

# AN EVALUATION OF THE OUTCOMES OF THE URBAN DEVELOPMENT PLANS WITH SPECIAL REFERENCE TO MORATUWA URBAN DEVELOPMENT PLAN

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## ABSTRACT

*Plan outcome evaluation (POE) is very significant rather than focusing on planning process, usefulness of plan, content and quality of plan. POE has been ignored in the field of planning due to lack of proper POE method. This study focuses on the ex post facto evaluation considering the outcomes of action projects of development plans and aim to develop a POE method to evaluate outcomes of development plan towards the achievement of its objectives quantitatively since no one has made such an attempt. Achieving outcomes of development plan directly affect for sustainable urbanisation. A comprehensive literature survey revealed that adaptation of the components of objective driven, theory-driven and theory-based, utilization-driven and theoretical data-driven evaluation methods will lead to overcome related issues on plan outcome evaluation and identified basic four steps suitable to incorporate in any POE method. This developed POE method comprises four steps including mathematical models. Field surveys and questionnaire surveys were carried out to identify public perception on achievement of outcomes of action projects. Developed POE method can be used as a progress monitoring tool and as an outcome evaluation tool. This POE method will be a useful tool for planners, project managers and policy makers to improve planning practices and provide necessary knowledge for revising plans in order to ensure the sustainable urbanisation. This study can be extended to evaluate the outcomes of development plan when objectives are clear and measurable further considering theory, process and objectives driven methods.*

**Keywords:** *Outcomes of Development Plan; POE Method; Public Perception.*

## 1. INTRODUCTION

The implementation of development plans and the evaluation of outcomes of plans have been ignored for decades in the field of planning (Houghton, 1997). Since the mid-1990s planning scholars have given considerable attention to define the characteristics of plan quality and to evaluate the effects of plan making practices on plan quality (Erickson *et al*, 2004, Laurian, 2010). In the late 1990's it was considered reevaluating the outcomes of planning activities, rather than focusing on planning processes (Houghton, 1997, Carmona and Sieh, 2008). Verifying planning outcomes can also contribute to the accountability and trust in, public managers and institutions, and should guide improvements in plans and practices (Kaiser *et al*, 1995). Snyder and Coglianese (2005) show that the positive outcomes are becoming appropriately relevant and the post facto evaluation of plan outcomes should become an essential part of the planning practice. And also outcome evaluation is the true test of managing effectiveness (Hoch, 2002)

Impacts of action projects are the outcomes of development plans, which are to be contributed to the development impact of the planning region (Bagwat and Sharma, 2007). They are accountable for achieving objectives of development plan and contributing to the development impact (Morrison and Pearce, 2000). As Carmona (2007) argues a final analysis of the outcome of development plan in any

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one place of development processes over time, it can only be made when the actual outcomes from the process itself is being evaluated. Laurian *et al.* (2010) introduces conformance-based evaluation which assume observable causal linkages between planning goals, activities and outcomes and require clearly defined goals and objectives which can be measurable with measurable indicators and logically derived planning strategies. But in practice, these evaluations are complicated because plan objectives are not always clear and measurable and multiple strategies are used to advance objectives (Seasons, 2003, Snyder and Coglianesi, 2005). Outcomes also are not necessarily measurable and it is extremely difficult to attribute observed outcomes to plans (Carmona and Sieh, 2008). Since there is no proper POE method, planners cannot know whether plans achieve their objectives, or learn from the results of past interventions to improve planning practice (Baehler, 2003, Seasons, 2003). Therefore this study is supposed to develop and test a POE method as main objectives of the study. This POE method will be a useful tool to planners, project managers and academics seeking to assess the outcomes of plans in local level. The other objectives supposed to be fulfilled while carrying out this study are identifying the importance and progress of planning evaluation, types of outcome evaluation, past applied POE methodologies and related limitations and weakness on them. Then it was identified suitable elements, basic steps and proposals to be taken into account when developing proposed POE method.

