International Review of Management and Marketing

ISSN: 2146-4405

available at http: www.econjournals.com

International Review of Management and Marketing, 2016, 6(S4) 271-276.

Special Issue for "Asia International Conference (AIC 2015), 5-6 December 2015, Universiti Teknologi Malaysia, Kuala Lumpur, Malaysia"

Assessing Livelihood among Entrepreneurs in Sindh Pakistan: Construct Development and Measurement

Rosman Mohammed Yusoff[1], Abdul Ghafoor Kazi[2]*, Muhammad Muddassar Khan[3], Muhammad Siddique[4]

[1]Faculty of Science Technology and Human Development, Universiti Tun Hussein Onn Malaysia, Johor, Malaysia, [2]Faculty of Science Technology and Human Development, Universiti Tun Hussein Onn Malaysia, Johor, Malaysia, [3]Faculty of Management, Universiti Teknologi Malaysia, Johor, Malaysia, [4]Faculty of Management, Universiti Teknologi Malaysia, Johor, Malaysia. *Email: gw140041@siswa.uthm.edu.my

ABSTRACT

Sustainable livelihoods index (SLI) is most commonly used tool to assess the livelihood assets at disaster hit area. The objective of this study was to operationalize the construct of livelihood and formulate its scale by testing its psychometric properties. Initially, a non-systematic narrative review of existing literature was performed and afterward a scale was developed to formulating a questionnaire on livelihood. The questionnaire was distributed among 222 entrepreneurs at disaster hit areas at Sindh, Pakistan. The results showed that the construct of livelihood is composed of five dimensions called livelihood (capitals/assets) are social, human, natural resource, financial, and physical capital; current study has included items that cover all five dimensions. The psychometric analysis revealed that SLI is a reliable and valid tool; the reliability result showed that Cronbach's alpha coefficients were in the range from 0.76 to 0.88; and validity results showed that the average variance extracted and factor loadings were also within the acceptable ranges (above 0.50). Study concludes that the construct of livelihood is a dynamic construct as it could be interpreted according to the geographical and socioeconomic changes. Moreover, the SLI is a valid and reliable tool for the assessment of the construct of livelihood. Therefore, this index can successfully be used to measure livelihood at Pakistan.

Keywords: Livelihood, Entrepreneurs, Construct Development, Reliability, Validity
JEL Classification: L26

1. INTRODUCTION

In social sciences the concept of livelihood extends to include social and cultural means, i.e., "the command an individual, family, or other social group has over an income and/or bundles of resources that can be used or exchanged to satisfy its needs. This may involve information, cultural knowledge, social networks and legal rights as well as tools, land and other physical resource" (Blaikie et al., 2004).

"A livelihood comprises the capabilities, assets including resources (material and social) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base" (Carney, 1998; 2003. p. 4;).

This study has assumed that peoples' livelihood is considered secure and normal if they have access to five basic assets or capitals of livelihood (social, human, natural resource, financial, and physical capital). Moreover, in next section each livelihood capital is described briefly:

1.1. Social Capital

The social capital consist of resources (networks, membership of groups, relationships of trust, access to wider institutions of society) upon which people draw in pursuit of livelihoods (Carney, 1998; DfID, 1999). Moreover, social capital can be defined at

different levels and for distinct units of analysis: Individuals (micro level), organizations (intermediate level) of the whole society (macro level). Roughly speaking, social capital refers to social relations among persons generating productive results (Ramírez et al., 2010; Schuller et al., 2000; Smallbone et al., 2010). Social networks are valuable resources since they facilitate economic activity (Burt, 1993; Nahapiet and Ghoshal, 1998), allows entrepreneurs to be more efficient and access privileged business opportunities (Abreu et al., 2010) and improve innovation (Ahuja, 2000; Zhang and Duan, 2010).

1.2. Human Capital

Human capital represents the skills, knowledge, ability to labor and good health as important to the ability to pursue different livelihood strategies (Carney, 1998; DfID, 1999). Similarly (Ellis, 2000) characterize human capital as the labor available to the household: Its education, skill, and health. Education can help to improve people's capacity to use existing assets better and create new assets and opportunities while being healthy and access to health facilities are essentials. Therefore, this study has considered both knowledge and health as human capital for entrepreneurs and livelihood outcomes.

