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Livelihood Goals and Its Impact on Livelihood Strategy in Rural China

Chen Chen, Christopher Gan

Faculty of Agribusiness and Commerce, Lincoln University

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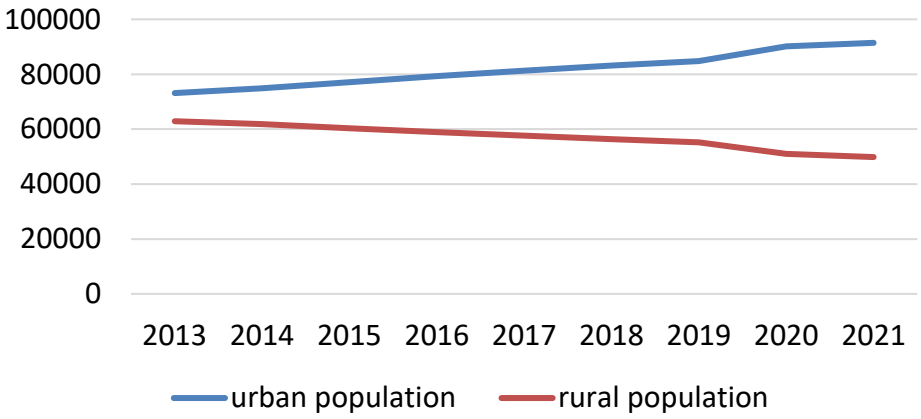
Outline

- I. Background and Problem statement
- II. Literature review
- III. Methodology
- IV. Results and conclusion
- V. Contributions and limitations

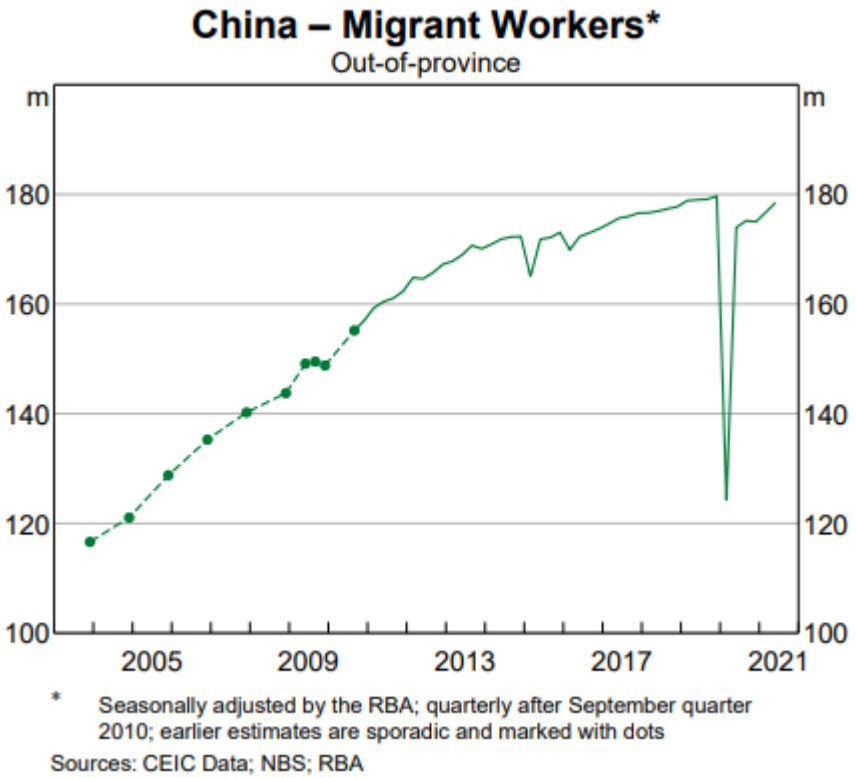
I. Background and Problem statement

➢ China's macro-economy development

Comparison of urban population and rural population in China (unit: 10 thousand)