## **2. PLANNING EVALUATION**

Planning is the process of analysing information, making decisions and formulating plans of action for future. Planning can be undertaken by government in many sectors with appropriate methodologies, and techniques to achieve relevant goals and objectives (Glasson, 1982, Bruton and Nicholson, 1987). Development plan will provide the spatial framework for promoting and regulating the physical development of lands and buildings in each of the urban area to ensure the sustainable urbanisation (Bruton and Nicholson, 1985). Patton (1989) and Michael (2002) states that planning evaluation is the systematic assessment of plans, planning processes, and outcomes compared with explicit standards or indicators and it is important since it ensures accountability, improvement and knowledge of the development plan. Berke (2006) states three types of planning evaluations as process, impact and outcome evaluations. Planning evaluation can be conducted for different purposes as a priori or ex ante evaluation (Alexander, 2006), on-going monitoring or formative evaluation (Scriven, 1967) and ex post facto or retrospective evaluation (Baum, 2001, Snyder and Coglianesi, 2005). The literature on the ex post facto evaluation of planning outcomes is underdeveloped and actual outcome evaluations by practitioners are rare (Carmona, 2007, Carmona and Sieh, 2008).

### **2.1. BASIC ELEMENTS**

Evaluating the outcome of planning activities is very significant rather than focusing on planning process, usefulness of plan, content and quality of plan (Baer, 1997). There is less significance on evaluating outputs and impacts of plan. Evaluate planning outputs is evaluating policies, programmes, projects and regulations rather than outcomes (Baum, 2001). Impacts of the plan can be evaluated considering benefits in terms of implementing in strategies, actions, rules, regulations, policies, structure and systems (Berke *et al.*, 2006 and Corol, 1998). In rational perspective, it assumes that plan goals and objectives translate into policies and methods, which are implemented to address specific problems and yield expected outcomes. This is how legislation and planning mandates tend to be designed and how planners usually conceptualize their practice (Berke *et al.*, 2006 and Laurian *et al.*, 2010).

More recently, Carmona and Sieh (2008) investigates outcome assessments in planning, and best practices in performance evaluation. They show that the performance indicators have been used focused on development controls, and on the speed of the permitting process, which measures the outcome focusing mainly on user satisfaction. These studies are based on sophisticated analysis, but do not establish whether the outcomes observed are caused by planning activities or external factors. Mayne (2001) states that evaluation of strategies is best suited to evaluate the outcomes of local plan elements. It can be concluded that objectives of the plan, implementation of activities and outcomes of

planning activities should be considered as basic three elements of any POE method (Houghton, 1997, Laurian *et al*, 2010). Conformance-based evaluation method requires that plan objectives be clear and measurable with measurable indicators, but practically objectives are not always clear and measurable. Therefore proposed POE method should not be responsive to application of conformance-based evaluation method. Performance-based evaluation is well suited to evaluate comprehensive and strategic plans, seen as broad efforts to identify, formulate, and promote main vision and goals (Mastop and Faludi, 1997).

## **2.2. TYPES OF OUTCOME EVALUATION**

The policy and programme evaluation literature identify three types of outcome evaluations by providing their limitations and weaknesses. Laurian *et al*, (2010) have added a fourth pragmatic category, called as theoretical data-driven evaluation. First, objective-driven evaluation focuses on whether the programme goals and objectives are achieved (Baer, 1997, Weiss, 1997). Most have been attempted to evaluate plans by adopting this approach (Berke *et al*, 2006, Laurian *et al*, 2010, Talen, 1997, Weiss, 1997). Second, theory-driven evaluation seeks to clarify the relationship between the plan and the outcome (Berke, 2006, Weiss, 1997). Theory-driven evaluation is used infrequently and has been criticized as 'esoteric' (Patton, 1989) and 'having only marginal influence on evaluation practice' (Weiss, 1997). The third form of evaluation was proposed by Patton (1997) in response to the practical inapplicability of theory-driven evaluation. This is utilization or stakeholder focused evaluation. Fourth, theoretical data-driven evaluation is designed to track changes over time because planners often evaluate plan impacts using available data and indicators. The proposed POE method should be built on components of objective driven evaluation, theory-driven and theory-based evaluation, utilization-driven evaluation and theoretical data-driven evaluation. The combination of components for all these four types of outcome evaluation will lead to overcome the main barriers of POE.

