CO-PO Attainment of Masters of Urban Planning Batch 2021-2022

Course Outcomes (COs) and Program Outcomes (POs)

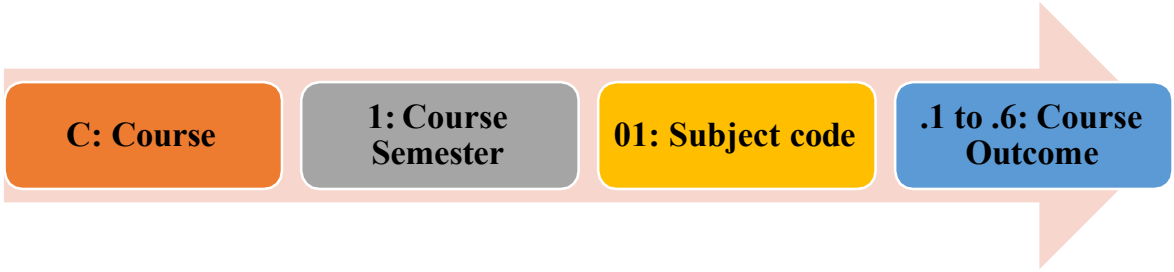
1.1. Establish the correlation between the courses and the Program Outcomes & Program

1.1.1 Course Outcomes (COs) (05)

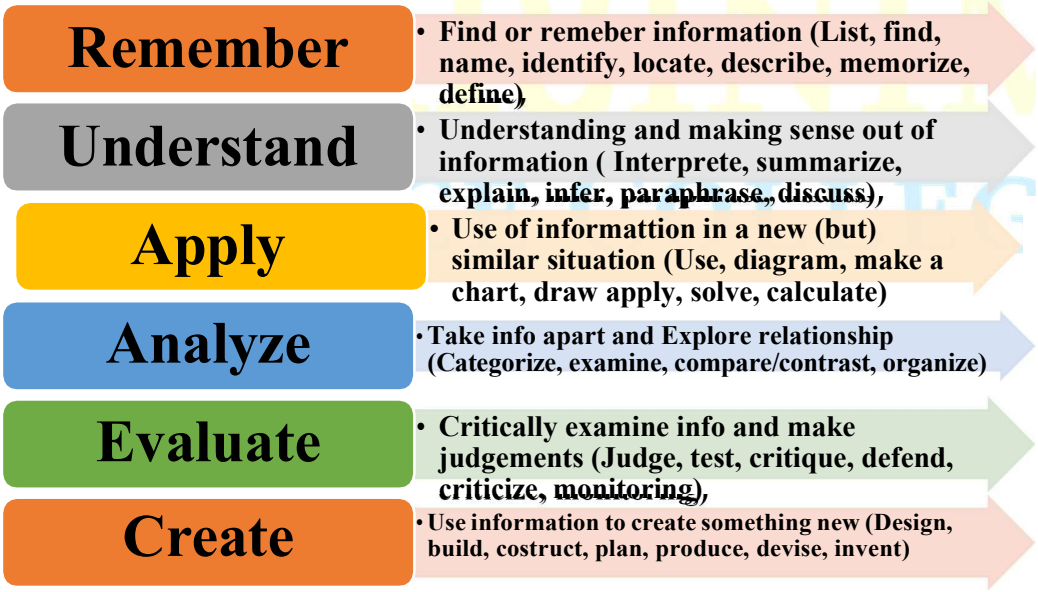
Course outcomes (COs) are the statements indicating what a student can do after the successful completion of a course. Every Course leads to some Course Outcomes. The CO statements are defined by considering the course content covered in each module of a course. For every course there may be 4 to 6 COs. The keywords used to define COs are based on Bloom's Taxonomy. The Course Outcomes are defined in accordance with the University curriculum.