1.3. Natural-resource Capital

Natural resource capital is the term used for the natural resources stocks from which resource flows and services (e.g., nutrient cycling, erosion protection, land, water, wildlife, biodiversity, environmental resources) useful for livelihoods are derived (Carney, 1998; DfID, 1999). This study considers the source of water and forest that is used for fuel purposes and is natural capital of small scale entrepreneurship.

1.4. Financial Capital

The financial capital is determinant of livelihood that shows peoples' access to hard cash in term of savings, availability of credit, remittances or retirement allowances (Carney, 1998; DfID, 1999). These financial resources available to entrepreneurs can contribute to consumption as well production of goods and services whilst people as an employee on availability of cash may fulfill their desired livelihood necessities. Percentage of households having debt and percentage of households having savings will be used as indicators of financial capital.

1.5. Physical Capital

Physical capital comprises of infrastructures and producer goods needed to support livelihoods. Carney (1998) and DfID (1999) defines physical capital as the basic infrastructure (transport, shelter, water, energy, and communications) and the production equipment and means which enable people to pursue their livelihoods (Carney, 1998; DfID, 1999). Transportation and schools are two major components of physical capital both are considered in this study as essentials for entrepreneurs and livelihood outcomes.

Many authors have developed various indices to evaluate the livelihood of the poor. Lindenberg (2002) and Rahman and Akter (2010) developed the most famous composite index of social and economic wellbeing with respect to sustainable livelihood approach is the livelihood security index (LCI). The LCI is one of the most important social indicators for assessing the quality of life, coupled with meeting the basic needs of human beings. The basic aim of this index was use in measuring progress at the family and community level through identifying the constraints to peoples' well-being as well as their assets and opportunities. Rai et al., (2008) also developed an index with respect to sustainable livelihood concept, namely livelihood index. A composite integrated livelihood index was developed based on macro level data to evaluate the developmental process of the country by regions. On other dimension, Hahn et al. (2009) includes vulnerability indicators in developing livelihood index namely livelihood vulnerability index (LVI). LVI used to estimate climate change vulnerability based on eight domains namely socio-demographics, livelihoods, social networks, health, food, and water security, natural disasters, and climate variability.

This study attempts to develop an index/construct that could measure comprehensively all livelihoods assets namely sustainable living index (SLI) to assess the ability and preparedness of the disaster affected entrepreneurs those who received governmental support to establish or reestablish their business. Slightly different with indices discussed above, this index concentrates on formation of micro-index that base on the livelihood assets possession of every household. The developed SLI might be treated as additional information in assisting the local authorities in selecting an appropriate entrepreneur to receive government assistance adjacent to the regular use of household income level.

2. METHODOLOGY

This is a cross-sectional quantitative study and was conducted in the district Jamshoro of Sindh Province, Pakistan. According to the list provided by Sindh Bank Limited, 499 most vulnerable entrepreneurs who received governmental support were selected. The suitable sample size can be calculated using Yamane's formula:

$$n = N/(1 + (Ne^2))$$

Where,

n = Suitable sample size	(required)
N = Total population	(499)
e = Error level or percent confidence interval or alpha level	(0.05)

For 0.95 confidence interval, e = 0.05; putting all values in formula, 222 surveys were found suitable to support this study. From surveys 192 questionnaires were returned of which 163 were usable. Self-administrated questionnaire was used for data collection and answers were recorded on five-point likert scale to check the level of agreement with the statements where, 1 = "strongly disagree" and 5 = "strongly agree". The questionnaire design was based on the Sustainable livelihood analysis framework as suggested by the DfID (1999). This approach was used to identify asset ownership, strategy implemented and outcome achieved, institution influenced and vulnerability context faced by hardcore poor entrepreneurs in sustaining their livelihoods. The questionnaire was formulated consisted of information about

Table 1: Variables, items reference, and number of items

Variables	Reference of items	Total number of items
Demographic variables	ED01 to ED10	10
Social capital	LH01 to LH08	08
Human capital	LH09 to LH17	09
Natural resource capital	LH18 to LH20	03
Financial capital	LH21 to LH23	03
Physical capital	LH24 to LH25	02
Total		35

socio-demography and livelihood. The questionnaire and interview were administered using English. All included variables were in the form of nominal, ordinal/interval, and continuous form. The detail of the variables for each section is presented in the Table 1.

