NA | NA | NA | NA | NA | NA |
| df | 6.00 | 7.00 | 6.00 | 5.00 | 7.00 | 5.00 |
| logLik | -125.30 | -124.29 | -125.41 | -126.62 | -124.65 | -126.77 |
| AICc | 262.82 | 262.88 | 263.03 | 263.40 | 263.58 | 263.70 |
| delta | 0.00 | 0.06 | 0.21 | 0.58 | 0.77 | 0.89 |
| weight | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  | **Model 7** | **Model 8** | **Model 9** | **Model 10** | **Model 11** | **Model 12** |
| (Intercept) | -1.98 | -1.52 | -2.72 | -1.70 | -3.19 | -1.11 |
| Yak roaming frelly (Ref. not freely) | + | NA | NA | + | NA | + |
| Number of yaks | -0.28 | -0.25 | NA | -0.27 | NA | -0.30 |
| Yak price | NA | NA | NA | NA | NA | NA |
| Number with junior high school education in family members | NA | NA | NA | NA | NA | NA |
| Potential harvesting income of *F. cirrhosa* | NA | NA | NA | NA | NA | NA |
| Potential harvesting income of *N. jatamansi* | + | + | + | + | + | + |
| Past harvesting experience of *F. cirrhosa* | NA | + | NA | NA | NA | + |
| Past harvesting experience of *N. jatamansi* | + | + | + | + | + | + |
| Harvester gender (Ref. female) | + | + | NA | NA | + | + |
| Number of monks in the family | NA | NA | NA | NA | NA | NA |
| Family grassland tenure (Ref. collective) | + | NA | NA | + | + | NA |
| Number of family expenditure categories | NA | NA | NA | NA | NA | NA |
| df | 8.00 | 7.00 | 4.00 | 7.00 | 6.00 | 8.00 |
| logLik | -123.69 | -124.75 | -127.88 | -124.79 | -125.86 | -123.79 |
| AICc | 263.75 | 263.80 | 263.85 | 263.86 | 263.94 | 263.96 |
| delta | 0.93 | 0.98 | 1.04 | 1.05 | 1.12 | 1.14 |
| weight | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  | **Model 13** | **Model 14** | **Model 15** | **Model 16** | **Model 17** | **Model 18** |
| (Intercept) | -1.97 | -0.93 | -2.23 | -2.18 | -2.71 | -2.93 |
| Yak roaming frelly (Ref. not freely) | + | + | NA | + | NA | NA |
| Number of yaks | -0.31 | -0.30 | -0.22 | -0.31 | -0.25 | NA |
| Yak price | NA | NA | NA | NA | NA | NA |
| Number with junior high school education in family members | NA | NA | NA | NA | NA | NA |
| Potential harvesting income of *F. cirrhosa* | NA | NA | NA | NA | NA | NA |
| Potential harvesting income of N. jatamansi | + | + | + | + | + | + |
| Past harvesting experience of *F. cirrhosa* | NA | + | NA | NA | NA | NA |
| Past harvesting experience of *N. jatamansi* | + | + | + | + | + | + |
| Harvester gender (Ref. female) | NA | NA | NA | + | + | NA |
| Number of monks in the family | NA | NA | NA | NA | NA | NA |
| Family grassland tenure (Ref. collective) | NA | NA | + | NA | NA | + |
| Number of family expenditure categories | 0.13 | NA | NA | 0.13 | 0.13 | NA |
| df | 7.00 | 7.00 | 6.00 | 8.00 | 7.00 | 5.00 |
| logLik | -124.86 | -124.90 | -125.96 | -123.88 | -124.96 | -127.10 |
| AICc | 264.00 | 264.09 | 264.14 | 264.14 | 264.22 | 264.35 |
| delta | 1.19 | 1.28 | 1.32 | 1.32 | 1.40 | 1.53 |
| weight | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  | **Model 19** | **Model 20** | **Model 21** | **Model 22** | **Model 23** | **Model 24** |
| (Intercept) | -1.37 | -1.36 | -2.51 | -2.49 | -1.37 | -1.59 |
| Yak roaming frelly (Ref. not freely) | NA | + | NA | + | + | + |