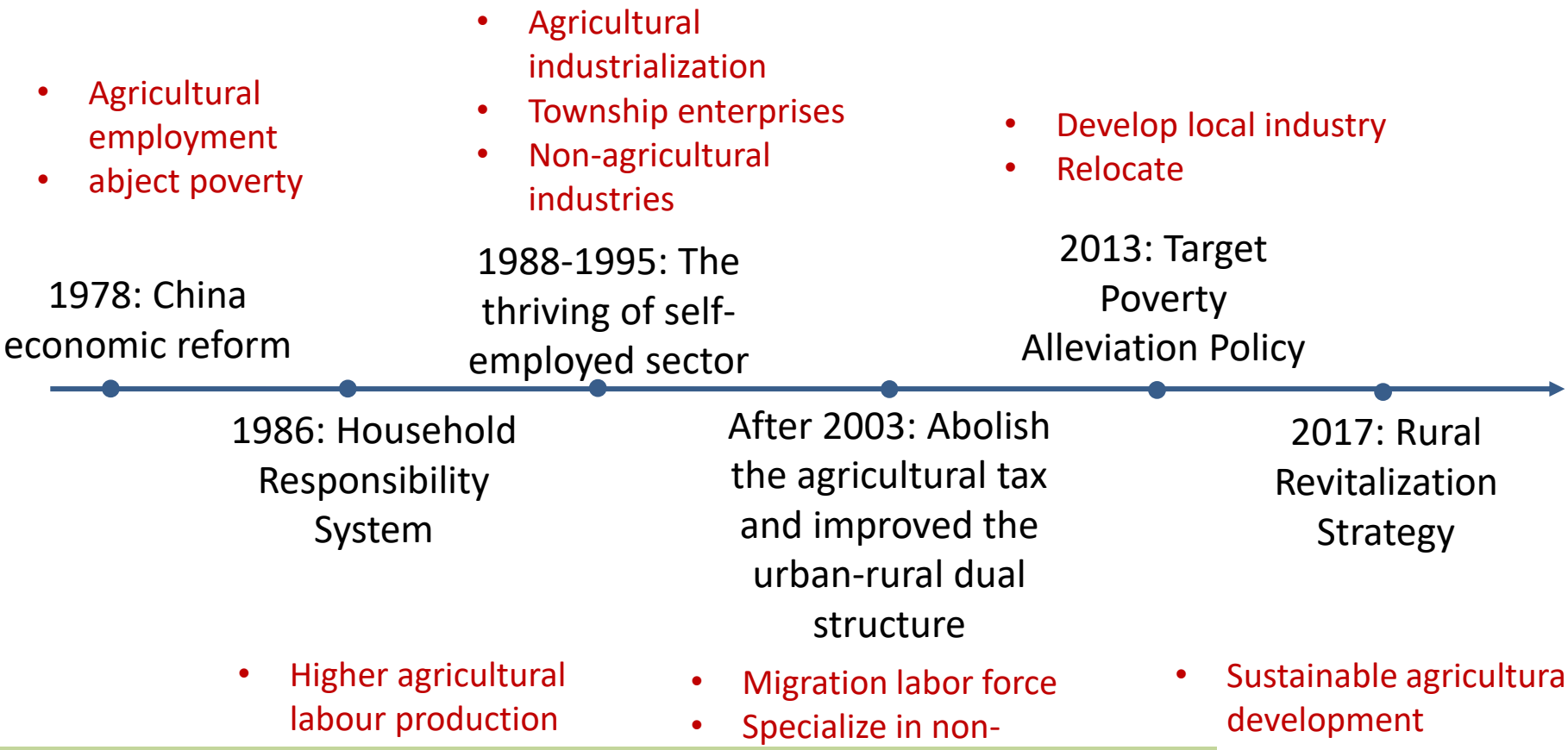
Source: National Bureau of Statistics of China.



Source: Kemp & Spearritt (2021).

I. Background and Problem statement

➢ **Livelihood strategy evolution of Chinese rural households**



- ***Why rural households choose different livelihood strategies?***
- ***What are the factors influencing their selections?***

II. Literature Review

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➢ Factors of livelihood strategy selection at the macro level

Institutional policy	• Formal institutions (Hua et al., 2017; Kassie, 2017; Helmy, 2020) and informal institutions (such as social culture and social structure, social capital) (e.g., Hao & Lebailly, 2011; Sene-Harper et al., 2019). • Paths: (1) affect LS selection directly (e.g. Tian et al., 2016; Kassie, 2017). (2) affect LS selection through livelihood assets (Subakanya et al., 2018; Liu et al., 2020) (3) mediate the relationship between livelihood assets and LS.
Resource environment	• Climate change and the natural shock (Kuang et al., 2019; Wei et al., 2019; Sunny et al., 2020). • Resource environment does not directly affect LS selection, but through the impact of livelihood assets stock to affect LS selection (e.g., Carney, 1998; De Haan, 2000; Van den Berg, 2010; Kuang et al., 2019).
Technology (application)	• Good transportation facilities will help farmers to access the market, obtain non-agricultural job opportunities, entrepreneurship, technology and information (Zhang et al., 2019). • basic production technology application (e.g., improved varieties, more effective irrigation technology) can help to increase agricultural efficiency and production (Van den Broeck & Maertens, 2017) to let more household stay at agricultural livelihood strategy.

II. Literature Review

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➢ Factors of livelihood strategy selection at the micro level

Livelihood assets	• Natural, social capital and human assets, have positive impacts on rural households' adaptation strategy (Kuang et al., 2019). • Financial capital is the key to promoting tourism livelihood but impede agricultural household from participating in other livelihood activities (Huang et al., 2021).
Characteristics of household	• Land renting-in and land expropriation negatively affect rural households' upward mobility in livelihood strategy (LS) in rural China (Zhang et al., 2019). • Family life cycle stage influence LS selection and diversification (Xu et al., 2020; Hackman & Kramer, 2021).
Characteristics of household head	• Personal perceptions and household attitudes positively influence LS decisions (Liu & Liu, 2016). • Household head's risk expectations in LS choices and find that farmers' livelihoods and risk expectations exhibit inconsistent effects on LS choices on homestead withdrawal policy (Liang et al., 2022).