## **2.3. BARRIERS FOR EVALUATING PLAN OUTCOMES**

Plan outcomes are rarely evaluated by planning agencies (Carmona and Sieh, 2008, Seasons, 2003). This gap can be explained by several factors. First, evaluation requires selecting indicators of success and obtaining relevant data and information (Baum, 2001, Snyder and Coglianese, 2005).

Incompatible goals need to be reinterpreted by evaluators to select evaluation criteria and indicators (Seasons, 2003). In addition, evaluators must choose which intended and unintended outcomes to assess (Hoch, 2002, Snyder and Coglianese, 2005).

Monitoring and evaluation also require appropriate and reliable data to identify trends and changes of the plan implementation (Baehler, 2003, Seasons, 2003). Yet, very few plans are provided for monitoring processes to evaluate the effects of land-use decisions, or identify discriminating indicators suitable for linking plan objectives to measurable outcomes, especially in the area of spatial planning (Snyder and Coglianese, 2005). Thus, evaluators often rely on proxy variables, which are often too removed from planning decisions to talk much about their outcomes (Baum, 2001). Secondly, evaluation also assumes that weaknesses should be identified to promote change, but more organizations and administrators reluctantly can resist evaluations they perceive as threatening (Baehler, 2003). Even if committed, many planning agencies, and especially local authorities, often lack of resources in time, staff, or expertise to support plan monitoring or evaluation (Baehler, 2003, Seasons, 2003).

Third, evaluating plan outcomes is methodologically difficult. Existing evaluation methods are generally not designed to address the physical, environmental, and spatial components of planning. The main difficulty faced by evaluators is the lack of a generally accepted *ex post facto* planning outcome evaluation methodology (Baehler, 2003, Talen, 1997). The most problematic methodological question is the attribution, or causality, question. It is difficult to distinguish the outcomes of planning activities from other factors (Carmona and Sieh, 2008). Evaluation assumes the ability to track the outcomes of an intervention with full information, and without ambiguity (Baum, 2001). Finally identifying a cause

relationship between planning decisions and outcomes is difficult (Baum, 2001, Seasons, 2003). Talen (1997) argued that “explanatory chains linking objectives and outcomes are virtually unattainable” but that “associations between plans and outcomes or between intended objectives and actual implementation can be ascertained”. Eventhough, there are more barriers for evaluating outcomes, two POE methodologies have been developed by Mayne (2001) and Laurian *et al*, (2010) to evaluate the outcomes of plan under certain circumstances of related problems.

### **3. DIFFERENT POE METHODOLOGIES AND RELATED PROBLEMS**

Mayne (2001) has proposed a pragmatic contribution analysis based on 'believable association' by: (1) acknowledging the attribution problem (2) identifying the logic of the plan (3) describing the expected behavioral changes of the target population (4) using discriminating indicators (5) tracking performance over time to establish the co variation of plan and outcomes (6) exploring exogenous explanations for the outcomes and (7) triangulating evidence from expert opinion, case studies, and other sources to confirm the findings. In other words, a pragmatic approach of evaluation relying on expert knowledge and multiple sources is the only method proposed so far to address the attribution question.

Laurian *et al*, (2010) presented an innovative POE methodology developed in New Zealand, where localities are required to monitor the effectiveness of their plan policies, methods and regulations. This ex post facto POE approach is practical, reflexive, and hybrid. It combines evaluation strategies best suited to evaluate the outcomes of local plan elements (Davidson, 2000, Hoch, 2002, and Mayne, 2001). It does not assess the impacts of strategic plans overall, but rather the specific outcomes of discrete plan elements with specific goals and objectives. It seeks to answer these questions: Are plan objectives achieved? Why or why not? Are observed outcomes attributable to the plan? This methodology builds on theory-based and objective-driven evaluation components. It (1) develops and builds on a conceptual model of plan logic and implementation (2) investigates associations between plan goals and outcomes and (3) uses structured expert assessments to identify causal relationships between plan provisions and outcomes.