| Number of yaks | -0.24 | -0.29 | -0.25 | NA | -0.29 | -0.29 |
| Yak price | NA | NA | NA | NA | NA | NA |
| Number with junior high school education in family members | NA | -0.19 | NA | NA | NA | -0.19 |
| Potential harvesting income of *F. cirrhosa* | NA | NA | NA | NA | + | NA |
| Potential harvesting income of *N. jatamansi* | + | + | + | + | + | + |
| Past harvesting experience of *F. cirrhosa* | + | NA | NA | NA | NA | NA |
| Past harvesting experience of *N. jatamansi* | + | + | + | + | + | + |
| Harvester gender (Ref. female) | NA | NA | NA | NA | + | + |
| Number of monks in the family | NA | NA | NA | NA | NA | NA |
| Family grassland tenure (Ref. collective) | NA | NA | NA | NA | NA | NA |
| Number of family expenditure categories | NA | NA | 0.14 | NA | NA | NA |
| df | 6.00 | 7.00 | 6.00 | 5.00 | 8.00 | 8.00 |
| logLik | -126.10 | -125.10 | -126.14 | -127.18 | -124.09 | -124.09 |
| AICc | 264.42 | 264.48 | 264.49 | 264.52 | 264.55 | 264.55 |
| delta | 1.60 | 1.67 | 1.68 | 1.70 | 1.73 | 1.74 |
| weight | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  | **Model 25** | **Model 26** | **Model 27** | **Model 28** | **Model 29** | **Model 30** |
| (Intercept) | -1.17 | -2.08 | -1.86 | -3.00 | -2.74 | -2.36 |
| Yak roaming frelly (Ref. not freely) | + | NA | NA | NA | + | NA |
| Number of yaks | -0.28 | -0.24 | -0.23 | -0.24 | NA | NA |
| Yak price | NA | NA | NA | NA | NA | NA |
| Number with junior high school education in family members | NA | -0.22 | NA | NA | NA | NA |
| Potential harvesting income of *F. cirrhosa* | + | NA | + | NA | NA | NA |
| Potential harvesting income of *N. jatamansi* | + | + | + | + | + | + |
| Past harvesting experience of *F. cirrhosa* | NA | NA | NA | NA | NA | + |
| Past harvesting experience of *N. jatamansi* | + | + | + | + | + | + |
| Harvester gender (Ref. female) | NA | + | + | + | + | + |
| Number of monks in the family | NA | NA | NA | NA | NA | NA |
| Family grassland tenure (Ref. collective) | NA | NA | NA | + | NA | NA |
| Number of family expenditure categories | NA | NA | NA | 0.14 | NA | NA |
| df | 7.00 | 7.00 | 7.00 | 8.00 | 6.00 | 6.00 |
| logLik | -125.13 | -125.13 | -125.18 | -124.17 | -126.25 | -126.25 |
| AICc | 264.56 | 264.56 | 264.64 | 264.71 | 264.72 | 264.73 |
| delta | 1.74 | 1.74 | 1.83 | 1.90 | 1.90 | 1.91 |
| weight | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  | **Model 31** | **Model 32** | **Model 33** |  |  |  |
| (Intercept) | -2.02 | -1.43 | -1.88 |  |  |  |
| Yak roaming frelly (Ref. not freely) | NA | + | NA |  |  |  |
| Number of yaks | -0.27 | -0.29 | -0.23 |  |  |  |
| Yak price | NA | NA | NA |  |  |  |
| Number with junior high school education in family members | NA | NA | NA |  |  |  |
| Potential harvesting income of *F. cirrhosa* | NA | NA | NA |  |  |  |
| Potential harvesting income of *N. jatamansi* | + | + | + |  |  |  |
| Past harvesting experience of *F. cirrhosa* | + | NA | + |  |  |  |
| Past harvesting experience of *N. jatamansi* | + | + | + |  |  |  |
| Harvester gender (Ref. female) | + | NA | + |  |  |  |
| Number of monks in the family | NA | + | NA |  |  |  |