II. Literature Review

➢ Definition of Livelihood strategy (LS)

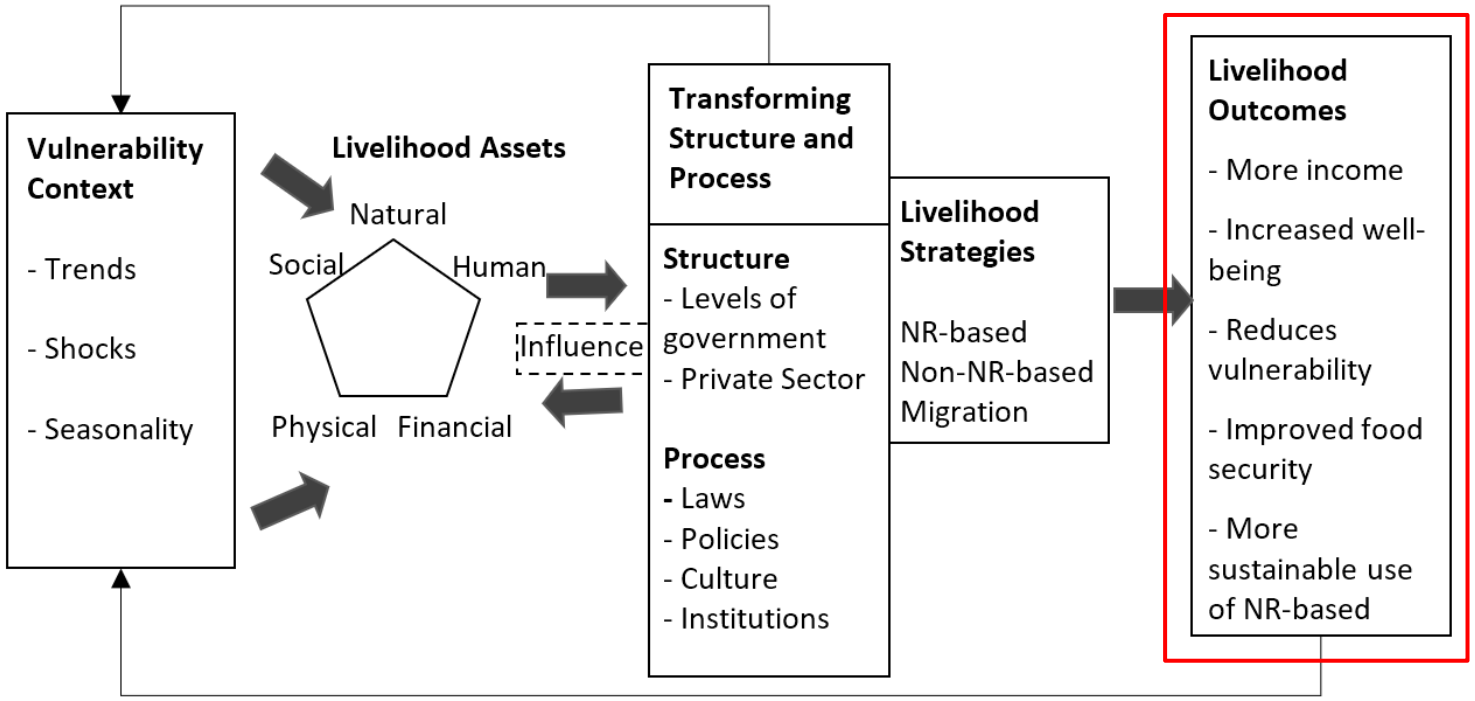
- A series of activities and choices for people to achieve their livelihood goals, such as production activities, investment strategy, fertility arrangements, and reproduction choices (DFID,1999; FAO, 2005; He et al., 2013; Buchenrieder, 2007; Liu et al., 2018)
- A behaviour pattern adopted by asset allocation for realizing livelihood goals (Ellis, 2000; Khatiwada et al., 2017; Hao & Lebailly, 2011).

- ***Does livelihood goal is the motivation of livelihood strategy selection?***
- ***How and what extent livelihood goal affect rural households' livelihood strategy selection?***
  - ***The measurement of livelihood goal***
  - ***The relationship between livelihood goal and livelihood strategy selection***

II. Literature Review

➢ Is livelihood goal same as the livelihood outcomes?

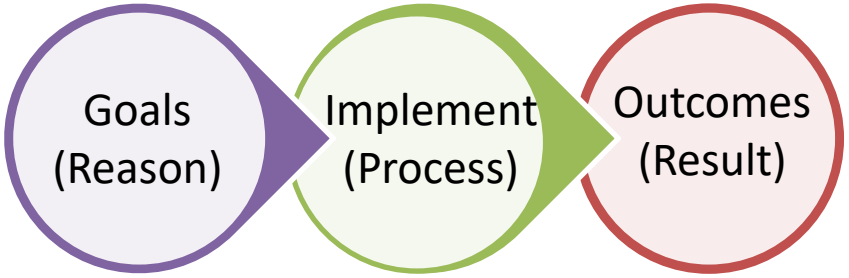
- Previous studies indicate that the goals of implementing household strategy are to diversify risk and protect well-being (Whitehead, 2002), improve income (Démurger et al., 2010), increase social class (Wu et al., 2019), and reduce vulnerability (Helmy, 2020).
- The classic Sustainable Livelihood Framework of DFID (1999)



II. Literature Review

➢ **Is livelihood goal same as the livelihood outcomes?**

- Outcomes differ from goals (Gordon et al., 2001).
- Goals affect outcomes because goal-directed behaviour regulates processes (Ford, 1992; Lee & Hanna, 2015).
- Household's livelihood goal can be viewed as the reason or the purpose that the household implements livelihood strategy.