This study had identified 25 livelihood capitals and outcome indicators from the data set and was broadly grouped them under five groups of capitals namely social, human, natural resource, financial and physical capital (Table 1). Index was then constructed following Hahn et al. (2009). Indicators were identified assuming that each indictor had an equal weight to the individual groups of livelihood capital and outcomes. The indicators were then standardized following the procedure adopted in measuring life expectancy in human development reports (Hahn et al., 2009).

3. DATA ANALYSIS AND RESULTS

The results showed that the construct of livelihood is generally composed of five dimensions, i.e., social capital, human capital, natural resource capital, financial capital, and physical capital. The psychometric analysis revealed that SLI is a reliable and valid tool. To check the reliability and validity of the construct following test were performed and the results of these test are also presented.

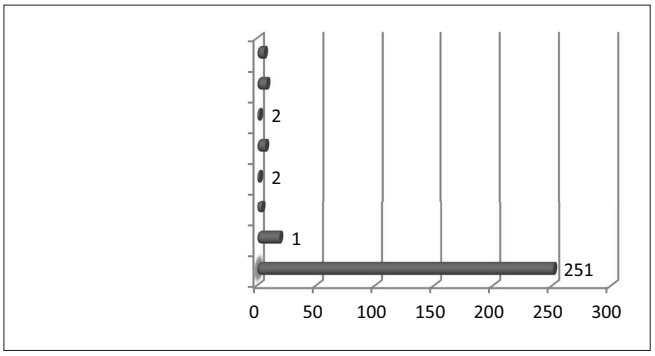
3.1. Content and Face Validity

The researcher should check the content and face validities during the construction phase of any research instrument. The content validity actually refers to a non-statistical process of systematic inspection of the contents of the research instrument for determining whether it is covering the overall elements of the construct (Marnat, 2010). On other side the face validity refer to the extent to which the items of a research instrument appear to measure a construct as viewed by the respondent or any other person. Face validity tells whether test look good to the person who is taking it. Therefore, face validity is determined by asking people (Long, 2013).

The content validity of research instrument was established through a review of relevant literature. First of all a thorough review of theoretical models related to the variables of current study was done; later on review of relevant measurement scales was done. In this regard studies on the psychometric evaluation of the scales selected for current study were very helpful. Chart 1 shows the details of 299 secondary data sources utilized in the current study.

Whereas, the face validity was determined by taking opinion from senior faculty members in area of management for checking relevancy of items and overall makeup of the questionnaire. In this

Chart 1: Details of secondary data sources



regard, the following persons were asked to give their opinion for further improvement in the questionnaire:

1. Dr. Rashid Ahmed Qureshi, Associate Professor, Department of Management Science, Shaheed Zulfiqar Ali Bhutto Institute of Science and Technology, Hyderabad, Sindh, Pakistan (Location: Hyderabad, Pakistan)
2. Dr. Anwar Khan, Assistant Professor, Department of Management Science, COMSATS Institute of Information Technology, Attock, Pakistan ((Location: Attock, Pakistan)
3. Dr. Abdul Subhan Kazi, Assistant Professor, Department of Management Sciences, Isra University Hyderabad, Sindh, Pakistan. (Location: Hyderabad, Pakistan).

3.2. Construct Validity

The construct validity shows the degree to which a scale assesses the underlying theoretical construct, which it is supposed to measure (DeLisa et al., 2008). Therefore it is process of finding match between scale and construct (Long, 2013). Bowling (2009) shared that construct validity is divided into two types i.e., convergent and discriminant validity.

3.3. Convergent Validity

The convergent validity is ability of a scale to correlate with other scales, which are supposed to measure same concept, the convergent validity is obtained when independent measures of the similar construct converge or correlate (Schmidt, 2010). Convergent validity may be checked by calculating factor loadings and communalities (Shah, 2009). A principal component analysis (PCA) technique with varimax rotation and extraction on Eigen value >01 were tested. The Kaiser–Meyer–Olkin (KMO) measure of sample adequacy i.e., recommended >0.60 was calculated; indicating that the data was suitable for PCA (Kaiser, 1974).