Course coding system:

Example: 34010101….34010201….34010301….34010401



Bloom's Taxonomy:



CO-PO matrices Methodology

- Students need to develop certain qualities to effectively contribute to industry, academia, and society. These qualities are defined as Program Outcomes (POs), and the curriculum is structured to foster them.
- Based on how well the course content supports achieving each PO (e.g., PO1, PO2, PO3, etc.), courses are rated as substantial (3), moderate (2), or slight (1) in their contribution.
- Faculty members align Course Outcomes (COs) with POs, considering the broader goals and relevance of the course. This mapping is finalized through discussions in departmental committee meetings and institution-wide faculty meetings, resulting in the CO-PO Matrix.
- The correlation between COs and POs are established through the process given below:

Step 1: COs defined by the faculty or given by council are mapped with the Program outcomes.

Step 2: For each course, the average value of POs is obtained.

Step 3: Step 2 is carried out for all the courses in the program.

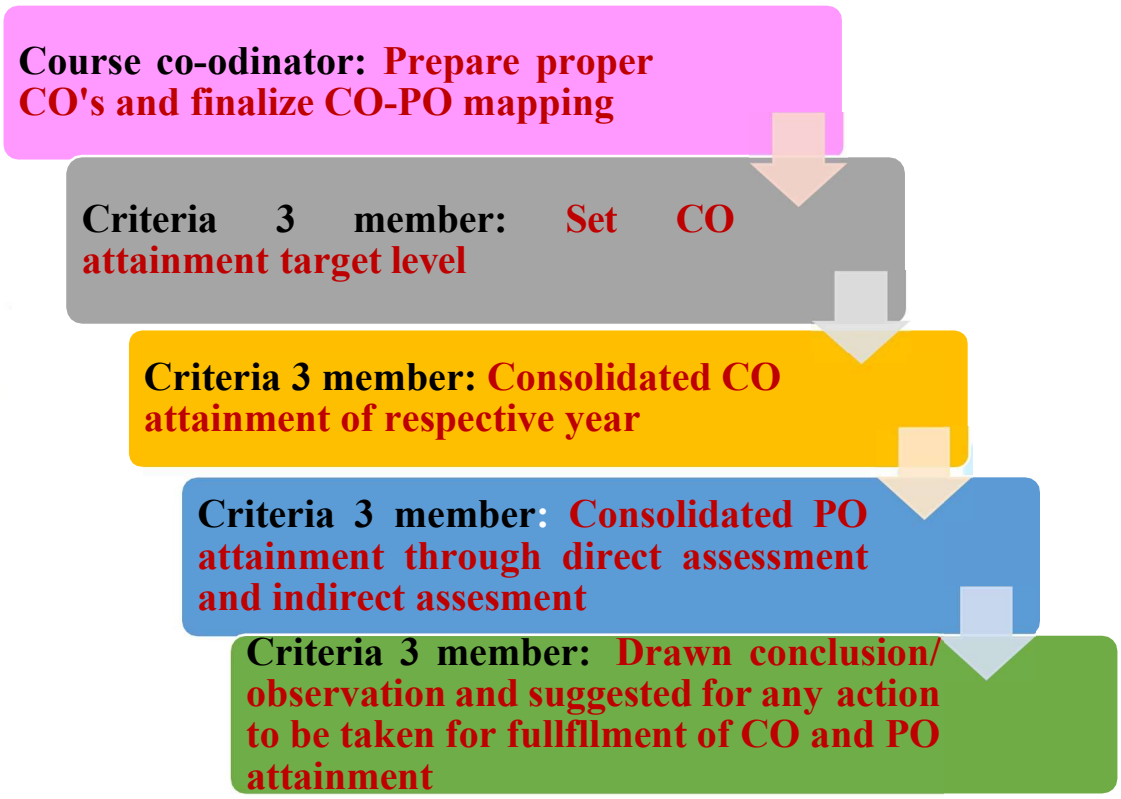


Figure 1: Process involved in CO-PO mapping and attainment

Target level set for CO attainment from results

Target Set (Attainment Level)	Percentage result
Level 1	55-69
Level 2	70-84
Level 3	≥85

Course-PO matrix of courses for all years of study

The mapping of all the courses with PO's is summarized and presented in following table 1.

