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RESEARCH ARTICLE

THE ANALYTICAL HIERARCHY PROCESS (AHP) APPROACH FOR ASSESSMENT OF TAX AND REVENUE FOR NEPAL

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ABSTRACT

Tax and revenue generation is one of the key factors for the economy and development of country like Nepal. Thus, an empirical investigation has been conducted to find out various aspects of tax contributions to national revenue. The research methodology implied the use of survey research design and purposive sampling method to select respondents from tax administrators, tax experts, and tax payers. Questionnaires' and statistical data were instruments used for the study. The analytical hierarchy process (AHP) is used for data analysis to work out the most adequate design proposal for an area undergoing tax and revenue. AHP is a robust multi-criteria decision making (MCDM) method for solving corporate, social and governmental decision problems. AHP is used to rank the alternatives under different criteria and shows the relation between them. The result showed that there is positive relationship between tax and revenue. The study also delighted the various methods of collecting revenue, which are the enforcement of tax administration, tax experts, business man, tax payer, employee, online tax system. The findings of the study show that revenue administration needs to be reviewed to generate more revenue in the country.

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INTRODUCTION

To achieve economic development, government accounts responsibilities towards their citizens. It needs to accumulate huge amount of revenue and country like Nepal need to depend on tax for revenue collection. Every year government spends more portion of the fund to maintain peace and security for the protection of common people and creation of various socio-economic infrastructures. To meet the growing expenditure, government had to manage fund from different sources. Therefore, to finance government expenditure, government revenue is the key source and it can be achieved through generation and implementing various policies, planning, acts and procedures. For the development of country, it is better to depends on internal sources, taxes and not to depend on foreign fun, loans. Such as non-tax sources (revenue from public enterprises, administrative revenues, gift etc.) and tax sources (customs, excise duty, VAT, income tax etc.). It is simply a liability to pay an amount to the government, compulsory contribution from the taxpayers. Taxes are emphasized on all countries developed as well as developing countries because they have the option for increasing the yield of tax system. It shows that taxes are the better sources of public revenue and it

has been taken as the best effective tool for raising the public fund. Among internal resource taxation is a prime factor, pillar of the fiscal policy, backbone of welfare of the state. The amount which is legally collected from the people to manage the expenditure of the government from its net income is called income tax. Nepal has deficit budget as level of revenue generation is comparatively very lower than the expenditure in social and economic infrastructures. Developing countries like Nepal, having low per capita income, highly depend on the indirect tax rather than the direct tax. The share of income tax is much lower in the composition of direct tax revenue. So still we think that there are many factors which effect the collection of tax and to know the factor affecting taxation of Nepal we discussed with the tax administration, tax experts, tax payers then collected data. From them we knew thirteen important factor affecting taxation and those were separated with sub-factors, these were taken for analysis to rank those factors according to importance. Value added tax (VAT) is the tax raised on the value added by the registered taxpayers to their purchase and import. Value addition that takes place at each level in the production process and services is the basis for VAT (Khadka, 2001). Production-type VAT, income-type VAT and consumption-type VAT are three types of VAT and production-type VAT is simply calculated on the sum of all expenditure on Gross Domestic Product (GDP) net of government wage expenditure (Zee, 1995).

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Tax buoyancy means changes in actual tax revenues due to changes in income, discretionary measures such as tax rates and tax bases (Mukul, 1977). There are different factors which affect the government revenue and still government is unknown of some factors that need to focus for the improvement of taxation system of country. This study had been designed to solve the taxation major's problem and helps in betterment of revenue generation of Nepal. To ensure that proposal is winning over, more orderly form and sophisticated method to make the trade-off decision is needed. Therefore, to overcome this challenge this paper encourages using of analytical hierarchy process (AHP).