| Family grassland tenure (Ref. collective) | NA | NA | + |  |  |  |
| Number of family expenditure categories | 0.15 | NA | NA |  |  |  |
| df | 8.00 | 7.00 | 8.00 |  |  |  |
| logLik | -124.18 | -125.24 | -124.21 |  |  |  |
| AICc | 264.73 | 264.77 | 264.79 |  |  |  |
| delta | 1.91 | 1.95 | 1.98 |  |  |  |
| weight | 0.01 | 0.00 | 0.00 |  |  |  |

**Table A4** Model selection of GLMM on harvester’s willingness to harvest *F.cirrhosa*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Model 1** | **Model 2** | **Model 3** | **Model 4** | **Model 5** | **Model 6** |
| (Intercept) | -0.67 | -0.33 | -0.49 | -1.67 | -0.19 | -0.56 |
| Yak roaming freely (Ref. not freely) | NA | NA | NA | NA | NA | NA |
| Number of yaks | NA | NA | NA | NA | NA | NA |
| Yak price | + | + | + | + | + | + |
| Number with junior high school education in family members | NA | NA | NA | NA | NA | NA |
| Potential harvesting income of *F. cirrhosa* | + | + | + | + | + | + |
| Potential harvesting income of *N. jatamansi* | NA | NA | NA | NA | + | + |
| Past harvesting experience of *F. cirrhosa* | + | + | + | + | + | + |
| Past harvesting experience of *N. jatamansi* | NA | NA | NA | NA | NA | NA |
| Harvester gender (Ref. female) | + | NA | + | NA | NA | + |
| Number of monks in the family | NA | NA | + | NA | NA | NA |
| Family grassland tenure (Ref. collective) | + | + | + | + | + | + |
| Number of family expenditure categories | NA | NA | NA | 0.32 | NA | NA |
| df | 8.00 | 7.00 | 9.00 | 8.00 | 8.00 | 9.00 |
| logLik | -47.77 | -48.91 | -46.86 | -47.96 | -48.02 | -47.00 |
| AICc | 111.92 | 112.12 | 112.18 | 112.29 | 112.42 | 112.48 |
| delta | 0.00 | 0.19 | 0.26 | 0.37 | 0.50 | 0.56 |
| weight | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  | **Model 7** | **Model 8** | **Model 9** | **Model 10** | **Model 11** | **Model 12** |
| (Intercept) | -2.13 | -1.82 | -1.51 | -0.72 | -0.55 | -2.53 |
| Yak roaming freely (Ref. not freely) | NA | NA | NA | NA | NA | NA |
| Number of yaks | NA | NA | NA | NA | NA | NA |
| Yak price | + | + | + | + | + | NA |
| Number with junior high school education in family members | 0.74 | NA | NA | 0.67 | 0.63 | NA |
| Potential harvesting income of *F. cirrhosa* | + | + | + | + | + | + |
| Potential harvesting income of *N. jatamansi* | NA | NA | + | NA | NA | + |
| Past harvesting experience of *F. cirrhosa* | + | + | + | + | + | + |
| Past harvesting experience of *N. jatamansi* | NA | NA | NA | NA | NA | NA |
| Harvester gender (Ref. female) | NA | + | NA | + | NA | NA |
| Number of monks in the family | NA | NA | NA | + | NA | NA |
| Family grassland tenure (Ref. collective) | + | + | + | + | + | + |
| Number of family expenditure categories | 0.37 | 0.28 | 0.31 | NA | NA | 0.36 |
| df | 9.00 | 9.00 | 9.00 | 10.00 | 8.00 | 7.00 |
| logLik | -47.05 | -47.10 | -47.14 | -46.13 | -48.23 | -49.28 |
| AICc | 112.58 | 112.67 | 112.75 | 112.84 | 112.84 | 112.85 |
| delta | 0.66 | 0.75 | 0.83 | 0.92 | 0.92 | 0.92 |
| weight | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  | **Model 13** | **Model 14** | **Model 15** | **Model 16** | **Model 17** | **Model 18** |
| (Intercept) | -0.15 | -0.84 | -0.51 | -1.04 | -1.56 | -0.16 |