Note: Correlation levels1, 2 or 3, as defined below:

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

'-' Indicates there is no correlation,

Table 1: Correlation of CO with POs (All courses)

Course code	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	Overall CO Average
34010101	1.60	2.00	2.00	3.00	1.00	-	3.00	-	1.00	1.33	1.92
34010102	1.80	2.00	2.00	3.00	1.00	1.00	3.00	-	1.00	1.33	1.91
34010103	1.75	2.00	1.67	3.00	1.00	1.00	3.00	1.00	1.00	1.33	1.85
34010104	1.80	2.00	1.67	3.00	1.00	1.00	3.00	1.00	1.00	1.33	1.54
34010105	1.75	3.00	1.75	2.00	1.25	-	3.00	1.00	1.00	1.33	1.63
34010106	1.60	2.00	1.40	2.00	1.40	1.00	3.00	1.00	1.00	1.25	1.43
34010201	1.67	1.50	1.67	1.67	1.50	1.00	3.00	1.00	1.00	1.33	1.41
34010202	1.50	1.00	1.33	1.33	1.40	1.00	1.33	1.00	1.00	1.25	1.22
34010203	1.50	1.50	1.33	1.67	1.67	1.33	1.33	1.25	1.67	1.50	1.44
34010204	1.67	1.80	1.50	1.50	1.50	1.50	1.50	1.25	1.67	1.67	1.55
34010205	3.00	3.00	2.50	2.00	3.00	2.00	3.00	2.00	2.00	-	2.47
34010206	2.00	3.00	2.50	1.67	1.67	2.80	2.00	3.00	-	-	2.34
34010301	2.25	2.33	2.00	2.00	2.00	2.50	2.00	2.00	2.00	-	2.09
34010302	1.33	2.33	1.50	2.00	1.67	1.33	1.67	2.50	1.00	-	1.74
34010303	1.25	-	1.67	2.20	1.25	1.75	1.00	1.50	1.00	-	1.46
34010304	1.25	-	1.00	2.40	1.00	1.60	1.00	1.00	-	-	1.49
34010305	1.80	2.00	1.80	1.60	1.50	3.00	2.00	1.50	-	-	1.80
34010306	2.33	2.00	2.75	1.60	2.00	2.33	2.00	1.00	1.67	2.00	2.03
34010401	2.00	1.33	2.20	2.50	-	-	-	1.75	1.33	-	1.84
34010402	1.75	1.33	-	2.40	-	1.80	1.33	2.00	-	-	1.82
34010403	2.00	2.00	2.00	1.33	-	1.00	3.00	-	-	1.60	1.79

1.2. Attainment of Course Outcomes

1.2.1 Describe the assessment components and processes used to gather the data upon which the evaluation of Course Outcome is based

The various assessment components and processes used to gather the data for the evaluation of Course Outcome are described as follows. The maximum marks and the weightage of each assessment component in the final grade are also summarized in the Table 2.

Below table shows the list of assessment processes:

Table 2: List of assessment processes

Academic Year	Semesters	Particulars	Marks
2021-22 & 2022-23	Odd Semester	Internal Examination (Assignment + Class Attendance + Internal Assessment)	50 (20+10+20)
		University Examination	50
	Even Semester	Internal Examination (Assignment + Class Attendance + Internal Assessment)	50 (20+10+20)
		University Examination	50

Table 3: Assessment components and processes used for the evaluation of Course Outcome