These two methodologies laid a foundation by deriving basic four steps that should be included in proposed POE method. They are:

- Identify logical sequence and coherence of plan elements (Theory-based evaluation and theory driven evaluation)
- Identify the associations between objectives and outcomes (Objective-driven evaluation)
- Measure the outcomes using data from samples of observations (Utilization driven evaluation)
- Obtain an overall assessment(Theoretical and data driven evaluation)

These methods facilitated to estimate whether planning interventions and changes contributed to achieve expected outcomes in yield weak, moderate, or strong positive or negative and obtain an overall assessment qualitatively. There is no quantitative method to evaluate the outcomes of plan towards the achievement of its objectives. In order to overcome the problems associated with current POE methodologies, the proposed POE method should not be sensitive for Conformance based approach and Performance based approach. When implementation is poor, attempts to link outcomes to plans become meaningless (Laurian *et al*, 2010). Even though, the proposed POE method should be sensitive to evaluate the outcomes of poor or not implemented activities as well. Then the proposed POE method will be more effective in a case of evaluating the outcome of any development plan.

#### **3.1. PROPOSALS TO OVERCOME THE ISSUES**

Identifying relationship between objectives and outcomes of plan is required since outcomes are the results that link to the immediate objectives as described in the development plan (Bagwat and Sharma, 2007). Berke (2006) shows that stakeholders should be get involved in the process of evaluating the outcome of plan. Reviewing public perception is a good technique to study the present situation and evaluate the outcomes of plan (Marques *et al*, 2010, Baum, 2001, Seasons, 2003).

Fourth, Planners must be aware of the factors that affect stakeholder participation (Burby, 2003) because planners' failure to recognize the differences in evaluation between experts and public may lead to figurative protests (Norton, 2008). According to the Section 8D of UDA Act of No: 4 of 1982, public are being consulted only during post preparation of development plan and that should be done for plan evaluation. Local authorities' responsibility is to get involve people in both planning and implementing activities (Circular No 01 under reference 08/01/38 dated on 20/03/1985).

### **3.2. APPLICATION OF PLANNING, QUANTITATIVE AND STATISTICAL TECHNIQUES**

Reviewing public perception is one of the techniques which can be applied to study the present situation, and to evaluate the outcomes of projects, since it has being benefited greatly throughout the past practices (Berke, 2006), Seasons, 2003, Marques *et al*, 2010). Objective achievement matrix is another advance planning technique which has been applied to identify the relationship between objectives, proposed strategies and action projects (Lichfield, 1996, Sager, 2003). This technique is applied to develop the first step of proposed POE method. Field surveys and questionnaire surveys were selected as the data collection technique, since they will be supported for reviewing public perception on the outcomes of action projects of Moratuwa development plan. Accordingly 100 people who live in Moratuwa MC Area, 20 project officers who have been involved in eachproject and 05 planning officers of Moratuwa MC were selected randomly, for a 125 sample size. In this study, the researcher cannot control the independent variables (Kraemer, 2002) that are occurred as outcomes of the development plan itself. Therefore, experiment is not applicable for this study. That is why field surveys andquestionnaire surveys were carried out as suitable techniques to investigate the outcomes of all action projects of Moratuwa development Plan.