The results of items total statistics and PCA for retained items of variable social capital showed that factor loading ranged from 0.65 to 0.85. Likewise the communalities also ranged from 0.5 to 0.79. The KMO measure of sample adequacy for all variables is within acceptable range (above 0.60) as shown in Table 2. Based on such findings, the 08 items related to social capital were retained for further analysis. These results suggest evidence of convergent validity for construct of social capital.

The results of items total statistics and PCA for retained items of variable human capital showed that factor loading ranged from 0.74 to 0.86. Likewise the communalities also ranged from 0.54

Table 2: Social capital – KMO, factor loadings, and communalities

Items	Factor loadings	Communalities
Describe the level of your livelihood dependence on agriculture	0.85	0.79
Describe the level of your livelihood dependence on livestock	0.82	0.70
Describe the level of your livelihood dependence on bush and wood collection	0.81	0.66
Describe the level of your livelihood river, forest or lake	0.80	0.65
Describe the level of your livelihood dependence on business	0.77	0.60
Describe the level of your livelihood dependence on job	0.76	0.57
People in the community (neighbors, friends and relatives) support each other e.g., by giving medical support, monetary support, physical support or social support	0.69	0.53
People in your family and community approach to the community leader(s) or government for help	0.65	0.50

Source: Author's calculation. KMO=0.78. KMO: Kaiser-Meyer-Olkin

Table 3: Human capital – KMO, factor loadings, and communalities

Items	Factor loadings	Communalities
Basic health facilities (hospital and medicine) are easily accessible for treatment to sick people	0.76	0.57
Your family member (s) was so sick in the past 2 weeks that they had to miss work or school	0.74	0.54
Many people in your family/community die due to the climate related disasters (flood, coldness, landslides, hunger, avalanches	0.79	0.62
Your family gets sufficient food for the whole year	0.78	0.62
Some of your family suffers from nutrient deficiency	0.86	0.68
People in your community watch TV as source as a source of information	0.77	0.59
Most of your community people listen radio for getting updated information	0.77	0.59
Everyone in your community has an easy access to a telephone/mobile phone	0.80	0.58
You receive a warning about the disaster before it already happens	0.78	0.62

Source: Author's calculation. KMO=0.83. KMO: Kaiser-Meyer-Olkin

Table 4: Natural resource capital – KMO, factor loadings, and communalities

Items	Factor loadings	Communalities
The water available in this village is sufficient for household purpose	0.75	0.88
Clean/safe water is available for household use to all community	0.74	0.55
During the past 10 years, there has been many conflicts on water distribution in your community	0.81	0.82

Source: Author's calculation. KMO=0.65. KMO: Kaiser–Meyer–Olkin

Table 5: Financial capital – KMO, factor loadings, and communalities

Items	Factor loadings	Communalities
Most of the community members have their own transport or access to transport is easy	0.79	0.65
In your community people keep savings for rainy days	0.76	0.70
Community members take easy loans to support their business	0.75	0.56

Source: Author's calculation. KMO=0.69. KMO: Kaiser-Meyer-Olkin

Table 6: Physical capital – KMO, factor loadings, and communalities

Items	Factor loadings	Communalities
Road is available from your community to reach nearest available transport	0.78	0.63
Students have easy access from community to reach school	0.71	0.73

Source: Author's calculation. KMO=0.62

to 0.68. The KMO measure of sample adequacy for all variables is within acceptable range (above 0.60) as shown in Table 3. Based on such findings, the 09 items related to human capital were retained for further analysis. These results suggest evidence of convergent validity for construct of human capital.

The results of items total statistics and PCA for retained items of variable natural resource capital showed that factor loading ranged from 0.74 to 0.81. Similarly, the communalities also ranged from 0.55 to 0.88. The KMO measure of sample adequacy for all variables is within acceptable range (above 0.60) as shown in Table 4. Based on such findings, the 03 items related to natural resource capital were retained for further analysis. These results suggest evidence of convergent validity for construct of natural resource capital.