II. Literature Review

➢ Classification of Livelihood Goals

Perspective	Classification	Potential indicators	Citation
Demand and behaviour	-Survival goal - Security goal - Self-respect goal	- Engel's coefficient; diversification index; cash crops; livestock and food stores; productive assets (such as seeds and ploughs); - Asset accumulation, such as non-agricultural productive assets (sale of stores, investment, savings), non-productive assets (radio or jewellery, and intangible assets). - Greater involvement in community and/or family decision-making; the level of social capital.	Chambers (1989); Gordon et al. (2001)
Utility / preference	-Profit maximisation -Risk mitigation -Drudgery aversion	- The traditional production factors (land, capital and labour) - Risk preference - Income and leisure time	Ellis (1992)
Wellbeing		Self-esteem, security, happiness, power, as well as more conventionally measured material concerns.	Chambers (1995)
Multiple preferences	Maximising returns and minimising risk	- Returns or work available - Allocation of resources across several, non-co-varying sectors helps to spread risk and manage uncertainty. - Complementarity work (e.g., home-based, part-time work may complement home-based, part-time domestic chores)	Start and Johnson (2004)
Peasant Theories	- Profit Maximization - Utility Maximization - Risk-averse - Income maximization	-The proportion of net income to gross income -Diversification index	Mendola (2005); Deng (2006)

Source: Author's configuration based on the literature review.

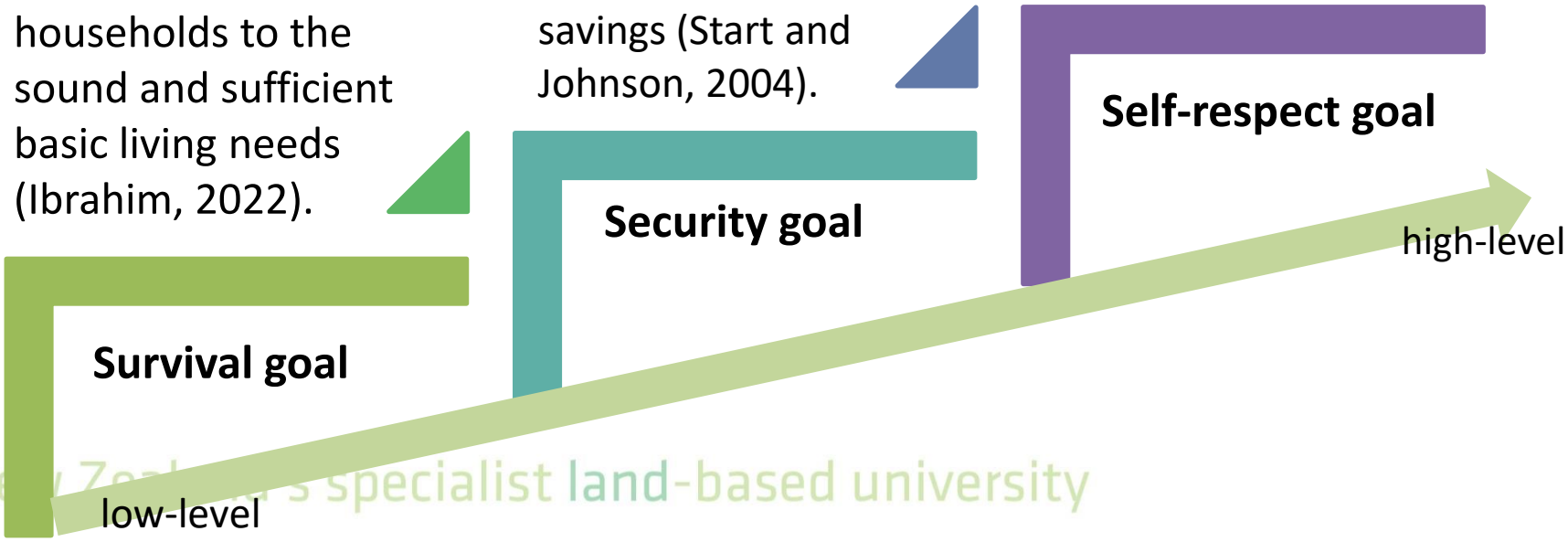
II. Literature Review

- **Three kinds of livelihood goals (LG)**

Based on stable subsistence, including the desire of households to the sound and sufficient basic living needs (Ibrahim, 2022).