Analytical Hierarchy Process (AHP)

AHP is a decision making method for assigning a priority to alternatives when multiple criteria must be considered. This method had been applied to a wide variety of decision making areas, including research and development project selection, resources allocation, planning for urban development, maintenance management, policy evaluation etc. (Amit 2015; Saaty 1980; Cook *et al.*, 1984; Shenet *et al.*, 1998; Cheng *et al.*, 2005; Banai 2005). Multi-criteria decision making (MCDM) methods helps in decision making process that cannot be determined straightforwardly. Nowadays, there are various MCDM methods available for selection with reference to a study conducted by De Montiset *et al.* (2000) mentioned in paper. Very few researchers have used MCDM method for taxation in decision making process. MCDM method allows the decision maker to structure complex problems in the form of a hierarchy or a set of integrated levels (Robert 1992). Generally hierarchy had been divided into three levels such as goal, criteria and alternatives. For the taxation problem in this paper, goal is to select the main problem affecting taxation from criteria and alternative taken for our analysis. Action based on the decision maker's judgments concerning the importance of the criteria and extent to which they are met by each alternative, AHP offers a methodology to rank alternative courses. That's the reason; AHP is best suited for the taxation problem solving. The proof and the mathematical calculation of AHP are developed by Saaty (1980). AHP is composed of eight major steps and its brief description is mentioned by Grace and Lee (2008).

The AHP approach is used to derive by the managerial judgments and these judgments are expressed in terms of pairwise comparisons matrix on a given level of the hierarchy with respect to their impact on the next higher level. The relative importance of once item versus another in meeting a goal or criteria are express by pairwise comparisons. Each pairwise comparisons represents an estimate of the ratio of the weight of the two criteria being compared and this ration scale for processing human assessments had been implemented to a variety of decision making problems in other fields. Ratio scale for human judgments is utilizes by AHP and the alternative weights contemplate the relative importance of the criteria in achieving the goal.

Adequate Taxation and Revenue Proposal for Nepal

Developing countries like Nepal, having low per capita income, highly depend on the indirect tax rather than the direct tax. The share of income tax is much lower in the composition of direct tax revenue. In the initial stage of economic development, indirect tax has its own significant role similarly after a certain stage of economic development; direct tax plays a vital role. The role of taxation has increased as the government promised to provide the infrastructure for the development process and to provide the social services to the poor people, whose volume is dominant in country's demographic structure. Nepal is thus facing a problem of scarcity of resources for development activities. Few rich people capture major economic sources and they are under-taxed either because of tax avoidance or evasion and most of the poor people suffer from commodity tax.

However, citizens, scholars and other concerned parties (tax experts, tax administration, and tax payers) have recommended for the better study in taxation and revenue to find out exact problem which can help to solve the present problems related with it. Discouraging the over-invoicing and under-invoicing, improvement in customs valuation, penalizing the wrong declaration of imported goods and improper handle of pass book facility at customs points, checking the use of duplicate documents, minimizing LC related frauds, enhancing the automated system for customs' data, adoption of advalorem tax rated rather than specific tax rate, context of income tax as well

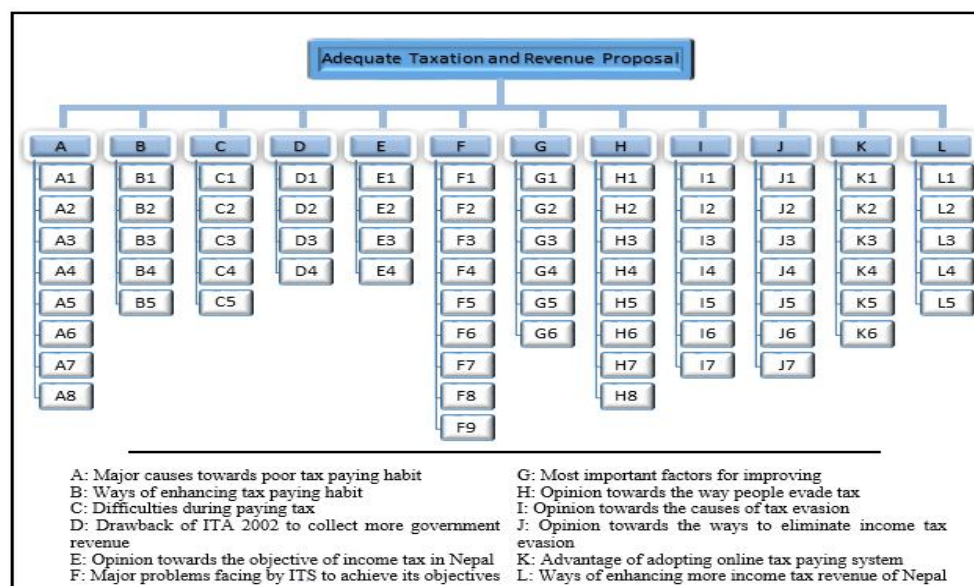


Figure 1. An illustrative decision hierarchy for creating adequate taxation and revenue proposal

as agriculture income should be brought under the tax net and enhancing the activities of customs patrolling group are some of the major mechanisms of enhancing the customs reforms. Tax buoyancy refers to changes in actual tax revenues due to changes in income and the changes in discretionary measures such as tax rates and tax bases ((Mukul, 1977).Progressive tax system needs to have at least greater than one value of the coefficient of elasticity (Adhikari, 1995).