| Yak roaming freely (Ref. not freely) | NA | NA | NA | NA | NA | NA |
| Number of yaks | NA | NA | NA | NA | NA | NA |
| Fell sale price of yak | + | + | + | NA | + | + |
| Number with junior high school education in family members | NA | 0.56 | NA | NA | NA | NA |
| Potential harvesting income of *F. cirrhosa* | + | + | + | + | + | + |
| Potential harvesting income of *N. jatamansi* | NA | NA | NA | + | NA | NA |
| Past harvesting experience of *F. cirrhosa* | + | + | + | + | + | + |
| Past harvesting experience of *N. jatamansi* | + | NA | + | NA | NA | NA |
| Harvester gender (Ref. female) | NA | + | + | NA | + | NA |
| Number of monks in the family | NA | NA | NA | NA | + | + |
| Family grassland tenure (Ref. collective) | + | + | + | + | + | + |
| Number of family expenditure categories | NA | NA | NA | NA | 0.26 | NA |
| df | 8.00 | 9.00 | 9.00 | 6.00 | 10.00 | 8.00 |
| logLik | -48.29 | -47.24 | -47.25 | -50.42 | -46.31 | -48.42 |
| AICc | 112.95 | 112.96 | 112.97 | 113.06 | 113.19 | 113.21 |
| delta | 1.02 | 1.04 | 1.05 | 1.14 | 1.27 | 1.29 |
| weight | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  | **Model 19** | **Model 20** | **Model 21** | **Model 22** | **Model 23** | **Model 24** |
| (Intercept) | -0.43 | -2.25 | -1.90 | -0.38 | -1.68 | -1.99 |
| Yak roaming freely (Ref. not freely) | NA | NA | NA | NA | NA | NA |
| Number of yaks | NA | NA | NA | NA | NA | NA |
| Yak price | + | + | + | + | + | + |
| Number with junior high school education in family members | NA | 0.67 | 0.70 | 0.60 | NA | 0.82 |
| Potential harvesting income of *F. cirrhosa* | + | + | + | + | + | + |
| Potential harvesting income of *N. jatamansi* | + | NA | + | + | + | NA |
| Past harvesting experience of *F. cirrhosa* | + | + | + | + | + | + |
| Past harvesting experience of *N. jatamansi* | NA | NA | NA | NA | NA | NA |
| Harvester gender (Ref. female) | + | + | NA | NA | + | NA |
| Number of monks in the family | + | NA | NA | NA | NA | + |
| Family grassland tenure (Ref. collective) | + | + | + | + | + | + |
| Number of family expenditure categories | NA | 0.33 | 0.35 | NA | 0.27 | 0.37 |
| df | 10.00 | 10.00 | 10.00 | 9.00 | 10.00 | 10.00 |
| logLik | -46.33 | -46.36 | -46.37 | -47.43 | -46.39 | -46.42 |
| AICc | 113.23 | 113.30 | 113.32 | 113.33 | 113.36 | 113.41 |
| delta | 1.31 | 1.37 | 1.40 | 1.41 | 1.44 | 1.49 |
| weight | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
|  | **Model 25** | **Model 26** | **Model 27** | **Model 28** | **Model 29** | **Model 30** |
| (Intercept) | -2.05 | -1.49 | -0.35 | -0.42 | -0.71 | -1.35 |
| Yak roaming freely (Ref. not freely) | NA | NA | NA | NA | NA | NA |
| Number of yaks | NA | NA | NA | NA | NA | NA |
| Yak price | + | + | + | + | + | + |
| Number with junior high school education in family members | 0.77 | NA | 0.66 | 0.72 | 0.55 | NA |
| Potential harvesting income of *F. cirrhosa* | + | + | + | + | + | + |
| Potential harvesting income of *N. jatamansi* | NA | NA | NA | NA | + | NA |
| Past harvesting experience of *F. cirrhosa* | + | + | + | + | + | + |
| Past harvesting experience of *N. jatamansi* | NA | NA | + | NA | NA | + |