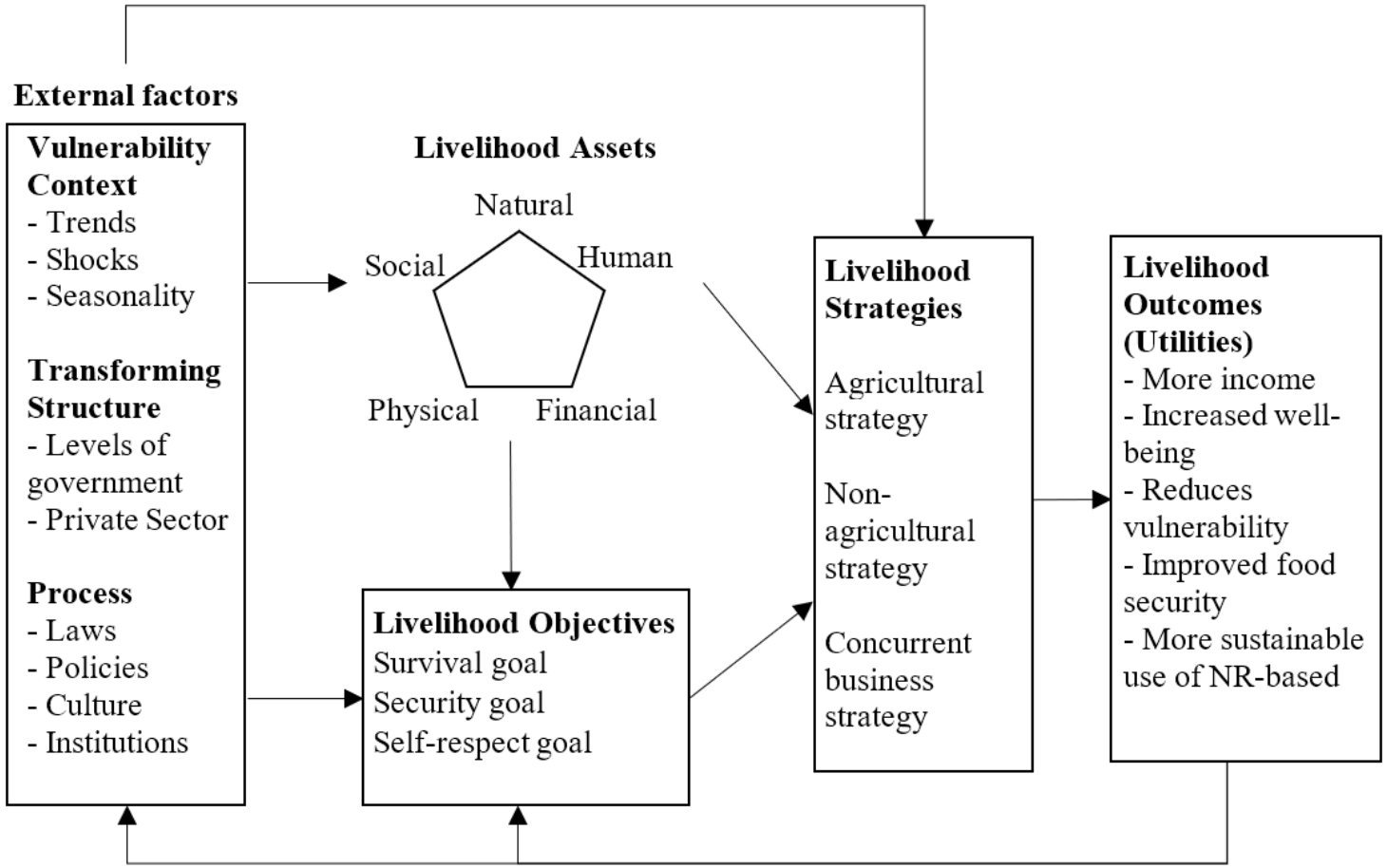
Based on assets and rights. Those assets are easy to sell, divisible, and secure against price fluctuation, including land, shelter and cash savings (Start and Johnson, 2004).

Based on independence and choice, reflecting the self-confidence and esteem in coping and adapting to the potential threats and opportunities (Start & Johnson, 2004).



II. Literature Review

➢ Renewal of the Sustainable Livelihood Framework

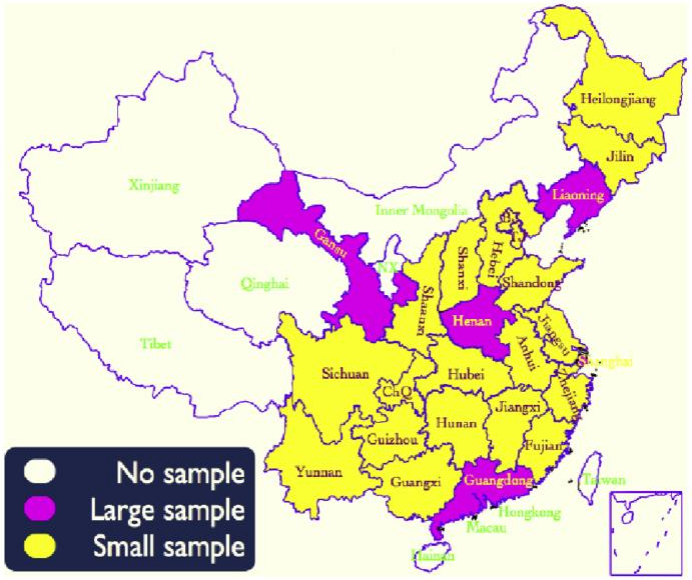


Source: Adapted from Carney (1998).