## **4. POE METHOD AND ITS APPLICATION TO MORATUWA URBAN DEVELOPMENT PLAN**

The developed POE method is suitable to apply in planning industry for effective management of plan implementation, evaluation of outcomes of planning activities (action projects), and to overcome the issues pertaining to the evaluating of outcomes of development planwhile ensuring sustainable urbanisation. The author has developed this POE method by presenting four basic steps which comprise mathematical models and methodological descriptions. They are:

- Step One - Identify the logical sequence and coherence of plan elements (Theory-based and theory driven evaluation)
- Step Two - Identify the associations between objectives and outcomes (Objective-driven evaluation)
- Step Three - Measure the outcomes of action projects (Utilization driven evaluation)
- Step Four - Calculate Overall assessment Value (Theoretical and data driven evaluation)

Moratuwa urban development plan has been constituted in 2004 under Section 8F of the Urban Development Authority Act No.4 of 1982 with an intension to implement main six action projects by year 2014. Out of those projects, three action projects have been implemented successfully (which are highlighted in Table 3) while other three action projects are being implemented. Application of objective achievement matrix under step one of above POE method emphasized that three action projects are directly related to achieve specific objective separately while other three links to achieve two or three objectives together (refer first two columns of Table 3).

As an application of objective-driven evaluation method, under the step two it was identified relevant criteria of objectives ( $C_j$ ) where 'j' is the number of criteria of relevant objectives. Accordingly each action projects directly related to achieve main three elements of objectives (refer third column of table3). Activities of each action projects ( $A_i$ ) where 'i' is the number of activities of each action project ( $i = 1, 2, 3 \dots n$ ), their progress and the implementation level were identified under the same step (refer first three columns of Table 2). The level of implementation of each activity was evaluated giving a percentage value, as 1 for totally implemented activity, 0.75, 0.50, 0.25 for partly implemented activity and 0 for not implemented activity. Not implemented activities were not



evaluated. These values are calculated specially, based on the perception of planning officers and project officers rather than considering perception of community who are not much aware about the level of implementation. The actual level of implementation of each activity was got clarified considering the confirmation of planning officers of Moratuwa Municipal Council. This proposed POE method will be more effective in a case of evaluation the outcome of any development plan since this method is more applicable for partly implemented development plan as well. And also this will become meaning full for meeting even non measurable objectives as well.

Under step three, Outcomes of action projects were evaluated considering the impact level of each activity of each action project. This was done using data from samples of questionnaire surveys which issued for planning officers, project officers and community. This step totally depends on utilization driven evaluation by calculating percentage of respondents for each activity against each criteria and impact level. It is required to consider intensity of the contribution of each activity of each action project to achieve the identified each criteria of relevant objectives. Since all identified action projects are positively contribute to achieve relevant objectives of development plan, Assume that there will not be a situation which has no impacts and negative impacts of action projects and related activities, hence the zero value and negative values are not considered. Intensity of the contribution of each activity is evaluated considering the impact level as low (1), moderate (3) and high (5) by applying 1,3,5 likert scale (Brown, 2011) to give weightage for each impact level. When there is low impact level, scale is given as 1 and it is three times as higher for moderate level (3) and five times as higher for high level (5).

In order to have an overall assessment value for the evaluation of outcomes of development plan, step four was developed including mathematical models such as multiplication model and Additive models. Activity vs Criteria values ( $A_iC_j$ ) were calculated to indicate the intensity of the contribution of outcome of each activity of each action project against criteria of related objectives.  $\sum A_iC_j$  values are calculated by applying “Weighted Scoring method”. The percentage values of respondents against each impact level under each criteria of objectives were multiplied by related percentage of implementation level of activity and weight of the impact level to find  $A_iC_j$  value for each activity under particular criteria. Then all  $A_iC_j$  values under each activity against relevant objective criteria were added to the  $\sum A_iC_j$  values for those relevant criteria separately.

$$\text{Total Activity Vs Criteria Value} = \sum_{i=1}^n A_iC_j$$

Finally, Criteria Achievement Values ( $CAV_j$ ) was derived by considering the maximum level of contribution of all activities to achieve the identified each criteria of relevant objectives. This value indicates the contribution level of outcome of each action project towards the achievement of criteria of related objectives.

$$\text{Criteria Achievement Values (CAV}_j) = \frac{\sum_{i=1}^n A_iC_i}{5n}$$

This value interprets the strength of the intensity of contribution of outcomes of action project towards the achievement of related criteria of objectives. This can be proposed in the presentation format indicating in Table 1 for the easiest of understandable.