Citizens, scholars and other related parties have suggested considering adequate taxation system and helping in revenue growth for Nepal various objectives need to take for findings (King 2003; Fletcher 2002;Klemm 2009). According to them we came to know there are lot factors, due to which there is improper taxation and effect on revenue. So, taking into consideration on some of the major’s factors and problems regarding tax and revenue after discussion with tax administration, tax experts and tax payers taken for analysis in this paper. In order to ensure that appropriate decisions are made and adequate taxation system is prepares, the taxation expertise have to think over different criteria and identify those that can effectively contribute to adequate taxation and satisfy the requirement of government of Nepal. According to tax administration, tax experts and tax payers, we have taken thirteen variables and its sub variables for analysis which effect on taxation and revenue for Nepal. This variables and sub variables are shown in Fig 1, AHP decision model for creating adequate taxation and revenue proposal.

Development of a Hierarchical Decision Model

As mentioned before that AHP is used for hierarchical structure and MCDM is used to decision making process. So, this paper adopts AHP to work out adequate taxation and revenue proposal for Nepal. For the decision problem, it is necessary to develop a hierarchical decision model before data collection. This study illustrated the decision model in Fig. 1 and this is separated into three major levels as hierarchy stated (goal, objectives and design criteria).Goal describes the decision problem and this study attempts to work out the most adequate taxation and revenue proposal for Nepal. Therefore the goal is to design the best proposal. Second is the objectives, which consisted of thirteen aspects:Major causes towards poor tax paying habit, Ways of enhancing tax paying habit, Difficulties during paying tax, Drawback of ITA 2002 to collect more government revenue, Opinion towards the objective of income tax in Nepal, Major problems facing by ITS to achieve its objectives, Most important factors for improving, Opinion towards the nature of people involve in tax evasion, Opinion towards the way people evade tax, Opinion towards the causes of tax evasion, Opinion towards the ways to eliminate income tax evasion, Advantage of adopting online tax paying system, Ways of enhancing more income tax revenue of Nepal. Similarly third is the design criteria, in order to identify the priorities of three adequate development objectives in the second level. The relative importance of the different design criteria in the third level, a series of pairwise comparisons have to be performed by the experts. The elements in both levels are then weighted and the final score for each potential taxation and revenue is based on the overall view of a group of experts participating in the decision making process.

DataCollection

In order to have satisfied result, 60 experts were invited to participate in the judgment process. From those experts, 20 were selected from each tax administration, tax experts and tax payers respectively. According to their opinion, we have taken 12 variables and its sub variables for analysis shown in Fig. 1. Those variables are taken in consideration because it affect in taxation and revenue for Nepal according to expertise. They well know about the taxation and revenue generation, as they are government worker in those sectors and know the positive as well as negative impact due to various reasons. While conducting AHP, all experts are required to make judgments with reference to a 9-point Saaty scale as shown in Table 1 on the relative standings of different criteria in the matrices.

As Saaty (1995) have stated that making group decision is more preferable to relying on single decision maker as brainstorming, ideas sharing, discussion within the group can give better representation of the final results and reduce predetermine against or towards particular group of criteria. It was very difficult to gather 60 experts at a once and reach on decision in a group of experts with different preferences or levels of status and expertise within short time. Therefore, a set of questionnaire was developed and handed it over to tax administrator, tax experts and tax payers.