| Harvester gender (Ref. female) | + | NA | NA | NA | + | NA |
| Number of monks in the family | + | + | NA | + | NA | NA |
| Family grassland tenure (Ref. collective) | + | + | + | + | + | + |
| Number of family expenditure categories | 0.31 | 0.32 | NA | NA | NA | 0.28 |
| df | 11.00 | 9.00 | 9.00 | 9.00 | 10.00 | 9.00 |
| logLik | -45.37 | -47.49 | -47.54 | -47.57 | -46.52 | -47.59 |
| AICc | 113.44 | 113.44 | 113.55 | 113.60 | 113.61 | 113.65 |
| delta | 1.52 | 1.52 | 1.63 | 1.68 | 1.69 | 1.73 |
| weight | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 |
|  | **Model 31** | **Model 32** | **Model 33** | **Model 34** | **Model 35** | **Model 36** |
| (Intercept) | -1.39 | -0.37 | -0.49 | -0.35 | -0.67 | -0.05 |
| Yak roaming freely (Ref. not freely) | NA | NA | + | NA | NA | NA |
| Number of yaks | NA | NA | NA | -0.10 | NA | NA |
| Yak price | NA | + | + | + | + | + |
| Number with junior high school education in family members | NA | NA | NA | NA | 0.60 | NA |
| Potential harvesting income of *F. cirrhosa* | + | + | + | + | + | + |
| Potential harvesting income of *N. jatamansi* | + | NA | NA | NA | NA | + |
| Past harvesting experience of *F. cirrhosa* | + | + | + | + | + | + |
| Past harvesting experience of *N. jatamansi* | NA | + | NA | NA | + | NA |
| Harvester gender (Ref. female) | + | + | + | + | + | NA |
| Number of monks in the family | NA | + | NA | NA | NA | + |
| Family grassland tenure (Ref. collective) | + | + | + | + | + | + |
| Number of family expenditure categories | NA | NA | NA | NA | NA | NA |
| df | 7.00 | 10.00 | 9.00 | 9.00 | 10.00 | 9.00 |
| logLik | -49.69 | -46.55 | -47.68 | -47.69 | -46.65 | -47.71 |
| AICc | 113.67 | 113.68 | 113.82 | 113.85 | 113.87 | 113.88 |
| delta | 1.75 | 1.76 | 1.90 | 1.93 | 1.95 | 1.96 |
| weight | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
|  | **Model 37** | **Model 38** | **Model 39** | **Model 40** |  |  |
| (Intercept) | -2.71 | -2.91 | -1.27 | -1.77 |  |  |
| Yak roaming freely (Ref. not freely) | NA | NA | NA | NA |  |  |
| Number of yaks | NA | NA | -0.18 | NA |  |  |
| Yak price | NA | NA | + | + |  |  |
| Number with junior high school education in family members | NA | NA | NA | 0.75 |  |  |
| Potential harvesting income of *F. cirrhosa* | + | + | + | + |  |  |
| Potential harvesting income of *N. jatamansi* | + | NA | NA | NA |  |  |
| Past harvesting experience of *F. cirrhosa* | + | + | + | + |  |  |
| Past harvesting experience of *N. jatamansi* | NA | NA | NA | + |  |  |
| Harvester gender (Ref. female) | + | NA | NA | NA |  |  |
| Number of monks in the family | NA | NA | NA | NA |  |  |
| Family grassland tenure (Ref. collective) | + | + | + | + |  |  |
| Number of family expenditure categories | 0.33 | 0.37 | 0.37 | 0.32 |  |  |
| df | 8.00 | 6.00 | 9.00 | 10.00 |  |  |
| logLik | -48.76 | -50.84 | -47.72 | -46.67 |  |  |
| AICc | 113.89 | 113.90 | 113.91 | 113.92 |  |  |
| delta | 1.97 | 1.98 | 1.99 | 1.99 |  |  |
| weight | 0.00 | 0.00 | 0.00 | 0.00 |  |  |

**Table A5** Summary of GLMM averaged model estimate results. Significance: \*\*\*= *p* ≤0.001; \*\* = *p* ≤0.01; \* = *p* ≤0.05.