Table 1: Achievement Level of Objective Criteria

Criteria Achievement Values (CAV <sub>j</sub> )	Achievement Level
0.01% - 20.00%	Very Low
20.01% - 40.00%	Low
40.01% - 60.00%	Moderate
60.01% - 80.00%	High
80.01% - 100.00%	Very High

Table 2: Calculating ( $\Sigma A_i C_j$ ) and  $CAV_j$  Values for Lunawa Housing Development Project

Implemented activities under Housing Development Project ( $A_i$ )	Implemented or Not Y/N	Level of Implementation %	Criteria of the Objectives ( $C_j$ )													
			C <sub>1</sub> .To Improve standard of living				C <sub>2</sub> .To provide better quality houses				C <sub>3</sub> .Provide infrastructure facilities					
			Impact Level			$A_i C_1$	Impact Level			$A_i C_2$	Impact Level			$A_i C_3$		
			Low	Moderate	High		Low	Moderate	High		Low	Moderate	High			
			1	3	5	1	3	5	1	3	5					
1.Developing hospital land by removing single storied buildings	Yes	1.00	0.70	0.20	0.10	1.80	0.40	0.30	0.30	2.80	0.80	0.20	0.00	1.40		
2.Constrcuting required number of houses for low income families	Yes	1.00	0.20	0.20	0.60	3.80	0.10	0.50	0.40	3.60	0.20	0.70	0.10	2.80		
3.Constrcuting outdoor dispensary	Yes	1.00	0.20	0.20	0.60	3.80	0.80	0.20	0.00	1.40	0.60	0.30	0.10	2.00		
4.Upgrading Road condition	Yes	1.00	0.50	0.10	0.40	2.80	0.70	0.10	0.20	2.00	0.40	0.30	0.40	3.30		
5.Provide common facilities (compound, park, drains )	Yes	0.75	0.60	0.20	0.20	1.65	0.80	0.20	0.00	1.05	0.80	0.10	0.10	1.20		
6.Provide water supply to all house holds	Yes	1.00	0.10	0.10	0.80	4.40	0.00	0.20	0.80	4.60	0.10	0.30	0.60	4.00		
7.Provide electricity for all house holds	Yes	1.00	0.00	0.20	0.80	4.60	0.00	0.30	0.70	4.40	0.00	0.10	0.90	4.80		
Total Activity vs Criteria value ( $\Sigma A_i C_j$ )							22.85					19.85				19.50
Criteria Achievement Value- $CAV_j = (\Sigma A_i C_j / 5n)$			65.29%		High		56.71%		Moderate		55.71%		Moderate			

Table 3: Calculating ( $\sum A_i C_j$ ) and  $CAV_j$  Values for All Six Action Projects

Action Projects	Objectives	Related Criteria of the objectives ( $C_j$ )	Criteria Achievement Value $CAV_j$	Achievement Level
1.Town Center Development Project	1. Development as a waterfront city	C1-City development C2-water front city	40.00% 35.80%	Low Low
	2.Improve the infrastructure facilities	C3-Improve infrastructure facilities	43.80%	Moderate
2.Katubedda Sub-Town Development project	2. Improve the infrastructure facilities	C1-Improve infrastructure facilities	26.00%	Low
	3.Provision of facilities to improve the industries in the town	C2-Provide facilities to improve industries	18.20%	Very Low
	4. Improvement of the fishing industry	C3-Improve fishing industry	23.20%	Low
3. Lunawa Lagoon Development Project	5. To protect natural resources, and maintain the development of the town and its environmental equilibrium	C1-to Protect natural resource C2-to maintain City development C3-for Ecological Balance	58.57% 59.00% 40.57%	Moderate Moderate Moderate
4.Lunawa Housing development project	6. Improve the standards of living by providing housing and infrastructure facilities for low income settlements in the town	C1-to Improve standard of living C2-to provide better quality houses C3-Provide infrastructure facilities	65.29% 56.71% 55.71%	High Moderate Moderate
5. Coastal Road Development Project	7. Establishment of an efficient transport system	C1-to establish efficient transport system	32.40%	Low
	8. Maintenance of reservations of public roads and waterways	C2-to maintain reservation of public roads C3-to maintain reservation of water ways	36.20% 37.40%	Low Low
6.Parks Development Project	9. Establishment of adequate number of parks, playgrounds and open spaces	C1-Provision urban recreational facilities C2-Optimum utilization of Urban land C3-Provide open space	49.43% 54.71% 50.86%	Moderate Moderate Moderate