III. Methodology

➢ Data

- Chinese Family Panel Studies (CFPS) 2018
- The dataset includes four datasets: children, adults, household economic conditions, and household demographic conditions.



➢ Data mining

- Merge the adult and household datasets based on the respondent's ID.
- Drop observations with missing values for the key variables from the 6585 rural observations. Finally, 4232 completed rural samples are left.

III. Methodology

➢ Assessment Method of Livelihood Goals

Preliminary assessment

- Extract the potential indicators from literature review.
- Kaiser-Meyer-Olkin (KMO) value should be more than 0.5.

Extract indicators

PCA assessment

- Use Principal Component Analysis (PCA) to screen the indicators of each type of livelihood goal that satisfy (1) the cumulative explanation is more than 50%, and (2) the loading value after rotation of each indicator is more than 0.5.

Relationship between indicators

MNL analysis

- Use the multinomial logit (MNL) model and multinomial probit model to regress the indicators with livelihood strategies, to identify the final indicators of each kind of livelihood goal.

Relationship between indicators and LS

Source: Adapted from Liu et al. (2020), Matter et al. (2021) and Zhou et al. (2021).

III. Methodology

➢ Livelihood Strategy Selection Model

- Multinominal Logit Model (MLM) (Helmy, 2020):

$$logit\ Y_{ij} = \alpha + \beta_j X_{ij} + Z_i + \varepsilon, j = 0,1,2, \dots n$$

- Y_{ij} is the selected livelihood strategy j by household i.
- α represents the assessed parameters of the model
- β_j is the covariate effect of j_{th} livelihood strategy
- error term ε follows a standard bivariate normal distribution with zero means.
- X_{ij} refers to the value of survival goal, security goal and self-respect goal of household i with livelihood strategy j, which is calculated by entropy method.
- Z_i is the demographic characteristics of household i, including household head's age, gender, education level, and the household's family size, dependent ratio, land status and the locations.

IV. Results and conclusion

➢ Potential indicators of Livelihood Goals: survival goal

Indicators	Description	Citation
Income level	1 if the household's income is under the poverty line, 0 otherwise. The poverty line of China in 2018 is the per-capita net income lower than 2952 yuan per year.	China's National Bureau of Statistics
Engel coefficient	Engel coefficient is measured by the proportion of food consumption in total expenditure, which reflects the living condition of a family.	Yu (2018)
Diversification index	The diversification level is calculated by the Simpson index based on the households' different income sources.	Dzanku (2018)
Self-agriculture consumption rate	Self-agriculture consumption rate reflects the ratio of self-agriculture consumption to self-agriculture production.	Huang et al. (2021a)

Source: Author's configuration based on the literature review.

IV. Results and conclusion

➢ Potential indicators of Livelihood Goals: security goal

Indicators	Description	Citation
Land assets	The total value of the land. (Unit: 100,000 yuan)	Xu & Du (2022)
Agricultural production fixed assets	The proportion of the agricultural productive fixed assets such as seeds and ploughs. (Unit: 10,000 yuan)	Zhang et al. (2019)
Durable assets	The proportion of non-agricultural fixed assets such as TV, fridge, car. (Unit: 100,000 yuan)	Zhang et al. (2019)
Saving	The total savings of a household. (Unit: 100,000 yuan)	Dzanku (2018)
House assets	The total value of house of a household. (Unit: 1,000,000 yuan)	Zhang et al. (2019)

Source: Author's configuration based on the literature review.

IV. Results and conclusion

➢ Potential indicators of Livelihood Goals: self-respect goal

Indicators	Description	Citation
Organisation	1 if a household joins in the formal or informal organisation, 0 otherwise.	Tambe (2022)
Social spending	The money is spent mainly for important social events during the year, such as the marriage of relatives (Unit: 10,000 yuan)	Hua et al. (2017)
Finance assets	The total value of financial products, including bonds, stocks, and funds (Unit: 100,000 yuan)	Plagnol (2011)
Average education level	The average education level represents the average education year of a household.	Hua et al. (2017)
Business assets	The market value of all business assets equals the value of property and intangibles minus the value of liabilities (net value concept) (Unit: 10,000 yuan)	Arrondel et al. (2014)

Source: Author's configuration based on the literature review.