The results of items total statistics and PCA for retained items of variable financial capital showed that factor loading ranged from 0.75 to 0.79; the communalities also ranged from 0.56 to 0.70. The KMO measure of sample adequacy for all variables is within acceptable range (above 0.60) as shown in Table 5. Based on such findings, the 03 items related to financial capital were retained for further analysis. These results suggest evidence of convergent validity for construct of financial capital.

The results of items total statistics and PCA for retained items of variable physical capital showed that factor loading ranged from 0.71 to 0.78. Likewise the communalities also ranged from 0.63 to 0.73. The KMO measure of sample adequacy for all variables is within acceptable range (above 0.60) as shown in Table 6. Based

Table 7: Livelihood capitals - Discriminant validity

Correlations					
Variables	**Social capital**	**Human capital**	**Natural resource capital**	**Financial capital**	**Physical capital**
Social capital	*0.60*$^{+}$				
Human capital	0.203**	*0.61*$^{+}$			
Natural resource capital	0.211**	0.165**	*0.59*$^{+}$		
Financial capital	0.112*	0.251**	0.116*	*0.59*$^{+}$	
Physical capital	0.125**	0.309**	0.274**	0.250**	*0.56*$^{+}$

Source: Author's calculation. **Correlation is significant at the 0.01 level (two-tailed), *Correlation is significant at the 0.05 level (two-tailed). $^{+}$Average variance extracted is shown diagonally in font-italic

Table 8: Cronbach's alpha coefficients of scales

Scales	Number of items	Cronbach's alpha coefficients
Social capital	9	0.88
Human capital	8	0.82
Natural-resource capital	3	0.79
Financial capital	3	0.85
Physical capital	2	0.76

Source: Author's calculation

on such findings, the 02 items related to physical capital were retained for further analysis. These results suggest evidence of convergent validity for construct of physical capital.

3.4. Discriminant Validity

It is the extent to which one construct is distinct from another construct. It helps in knowing distinctiveness between the constructs by ensuring that the scale used in measuring particular construct is distinct than another construct (Hair et al., 2010). Firstly, Fornell and Larcker(1981) suggested the formula to calculate average variance extracted (AVE); in this study the discriminant validity was checked through AVE method. The correlation matrix of all variables was built. The discriminant validity was checked through comparing square root of AVE for given variable with the correlations between these variables. The correlations between the variables should be less than the square root of AVE (Fornell and Larcker, 1981; Pagani et al., 2011). Table 7 shows that the square root of AVE, given on diagonals are greater than correlations between the variables, thus the discriminant validity of the all the construct was established.

$$AVE = \sum ((Item_1)^2 + (Item_2)^2 + \ldots + (Item_n)^2)/N$$

On the other side, validity results showed that the factor loadings and AVE were also within the acceptable ranges, i.e., above 0.50.

3.5. Reliability

The reliability result showed that Cronbach's alpha coefficients ranged from 0.76 to 0.88 (Table 8).

4. DISCUSSION ON RESULTS

The main objective of this study was to operationalize the construct of livelihood and then formulate its scale by testing its psychometric properties. To determine this, validity and reliability tests were performed.

Initially, content and face validity of the construct was determined. For this, extensive literature review was conducted, a questionnaire was developed, and experts' opinion was taken into account to finalize it. Afterward, construct validity was checked through convergent validity and discriminant validity. Finally, Cronbach's alpha test was used to check reliability of construct.

The variables were adequate as their KMO values found is in an acceptable range i.e., above 0.60. Factor loadings and communalities of variables were found above 0.50 this showed that convergent validity of scale was satisfied. Inter scale correlation were found significant and the AVE was greater than the inter scale correlation this mentions that discriminant validity test is also satisfied. Furthermore, reliability test of scale is also above 0.75 which again shows that construct is reliable to use.

This construct is one of its kinds that can be used for cross-sectional quantitative research to assess livelihood of entrepreneurs at disaster hit area. This construct will be helpful to authorities to select most vulnerable entrepreneurs who need support.

5. RECOMMENDATION AND CONCLUSION

This tool may be tested for future research in other disaster hit area. This study concludes that the livelihood construct is a dynamic construct as this can be interpreted according to the geographical and socioeconomic changes. Additionally, the SLI is a valid and reliable tool for the assessment of the livelihood construct. Hence this livelihood index can effectively be used to measure the livelihood at Pakistan.