|  |  |  |
| --- | --- | --- |
| ***Covariate*** | ***Model 1 Estimate (SE)***  *N.jatamansi* | ***Model 2 Estimate (SE)***  *F.cirrhosa* |
| Intercept | -2.03\* (0.90) | -1.07\*\* (1.29) |
| Yak roaming freely (Ref. not freely) | -0.25 (0.36) | -0.00 (0.09) |
| Number of yaks | 0.21 (0.17) | -0.00 (0.05) |
| Yak price increased (Ref. no change) | - | -1.86 (1.06) |
| Yak price decreased (Ref. no change) | - | -0.85 (0.86) |
| Number with junior high school education in family members | -0.01 (0.07) | 0.22 (0.41) |
| Potential harvesting income of *F. cirrhosa* | -0.03 (0.20) | 2.08\*\* (0.66) |
| Potential harvesting income of *N. jatamansi* | 2.54\*\*\* (0.35) | -0.11 (0.38) |
| Past harvesting experience of *F. cirrhosa* | -0.14 (0.42) | 4.09\*\*\* (0.71) |
| Past harvesting experience of *N. jatamansi* | 2.91\*\*\* (0.35) | -0.30 (0.57) |
| Harvester gender (Ref. female) | 0.31 (0.38) | 0.46 (0.66) |
| Number of monks in the family | -0.00 (0.05) | -0.20 (0.45) |
| Family grassland tenure (Ref. collective) | 0.15 (0.37) | -1.82\*\* (0.71) |
| Number of family expenditure categories | 0.02 (0.07) | 0.13 (0.21) |

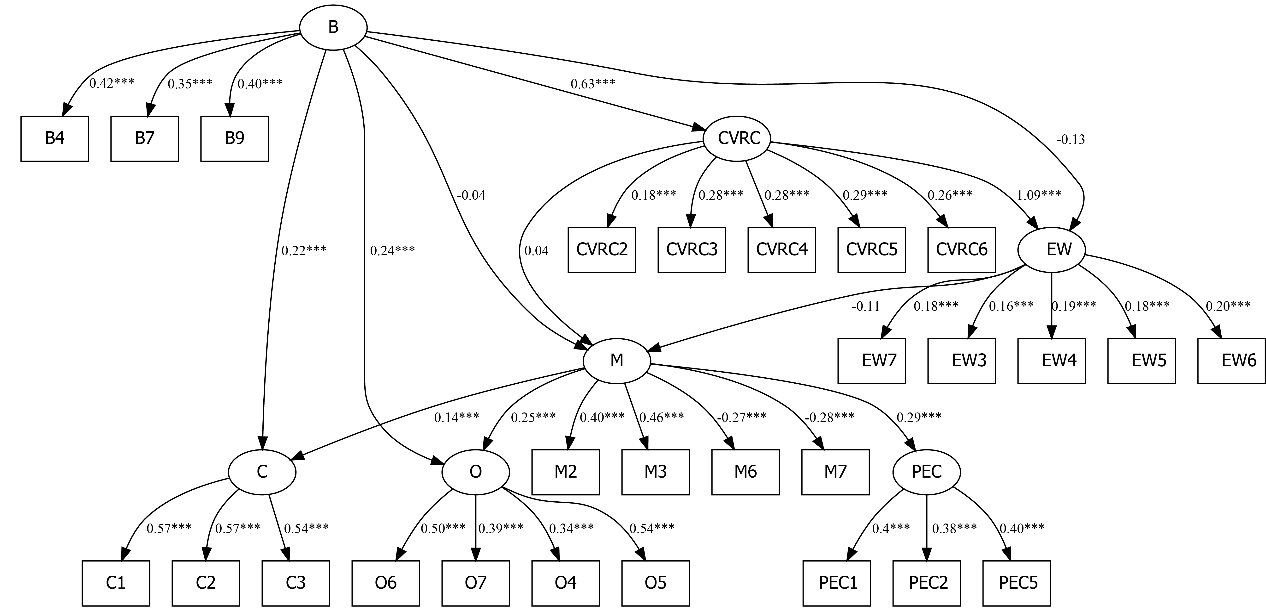
**Table A6** the convergent validity of measurement model

|  |  |  |  |
| --- | --- | --- | --- |
| **Constructs** | **Factor loadings (FL)** | **composite reliability (CR)** | **Average variance extracted（AVE）** |
| **Recommended value** | ≥0.6 | ≥0.5 | ≥0.5 |
| **Behavior** |  | **0.75** | **0.50** |
| B4 | 0.64 |  |  |
| B7 | 0.73 |  |  |
| B9 | 0.74 |  |  |
| **Capability** |  | **0.82** | **0.61** |
| C1 | 0.82 |  |  |
| C2 | 0.75 |  |  |
| C3 | 0.77 |  |  |
| **Opportunity** |  | **0.78** | **0.50** |
| O4 | 0.64 |  |  |
| O5 | 0.80 |  |  |