Assessment components	Marks	Weightage	Quality/Relevance of assessment process
Internal assessment (IA)	50	50%	➢ The **overall evaluation** of students' performance consists of two main components: **Internal Assessment**: 50% of the total marks. **University Examination**: 50% of the total marks. This split ensures both continuous assessment and final examination performance are fairly considered. ➢ **Internal Assessment (50%)** is designed to evaluate students continuously throughout the semester, promoting regular study habits and engagement. It is further divided into three components: ➢ **Internal Examination (20 marks):** Conducted periodically during the semester. Tests students' understanding of the syllabus covered up to that point. May include written tests, quizzes, or mid-semester exams. ➢ **Class Attendance (10 marks):** Encourages regular participation in classes. Marks are awarded based on the percentage of classes attended. Promotes discipline and consistent learning. ➢ **Assignment (20 marks):** Based on submission of assignments given by the faculty. May involve problem-solving tasks, essays, projects, or practical exercises. Aims to develop research, analytical, and writing skills. ➢ This **internal assessment structure** ensures that students are evaluated not only on their final exam performance but also on their regular participation, attendance, and engagement with the course material.
University assessment (End semester Examination)	50	50%	

Criteria for Pass: As per the general passing criteria, students must secure a minimum of **50%** marks separately in both Internal Assessment and University Examination for each course. This rule applies individually to all theory and practical courses, which are treated as separate subjects. Internal assessment includes components like tests, assignments, and attendance, while the university exam is conducted at the end of the semester. Passing one component does not compensate for failing the other. Students must meet the minimum in both to be considered as having passed the subject. This ensures consistent performance throughout the course in both internal and external evaluations.

1.2.2 Record the attainment of Course Outcomes of all courses with respect to set attainment levels

Following Procedure is followed for the assessment of attainment of COs through Internal Assessment marks and end semester marks:

Setting of attainment levels:

Step 1: Course Outcome attainment levels: The CO attainment levels are set for each course in the final examination as target. Accordingly, the target levels for CO attainment are set.

Step 2: Criteria for setting and improvement of the target levels: For every course the target level for an assessment year is set on the basis of the target achieved in the previous year. For any course, achieving the maximum attainment level of 3 during the assessment year, the attainment level for the subsequent year shall be redefined by increasing the target marks. Table presents the target levels for CO attainment.

Step 3: Weightage and CO attainment achieved: As per the University curriculum, the total marks for the theory courses is 100, Accordingly the weightage adopted for the program are:

— 50% weightage for University examination and

— 50% weightage for internal assessment.

Target level for academic year 2021-22 & 2022-23 is shown below:

Academic year	For internal assessment		For University examination	
	Target Level	Internal Marks	Target Level	External Marks
2021-23	1	≤20	1	≥30
	2	21 to 24	0	-
	3	≥25		

The Course outcomes attained through university examinations and Internal Assessment are calculated and same is presented in Table 4

Table 4: Target Marks and levels (2021-22)

Course Code	Marks		Level		50% Internal	50% External	Target
	IA	Final	T_IA	T_Final			
I SEM							
34010101	25	25	3	1	0.5	0.5	1
34010102	25	25	3	1	0.5	0.5	1
34010103	25	25	3	1	0.5	0.5	1
34010104	25	25	3	1	0.5	0.5	1
34010105	25	25	3	1	0.5	0.5	1
34010106	25	25	3	1	0.5	0.5	1
II SEM							
34010201	25	25	3	1	0.5	0.5	1
34010202	25	25	3	1	0.5	0.5	1
34010203	25	25	3	1	0.5	0.5	1
34010204	25	25	3	1	0.5	0.5	1
34010205	25	25	3	1	0.5	0.5	1
34010206	25	25	3	1	0.5	0.5	1
III SEM							
34010301	25	25	3	1	0.5	0.5	1
34010302	25	25	3	1	0.5	0.5	1
34010303	25	25	3	1	0.5	0.5	1
34010304	25	25	3	1	0.5	0.5	1
34010305	25	25	3	1	0.5	0.5	1
34010306	25	25	3	1	0.5	0.5	1
IV SEM							
34010401	25	25	3	1	0.5	0.5	1
34010402	25	25	3	1	0.5	0.5	1
34010403	25	25	3	1	0.5	0.5	1

Attainment of Cos:

The attainment of COs is taken as the average of attainment of all the CO's for the course and expressed as CO-IA (20% weightage of CO attainment through IA tests). However, the institution is not accessible to the distribution of marks to corresponding COs from University results, with that as constraint CO-FE (CO attainment through semester examination) is computed as 80% of final examination. Together is expressed as the attainment of CO for the particular course.