Table 1.9. Point scale for pairwise comparisons in AHP

Verbal Judgment or preference	Numerical Rating
Extremely preferred	9
Very strongly preferred	7
Strongly preferred	5
Moderately preferred	3
Equally preferred	1
Intermediate values between two adjacent judgments (when compromise is needed)	2,4,6 & 8

Source: Saaty 1980

The questionnaire received from various respondents have been arranged, tabulated and analyzed to facilitate the descriptive analysis of the study. In order to get an overall estimate of the priorities for each criterion in every level of hierarchy, the judgments from individual experts are than synthesized into a single judgment through geometric mean. For synthesizing individual judgments, the geometric mean is expressed in Eqs. 1 and 2.

$$(a_1, a_2, a_3, \dots, a_n) = \left(\prod_{i=1}^n a_i \right)^{1/n} \dots\dots\dots(1)$$

Thus,

$$G(a_1, a_2, a_3) = (a_1 \times a_2 \times a_3)^{1/3} \dots\dots\dots(2)$$

Where G = Geometric mean, a = Pairwise Comparison scale given by an expert, n = Number of experts.

Priority weights of each criterion

During the questionnaires, each expert (tax administration, tax experts, and tax payers) is requested to give their opinion

according to Saaty scale (Table 1). Although there are many scales that could be used for judgment process, the scale given by Saaty1980 is the standard used for AHP analysis. After data collection, for achieving goal the pairwise comparisons of the relative importance of the criteria and sub-criteria is constructed, calculated the priority weights of the criteria and sub-criteria based on data collected from experts and at last using result of above steps computed the priorities of each criteria as well as sub-criteria in achieving the goal of the hierarchy (Grace K. L. Lee 2008, Yaser, 2011). With the help of Mat lab software the relative weights of the objectives, corresponding criteria and the consistency ratios of the matrices are calculated. While analysis of matrices, if we found any matrix with an unacceptable C.R. value i.e. >0.10 then the expert is required to make judgment on the matrix again until C.R. value is acceptable. The experts can be explained about the concept of pairwise comparison, in order to improve the consistency in ratings. The global weights are calculated by multiplying the local weight of criteria and local weight of sub-criteria. These steps and methodology is elaborately mentioned by Grace K. L. Lee (2008) and Yaser (2011) in their research. Table 2 demonstrates the absolute weights of the adequate development objectives, final weights of the criteria and ranking of criteria after calculating the judgments from experts groups. The results show that criteria H (opinion towards the way people evade tax) with local weight (0.4628) had been prioritized as the first criteria need to be taken in consideration for improvement and adequate taxation and revenue for Nepal followed by J(Opinion towards the ways to eliminate income tax evasion)(0.3103), I(Opinion towards the causes of tax evasion)(0.07700), K(Advantage of adopting online tax paying system)(0.04490), F(Major problems facing by ITS to achieve its objectives)(0.02740), L(Ways of enhancing more income tax revenue of Nepal)(0.02660), G(Most important factors for improving)(0.02020), A(Major causes towards poor tax paying habit)(0.01420), E(Opinion towards the objective of income tax in Nepal)(0.00760), B(Ways of enhancing tax paying habit)(0.05700), D(Drawback of ITA 2002 to collect more government revenue)(0.00210) and C(Difficulties during paying tax)(0.00120).

DISCUSSION

After complete mathematical calculations, comparisons of each criterion (ranking them respectively) and apportioning those weights for each criteria as well as sub-criteria in each level is performed. As criteria weight is largest, it would be most important to consider for the improvement of tax and revenue generation for Nepal. These criteria and sub-criteria are ranked in table 2 and table 3 respectively. After calculating the global weights of each sub-criterion, the result is rearranged in descending order of priority as shown in Table 3.

According to this weight, we have ranked (highest weight is on top and respectively other) each criteria and sub-criteria. The combination of Table 2 and Table 3 give the finalized AHP decision model for bringing on adequate taxation and revenue generation for Nepal. Whereas, Table 2 is ranked of criteria according to its weight and Table 3 is ranked of sub-criteria with respect to its global weight.

Table 2. The final weight & rank of criteria for the adequate development objectives and design criteria