| O6 | 0.69 |  |  |
| O7 | 0.61 |  |  |
| **Motivation** |  | **0.82** | **0.53** |
| M2 | -0.76 |  |  |
| M3 | -0.79 |  |  |
| M6 | 0.70 |  |  |
| M7 | 0.68 |  |  |
| **Perception of environment change** |  | **0.75** | **0.50** |
| PEC1 | 0.62 |  |  |
| PEC2 | 0.66 |  |  |
| PEC3 | 0.83 |  |  |
| **Ecological worldview** |  | **0.89** | **0.62** |
| EW3 | 0.76 |  |  |
| EW4 | 0.80 |  |  |
| EW5 | 0.83 |  |  |
| EW6 | 0.76 |  |  |
| EW7 | 0.78 |  |  |
| **Compliance to village rules and customs** |  | **0.83** | **0.50** |
| CVRC 2 | 0.67 |  |  |
| CVRC 3 | 0.66 |  |  |
| CVRC 4 | 0.75 |  |  |
| CVRC 5 | 0.69 |  |  |
| CVRC 6 | 0.78 |  |  |

**Table A7** Goodness-of-fit indices of the structural models.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Variable** | **X2/df** | **RMSEA** | **SRMR** | **TLI** | **CFI** | **P** |
| **Model 1** | the harvesting behavior and motivation, harvesting capability, harvesting opportunity, perception of environment change, compliance to village rules and customs and ecological worldview | 3.85 | 0.05 | 0.08 | 0.81 | 0.82 | 0.00 |
| **Model 2** | the harvesting behavior, harvesting capability, harvesting opportunity, perception of environment change, compliance to village rules and customs and ecological worldview | 4.30 | 0.06 | 0.09 | 0.81 | 0.83 | 0.00 |
| **Model 3** | the harvesting motivation, harvesting capability, harvesting opportunity, perception of environment change, compliance to village rules and customs and ecological worldview | 16.00 | 0.06 | 0.07 | 0.85 | 0.87 | 0.00 |
| **Recommended value** |  | ≤5.00 | ≤0.06 | ≤0.10 | ≥0.90 | ≥0.90 | ≤0.01 |

**Figure A1** Visualization of Structural Equation Model 1



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