When  $CAV_j$  indicates 100%, the idea is all activities of the action project have been implemented 100% by delivering all expected outcomes to achieve anticipated criteria of related objectives. Less than 100% of  $CAV_j$  values indicate that either activities of related action project have not been fully implemented or impacts have not fully achieved through anticipated outcomes or both. Calculating  $(\Sigma A_i C_i)$  and  $CAV_j$  values for Lunawahousing development project as a one action project out of six of Moratuwa development plan (Table 2) and the  $\Sigma A_i C_i$  and  $CAV_j$  values for all six projects (Table 3) can be shown as follows.

## **5. CONCLUSIONS**

According to the results of the application of POE method, outcomes of all three implemented action projects have been contributed to achieve relevant criteria of objectives in moderate level by indicating  $CAV_j$  values in between 41% to 65%. Other partly implemented three action projects have been contributed to achieve related criteria of objectives in low level by indicating  $CAV_j$  values in between 18% to 40%. It was suggested that this developed POE method was applied as a tested method to evaluate the outcomes of development plan and should be updated according to the dynamic nature of the planning industry.

### **5.1. LIMITATIONS**

Outcomes of Moratuwa urban development plan were evaluated towards the achievement of its objectives considering the impact level of all identified action projects only. This case study reflects the stakeholders' satisfaction on the outcomes of action projects but has not done a study about the planning process and theories which were applied to identify strategic action projects of selected urban development plan. The level of implementation of each activity of each action project was evaluated considering perception of planning and project officers only. The impact level of each activity to achieve related criteria of objectives were evaluated as low, moderate and high by giving assumed weightage values of 1, 3 and 5 consequently. Since criteria of objectives are ambiguous, it was needed to explain them to participants. This method should avoid selecting only stakeholders who will positively evaluate the plan's outcomes. There can be long time lags between plan adoption, implementation, project outcomes and development impacts. Therefore, this evaluation method is developed based on detailed information about project implementation, project outcomes and primary data which were collected through field observation and questionnaire survey.

### **5.2. CONTRIBUTION TO KNOWLEDGE**

This developed POE method will be a useful tool to planners, project managers and academics seeking to assess the outcomes of plans and as a progress measuring tool in local level. Because Criteria Achievement Value ( $CAV_j$ ) indicate the intensity of contribution of the action project to achieve related criteria ( $C_j$ ) of its relevant objectives considering outcomes of all implemented and not implemented activities. Results of the application of POE method and past interventions facilitate to learn and improve planning practice, while providing the necessary knowledge to revise plans, improve performance of action projects, and increase the transparency and accountability of planning practice. The process of application of this POE method involves all relevant stakeholders to evaluate the outcomes of plan. Then community will identify how the plans have shaped up their communities and they will help the planners, project managers and the politicians to achieve the expected outcomes.

### **5.3. FURTHER RESEARCH**

This POE method can be further modified with the factors suggested by the professionals and developed into a mandatory check list. The quality of the POE method can be enhanced by incorporating evaluation aspects of planning process, and theories which were applied to identify strategic action projects of selected urban development plan when objectives and outcomes are measurable (Laurian, 2010). The effectiveness of this POE method in Sri Lankan planning industry

should be tested with a few more implemented development plans.

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