IV. Results and conclusion

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➢ Descriptive Statistics

Screened indicators of livelihood goals based on the PCA and KMO test

Classification	Indicators	Mean	Std. Dev.	Loading value after rotation
Survival goal	Poverty	0.049	0.215	0.618
	Engel coefficient	0.165	0.105	0.792
	Diversification index	0.346	0.224	0.560
	Proportion of self-agriculture consumption	0.334	0.395	0.655
Security goal	Land assets	0.342	0.923	0.669
	Durable assets	0.261	0.560	0.596
	Fixed agricultural production assets	0.354	1.853	0.711
	House assets	0.241	0.387	0.597
	Saving	0.260	0.508	0.537
Self-respect goal	Education level	5.530	3.197	0.599
	Organization participation	0.272	0.524	0.782
	Social status	4.032	0.996	0.950
	Finance assets	0.075	0.315	0.626
	Business assets	0.606	3.171	0.600

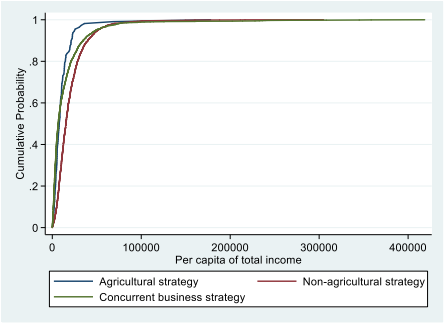
Note: Only factors with a principal component load coefficient with an absolute value greater than 0.5 are listed here.

IV. Results and conclusion

➢ Descriptive Statistics

Livelihood strategy	Description
Agricultural strategy	More than 75% of family income comes from family farm activities, including agriculture and livestock activities.
Non-agricultural strategy	More than 75% of family income comes from non-agricultural work activities.
Concurrent business strategy	The concurrent business strategy reflects a household engaging in more than one kind of livelihood activity, and no activities can bring about more than 75% income of the total income.

Source: Yang et al. (2018).



IV. Results and conclusion

Variables	Multi-logit model			Multi-probit model		
	Agricultural strategy	Non-agricultural strategy	Concurrent business strategy	Agricultural strategy	Non-agricultural strategy	Concurrent business strategy
Income level	-0.017	-0.317***	0.334***	-0.020	-0.311***	0.331***
	(-1.310)	(-8.994)	(9.949)	(-1.642)	(-9.233)	(10.245)
Diversification index	-0.076***	-0.444***	0.520***	-0.076***	-0.449***	0.524***
	(-8.833)	(-15.545)	(18.509)	(-9.311)	(-16.140)	(19.231)
Self-agriculture consumption rate	-0.145***	0.096***	0.049**	-0.136***	0.093***	0.042**
	(-6.913)	(4.650)	(2.523)	(-6.825)	(4.578)	(2.292)
Land assets	0.016***	-0.088***	0.072***	0.016***	-0.079***	0.062***
	(4.901)	(-5.250)	(4.576)	(5.826)	(-4.797)	(4.141)
House assets	-0.054***	0.032*	0.023	-0.054***	0.030*	0.024
	(-3.706)	(1.678)	(1.235)	(-3.993)	(1.683)	(1.364)
Education level	-0.003**	0.018***	-0.015***	-0.003***	0.019***	-0.016***
	(-2.515)	(6.320)	(-5.339)	(-2.628)	(6.650)	(-5.676)
Business assets	-0.007***	0.015***	-0.008**	-0.006***	0.014***	-0.007***
	(-2.896)	(4.231)	(-2.382)	(-3.047)	(4.507)	(-2.602)
Control variables	Controlled			Controlled		
Lagged LS	Controlled			Controlled		
Regional effects	Controlled			Controlled		
Pseudo R^2	0.342			--		
Log-likelihood ratio	-2159.212			-2156.822		
Wald test	Wald chi2(58) = 1342.55			Wald chi2(58) = 1518.91		
Prob > chi2	P = 0.000			P = 0.000		
Observations	4232			4232		

IV. Results and conclusion

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➢ Marginal effects of livelihood goals of livelihood strategy

	Multi-logit model			Multi-probit model		
Variables	**Agricultural strategy**	**Non-agricultural strategy**	**Concurrent business strategy**	**Agricultural strategy**	**Non-agricultural strategy**	**Concurrent business strategy**
Survival goal	-0.406**	-0.127	0.533***	-0.205**	-0.233***	0.438***
	(-2.310)	(-1.261)	(5.829)	(-2.064)	(-3.762)	(6.976)
Security goal	0.083***	-0.312**	0.229*	0.083***	-0.317***	0.234**
	(3.000)	(-2.521)	(1.885)	(2.762)	(-2.631)	(1.977)
Self-respect goal	0.002	0.289***	-0.290***	-0.001	0.270***	-0.269***
	(0.086)	(3.629)	(-3.429)	(-0.060)	(3.913)	(-3.746)
Control variables	Controlled			Controlled		
Lagged LS	Controlled			Controlled		
Regional effects	Controlled			Controlled		
Pseudo R^2	0.309			--		
Log-likelihood ratio	-2270.264			-2270.841		
Wald test	Wald chi2(52) = 1189.93			Wald chi2(52) = 1346.16		
Prob > chi2	P = 0.000			P = 0.000		
Observations	4232			4232		