REFERENCES

Abreu, M., Grinevich, V., Kitson, M., Savona, M. (2010), Policies to enhance the 'hidden innovation'in services: Evidence and lessons from the UK. The Service Industries Journal, 30(1), 99-118.

Ahuja, G. (2000), Collaboration networks, structural holes, and innovation: A longitudinal study. Administrative Science Quarterly, 45(3), 425-455.

Blaikie, P., Cannon, T., Davis, I., Wisner, B. (2004). At Risk: Natural Hazards, People's Vulnerability and Disasters. London: Routledge.

Bowling, A. (2009), Measuring Health. UK: McGraw-Hill Education.

Burt, R.S. (1993), The social structure of competition. Explorations in Economic Sociology. New York: Russell Sage Foundation. p65-103.

Carney, D. (1998), Paper Presented at the Sustainable Rural Livelihoods: What Contribution Can We Make? Papers Presented at the Department for International Development's Natural Resources Advisers' Conference, July, 1998.

Carney, D. (2003), Sustainable Livelihoods Approaches: Progress and Possibilities for Change. London: DFID, Department for International Development.

DeLisa, J.A., Gans, B.M., Walsh, N.E. (2008), Physical Medicine and Rehabilitation: Principles and Practice. Philadelphia, PA: Lippincott Williams & Wilkins.

DfID, UK. (1999), Sustainable Livelihoods Guidance Sheets. London: Department for International Development.

Ellis, F. (2000), The determinants of rural livelihood diversification in developing countries. Journal of Agricultural Economics, 51(2), 289-302.

Fornell, C., Larcker, D.F. (1981), Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research (JMR), 18(1), 39.

Hahn, M.B., Riederer, A.M., Foster, S.O. (2009), The livelihood vulnerability index: A pragmatic approach to assessing risks from climate variability and change: A case study in Mozambique. Global Environmental Change, 19(1), 74-88.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. (2010). Multivariate Data Analysis. 7th ed. Upper Saddle River, NJ: Prentice Hall.

Kaiser, H.F. (1974), An index of factorial simplicity. Psychometrika, 39(1), 31-36.

Lindenberg, M. (2002), Measuring household livelihood security at the family and community level in the developing world. World Development, 30(2), 301-318.

Long, M. (2013), The Psychology of Education. New York, NY: Taylor & Francis.

Marnat, G.G. (2010), Handbook of Psychological Assessment. Hoboken, NJ: Wiley.

Nahapiet, J., Ghoshal, S. (1998), Social capital, intellectual capital, and the organizational advantage. Academy of Management Review, 23(2), 242-266.

Pagani, M., Hofacker, C.F., Goldsmith, R.E. (2011), The influence of personality on active and passive use of social networking sites. Psychology and Marketing, 28(5), 441-456.

Rahman, S., Akter, S. (2010), Determinants of livelihood security in poor settlements in Bangladesh: International Working Paper Series. University of Plymouth-UK 10 (01): 21.

Rai, A., Sharma, S.D., Sahoo, P.M., Malhotra, P.K. (2008), Development of livelihood index for different agro-climatic zones of India. Agricultural Economics Researh Review, 21(2), 173-182.

Ramírez, A.R., Orejuela, A.R., Vargas, G.M. (2010), New perspectives for the managerial entrepreneurship. International Entrepreneurship and Management Journal, 6(2), 203-219.

Schmidt, M.J. (2010), Marketing Research. Harlow: Pearson Education.

Schuller, T., Baron, S., Field, J. (2000), Social Capital: A Review and Critique. Social Capital: Critical Perspectives. Oxford: Oxford University Press. p1-38.

Shah, N. (2009), Determinants of Employee Readiness for Organisational Change. (268 PhD), Brunel University London. Available from: http://www.bura.brunel.ac.uk/handle/2438/4460.

Smallbone, D., Welter, F., Voytovich, A., Egorov, I. (2010), Government and entrepreneurship in transition economies: The case of small firms in business services in Ukraine. The Service Industries Journal, 30(5), 655-670.

Zhang, J., Duan, Y. (2010), The impact of different types of market orientation on product innovation performance: Evidence from Chinese manufacturers. Management Decision, 48(6), 849-867.