Rank	Criteria	Local Weight	Sub-Criteria	Local Weight	Global Weight			
1	H	0.4628	H1	0.6174	0.285733			
			H2	0.3002	0.138933			
			H6	0.0425	0.019669			
			H3	0.015	0.006942			
			H7	0.0129	0.005970			
			H8	0.0077	0.003564			
			H5	0.0022	0.001018			
			H4	0.0021	0.000972			
			2	J	0.3103	J1	0.4157	0.128992
						J5	0.2846	0.088311
J2	0.2522	0.078258						
J4	0.036	0.011171						
J3	0.0084	0.002607						
J6	0.0018	0.000559						
J7	0.0013	0.000403						
3	I	0.077	I2	0.4118	0.031709			
			I1	0.3447	0.026542			
			I5	0.1435	0.011050			
			I7	0.0819	0.006306			
			I3	0.0095	0.000732			
			I4	0.0048	0.000370			
			I6	0.0038	0.000293			
			4	K	0.0449	K3	0.3846	0.017269
						K1	0.3414	0.015329
						K4	0.1721	0.007727
K2	0.0933	0.004189						
K5	0.0063	0.000283						
K6	0.0023	0.000103						
5	F	0.0274	F3	0.4885	0.013385			
			F1	0.1962	0.005376			
			F2	0.1508	0.004132			
			F5	0.0654	0.001792			
			F9	0.0564	0.001545			
			F6	0.0201	0.000551			
			F4	0.0163	0.000447			
			F8	0.0051	0.000140			
			F7	0.0012	0.000033			
			6	L	0.0266	L2	0.2924	0.007778
L1	0.2712	0.007214						
L4	0.1852	0.004926						
L3	0.1395	0.003711						
L5	0.1117	0.002971						
7	G	0.0202				G3	0.5225	0.010555
						G4	0.2612	0.005276
			G5	0.1306	0.002638			
			G2	0.0653	0.001319			
			G1	0.0163	0.000329			
			G6	0.0041	0.000083			
8	A	0.0142	A4	0.3407	0.004838			
			A8	0.2145	0.003046			
			A3	0.1945	0.002762			
			A2	0.1736	0.002465			
			A1	0.0618	0.000878			
			A7	0.0061	0.000087			
			A5	0.0047	0.000067			
			A6	0.0041	0.000058			
			9	E	0.0076	E1	0.4839	0.003678
						E2	0.4839	0.003678
E3	0.0303	0.000230						
E4	0.0019	0.000014						
10	B	0.0057	B1	0.5795	0.003303			
			B4	0.3863	0.002202			
			B5	0.0161	0.000092			
			B2	0.0121	0.000069			
			B3	0.006	0.000034			
11	D	0.0021	D4	0.3838	0.000806			
			D1	0.381	0.000800			
			D3	0.1907	0.000400			
			D2	0.0445	0.000093			
			12	C	0.0012	C4	0.3365	0.000404
C5	0.3165	0.000380						
C1	0.2265	0.000272						
C2	0.1103	0.000132						
C3	0.0102	0.000012						
Total		1.000000						