IV. Results and conclusion

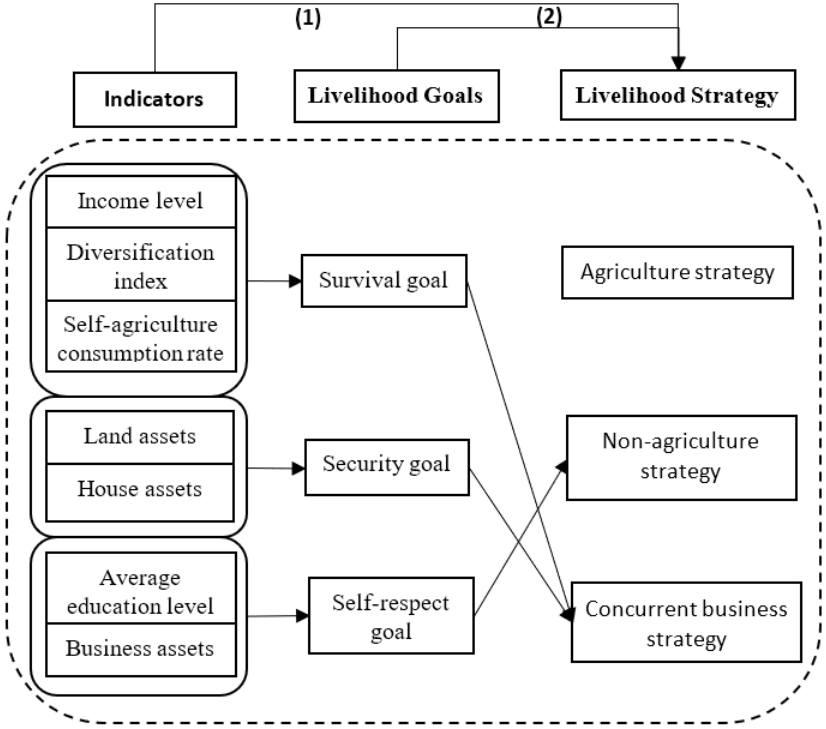
➢ Robustness tests

	Change the LS classification				Add the potential factors		
Variables	**Agricultural strategy**	**Non-agricultural strategy**	**Concurrent business strategy**	**Supported strategy**	**Agricultural strategy**	**Non-agricultural strategy**	**Concurrent business strategy**
Survival goal	-0.195**	-0.228***	0.273***	0.150***	-0.205**	-0.233***	0.438***
	(-2.005)	(-3.867)	(5.173)	(6.746)	(-2.064)	(-3.762)	(6.976)
Security goal	0.089***	-0.264**	0.473***	-0.299*	0.083***	-0.317***	0.234**
	(2.827)	(-2.066)	(3.388)	(-1.960)	(2.762)	(-2.631)	(1.977)
Self-respect goal	0.005	0.302***	-0.157	-0.150	-0.001	0.270***	-0.269***
	(0.248)	(3.518)	(-1.588)	(-1.105)	(-0.060)	(3.913)	(-3.746)
Control variables	Controlled				Controlled		
Lagged LS	Controlled				Controlled		
Regional effects	Controlled				Controlled		
Pseudo R^2	0.210				0.243		
Log-likelihood ratio	-3278.303				-2485.9265		
Wald test	Wald chi2(54) = 1105.95				Wald chi2(36) = 1035.14		
Prob > chi2	P = 0.000				P = 0.000		
Observations	4232				4232		

IV. Results and conclusion

➢ Conclusions

- Households' livelihood goals are heterogeneous and embedded in the SLF. They have close connections between livelihood assets, and LS.
- Three livelihood goals can be defined by seven indicators:
  - Survival goal: Income level, diversification index and self-agricultural consumption rate.
  - Security goal: Land assets, House assets.
  - Self-respect goal: Education level, business assets.
- Rural households with different objectives have different LS selection preferences. When households pursue the survival goal or security goal, they are more likely to choose the concurrent business strategy. A family with a higher self-respect goal level is more likely to choose the non-agricultural strategy.



V. Contributions and limitations

➢ Implications

- First, our result shows that households' livelihood goals are heterogeneous and cannot be ignored in LS selection, which indicates that the rural development programs and projects should be targeted and managed according to households' objective conditions.

- In addition, our findings show that livelihood goals influence LS selection and can be measured from different indicators, highlighting that adjusting the indicators' level could be the essential and efficient way to manage households' living expectations to choose the more sustainable LS. Specifically, lowering the value of the indicators of the survival goal and enhancing the value of indicators of the security and self-respect objectives can help improve households' living situations.

V. Contributions and limitations

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➢ Contributions

- Investigate the relationship between livelihood assets, livelihood goals and LS, and renewed the SLF through integrating livelihood objectives into SLF from the perspective of utility maximization theory.
- Develop the measurement of livelihood objectives
- Explore the nexus between livelihood objectives and LS in rural China.

➢ Limitations

- The measurement of livelihood goal is from the ex-post perspective, which assumes households have realized their livelihood goals. Future studies could improve the measurement of livelihood goal by combining the data from the field survey.
- This study is conducted with cross-section data. Future research could use panel data to test the indicators of livelihood goal and their impact on livelihood strategy to obtain more robust results.

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Thanks for your listening

Q&A

Any further suggestions, please send to the email:

Chen.Chen4@lincolnuni.ac.nz