Table 3. Ranking of sub-criteria

Rank	Factors (Sub-Criteria)	Global Weights
1	H1 (Submitting false document)	0.285733
2	H2 (Not maintaining proper accounts of income earned)	0.138933
3	J1 (Strict tax laws, rules and regulation)	0.128992
4	J5 (Compulsory maintenance of accounts)	0.088311
5	J2 (Promotion and reward system to regular tax payer)	0.078258
6	I2 (Improper tax administration management)	0.031709
7	I1 (Inappropriate income tax policy)	0.026542
8	H6 (Over-reporting of expenses)	0.019669
9	K3 (Times save)	0.017269
10	K1 (Less procedural complication)	0.015329
11	F3 (Inefficient income tax administration)	0.013385
12	J4 (Timely assessment of tax)	0.011171
13	I5 (Corruption in tax authority)	0.011050
14	G3 (Clear income tax act, rules and regulation)	0.010555
15	L2 (Simplifying tax laws)	0.007778
16	K4 (Less paper work)	0.007727
17	L1 (Educating tax payers)	0.007214
18	H3 (Operating business transaction in different names)	0.006942
19	I7 (Political instability)	0.006306
20	H7 (Not reporting or under reporting of incomes)	0.005970
21	F1 (Inadequate economic policy)	0.005376
22	G4 (Effective income tax administration)	0.005276
23	L4 (Efficient income tax administration)	0.004926
24	A4 (Lack of incentives to regular tax payer)	0.004838
25	K2 (Ease of access)	0.004189
26	F2 (Complicated income tax act, rules and regulations)	0.004132
27	L3 (Incentives to regular tax payers)	0.003711
28	E1 (To improve government revenue)	0.003678
29	E2 (To meet government expenditure)	0.003678
30	H8 (Maintaining different sets of invoices)	0.003564
31	B1 (Encouraging people)	0.003303
32	A8 (Increasing tax rate)	0.003046
33	L5 (Imposing fines and penalties)	0.002971
34	A3 (Widespread practices of illegal business)	0.002762
35	G5 (Adopting online tax paying system)	0.002638
36	J3 (Strict actions against corrupter personnel)	0.002607
37	A2 (Lack of knowledge of taxation)	0.002465
38	B4 (Clear public expenditure)	0.002202
39	F5 (Lack of training and incentives to tax personnel)	0.001792
40	F9 (Inappropriate tax rate and exemption limit)	0.001545
41	G2 (Honest tax payers)	0.001319
42	H5 (Fragmentation of incomes)	0.001018
43	H4 (Maintaining multiple sets of bank account)	0.000972
44	A1 (Poverty of tax payer)	0.000878
45	D4 (Inappropriate exemption limit)	0.000806
46	D1 (Ineffective income tax act)	0.000800
47	I3 (Widespread illegal business activities)	0.000732
48	J6 (Fines and penalties to tax evader)	0.000559
49	F6 (Difficulties in maintaining account for tax purpose)	0.000551
50	F4 (Lack of education to tax payers)	0.000447
51	C4 (Unnecessary time consuming)	0.000404
52	J7 (Rewards to the information giver about tax evasion)	0.000403
53	D3 (High tax rates)	0.000400
54	C5 (Unclear provision of income tax laws)	0.000380
55	I4 (Lack of knowledge about tax)	0.000370
56	G1 (Honest tax officers)	0.000329
57	I6 (Inappropriate tax rates)	0.000293
58	K5 (More accurate information)	0.000283
59	C1 (Procedural complication)	0.000272
60	E3 (To achieve national economic development)	0.000230
61	F8 (Practice of tax evasion)	0.000140
62	C2 (Improper co-operation and misbehave by tax officers)	0.000132
63	K6 (Security and safety of records)	0.000103
64	D2 (Complex words and lengthy)	0.000093
65	B5 (Fines and penalties)	0.000092
66	A7 (Lack of co-operation by tax administration)	0.000087
67	G6 (Political stability)	0.000083
68	B2 (Minimizing tax rates)	0.000069
69	A5 (Bad tax administration system)	0.000067
70	A6 (Complicated tax laws)	0.000058
71	B3 (Incentives to regular taxpayers)	0.000034
72	F7 (Lack of experts in tax management)	0.000033
73	E4 (To check inflation)	0.000014
74	C3 (Illegal incentives asked by tax personnel)	0.000012

The ranking list of sub-criteria can be seen that opinion towards the way people evade tax (H) and opinion towards the

ways to eliminate income tax evasion (J) took over the top most ranking in the list. The top ranking being the submitting false document (H1) (0.285733), 2nd rank is Not maintaining proper accounts of income earned (H2) (0.138933), 3rd rank is Strict tax laws rules and regulation (J1) (0.128992), 4th rank is compulsory maintenance of accounts (J5) (0.088311), 5th rank is occupied by promotion and reward system to regular tax payer (J2) (0.078258), 6th is improper tax administration management (I2) (0.031709) and similarly other sub-variables are ranked with respect to its weight. Where, lack of experts in tax management (F7) (0.000033) ranked 3rd last, to check inflation (E4) (0.000014) ranked 2nd last and illegal incentives asked by tax personnel (C3) (0.000012) is ranked last in the Table 3.

From our result, we can see that our global weight values are taken into 6 decimal numbers. This is because of our large number of criteria and sub-criteria. Its weight value varies with very less difference. With respect to this weight, we use to rank criteria and sub-criteria. MCDM method explains that each matrix total weight need to be 1, then only analysis result is correct. If incase total weight is less or greater than 1 then result have error and data need to be revised. So our each value is below one and its total weight values are 1.

Conclusion

Tax and revenue generation is one of the vital problem that country faces. Tax and revenue is the root of country economy as well as development of country. Looking all factors which effect tax and revenue, but hard to make decision by the experts that which is the most important factor need to be improved. With the suggestion and help of experts, we decided to do research in tax and revenue generation for Nepal. From the previous study in MCDM, as it is used in different field for decision making process we also take in consideration for our analysis. MCDM is very rarely used method for taxation and revenue, but from our findings it has successfully achieved its objectives. The main contribution of the work was the identification of the important criteria effecting for the tax and revenue generation process for Nepal. The AHP method was used to develop the model for adequate tax and revenue generation and evaluation of criteria affecting to it. As for the decision makers, AHP is widely recognized as an effective tool to provide a reasonable and logical solution. It helps to structure hierarchical decision model by breaking down the decision problem into various levels and weight the decision criteria by means of pairwise comparisons.

As Nepal is under developed country and now it is raising towards development. We believe that from our analysis and result, it will be so helpful to make decision by the experts as well as tax and revenue generation administration. This research gives the path to be followed for the improvement of tax and revenue generation for Nepal, which factors plays main role to effect tax and revenue generation and factors need to take in consideration according to rank wise (table 2 & table 3) mentioned in this research paper above for improvement. In addition, Nepal tax administration could be satisfied and benefited using this result by improving main problems in right time and also improving its economic condition.

REFERENCES

- Adhikari, Ram Prasad. 1995. "Tax Elasticity and Buoyancy in Nepal." *Economic Review* 8.
- Amit Y., Maria A., Mohsin A. and Sadhana T 2015. Analytical Hierarchy Process (AHP) for Analysis: Selection of Passenger Airlines for Gulf Country. *International Journal of Scientific and Engineering Research*. 6(3), 379-383.
- Banai, R. 2005. Anthropocentric problem solving in planning and design, with analytic hierarchy process. *Journal of Architectural and Planning Research*, 22, 107–120.
- Cheng, E. W. L., Li, H. and Yu, L. 2005. The Analytic Network Process (ANP) approach to location selection: A shopping mall illustration. *Construction Innovation*, 5, 83–97.
- Cook, T., Falchi, P. and Mariano, R. 1984. An urban allocation model combining time series and analytic hierarchical methods. *Management Science*, 30, 198–208.
- De Montis, A., De Toro, P., Droste-Franke, B., Omann, I. and Stagl, S. 2000. Criteria for quality assessment of MCDA methods. In: 3rd Biennial Conference of the European Society for Ecological Economics. ESEE, Vienna, 3–6 May 2000.
- Fletcher, Kevin 2002. "Tax Incentives in Cambodia, Lao PDR, and Vietnam," IMF Conference on Foreign Direct Investment: Opportunities and Challenges for Cambodia, Lao PDR and Vietnam, Hanoi, Vietnam, August, 2002.
- Grace K.L. Lee, Edwin H. W. Chan 2008. The Analytic Hierarchy Process (AHP) Approach for Assessment of Urban renewal Proposals. Springer Science+Business Media B. V. 2007. Soc Indic Res (2008) 89:155-168 DOI 10.1007/s11205-007-9228-x.
- Khadka, R. B. 2001. Value added tax: The concept, international experiences and its application in Nepal, *Value Added Tax Four Years of Implementation*. Kathmandu: Inland Revenue Department and Value Added Tax Project.
- King, John, Graham Holland, AdrienGoorman, and Dag Hansen 2003. "Nepal: Next Steps in Tax Reform," IMF Technical Assistance Report, June 2003.
- Klemm, Alexander and Stefan Van Parys 2009. "Empirical Evidence on the Effects of Tax Incentives," IMF Working Paper WP/09/136.
- Mukul, G. Asher. 1977. "Income Sensitivity of the Singapore Income Tax System." *HongKong Economic Papers* 11, April.
- Robert L. N, Ronald P.H 1992. Using the analytic hierarchy process to structure the supplier selection procedure. *International Journal of Purchasing and Materials Management, Spring 1992*; 28, 2; ABI/INFORM Global pg. 31.
- Saaty, T. L. 1980. *The analytical hierarchy process: Planning, priority setting, resource allocation*. McGraw-Hill, New York.
- Saaty, T. L. 1995. *Decision making for leaders: The analytic hierarchy process for decisions in a complex world*. RWS Publications, Pittsburgh.
- Shen, Q., Lo, K. K., Wang, Q. 1998. Priority setting in maintenance: A modified multi-attribute approach using analytical hierarchy process. *Construction Management and Economics*, 16, 694–702.
- Yaser N. Alsuwehri, 2011. *Supplier Evaluation and Selection by Using the Analytical Hierarchy Process Approach*. Engineering Management Program, Field Project, Fall Semester (2011).
- Zee, H. H. 1995. *Value added tax: Tax policy handbook*, edited by ParthasarathiShome, Washington DC: Fiscal Affairs Department, International Monetary Fund.