Target Set:	Percentage
Level 1	55-69
Level 2	70-84
Level 3	≥85

The course level attainment for the academic year 2021-22 is presented in TABLE 5

Course Outcomes Attainment level and Course Attainment level for all the courses is compiled.

Table 5 : Course Outcome Attainment for 2021-22

Course Code	Exam	No. of Students appeared	No. of Students scoring more than 10/32	% students scoring	Attainment level	Weighted Score	Course Outcome
34010101	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	
34010102	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	
34010103	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	
34010104	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	
34010105	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	
34010106	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	

34010201	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	
34010202	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	
34010203	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	
34010204	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	
34010205	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	
34010206	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	
34010301	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	
34010302	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	
34010303	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	
34010304	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	
34010305	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	
34010306	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	
34010401	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	
34010402	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	
34010403	INT	5	5	100.00	3	0.6	3
	EXT	5	5	100.00	3	2.4	

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Below table shows verification of CO attainment:

Table 6: Verification of CO attainment

2021-2023			
Course Code	**Targent Level**	**Course Outcomes Attainment**	**Verification/ Remarks**
34010101	1	3	-
34010102	1	3	-
34010103	1	3	-
34010104	1	3	-
34010105	1	3	-
34010106	1	3	-
34010201	1	3	-
34010202	1	3	-
34010203	1	3	-
34010204	1	3	-
34010205	1	3	-
34010206	1	3	-
34010301	1	3	-
34010302	1	3	-
34010303	1	3	-
34010304	1	3	-
34010305	1	3	-
34010306	1	3	-
34010401	1	3	-
34010402	1	3	-
34010403	1	3	-

1.3. Attainment of Program Outcomes

1.3.1. Describe assessment tools and processes used for assessing the attainment of each PO

The tools, process and frequency of assessment adopted for evaluating the attainment of the POs are detailed in Table 7

Table 7: Scheme for Internal assessment and End semester examination as well as the feedback analysis

Assessment Method	Assessment tool	Aim	Assessment Frequency	Percentage Contribution		
Direct	Internal assessment	Assessing the understanding of the fundamental concepts and expression of the practical skills and knowledge gained	Twice a semester	30%	80%	100%
	University examination		Once in a semester	70%		
Indirect	Exit survey	To assess the contribution of the Program in the overall development of the graduates	Once in a year after graduation (Started from year 2021)	20%		
	Employer survey	To get the feedback from employers for the programme and overall performance of the students in the industrial working environment	Once in a year after placement/ after graduation (started from year 2021)			
	Alumni survey	To assess the effectiveness of program for the career development and placement of the graduates	Once in a year from alumni (Started in 2022)			

Following Procedure is followed to assess the attainment of POs.

- For every course the target level for an assessment year is set on the basis of the target achieved in the previous year.
- For any course, achieving the maximum attainment level of 3 during the assessment year, the attainment level for the subsequent year shall be redefined by increasing the target marks.

1.3.2 Provide results of evaluation of each PO

Table 8 show the target levels for POs through courses for the academic year 2021-2023
Table 9 show the indirect attainment levels for POs through courses for the academic year 2021-2023
Table 10 show the attainment levels for POs through courses for the academic year 2021-2023

Tables 8: Target Levels for POs

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	Overall CO Average
34010101	1.60	2.00	2.00	3.00	1.00	-	3.00	-	1.00	1.33	1.92
34010102	1.80	2.00	2.00	3.00	1.00	1.00	3.00	-	1.00	1.33	1.91
34010103	1.75	2.00	1.67	3.00	1.00	1.00	3.00	1.00	1.00	1.33	1.85
34010104	1.80	2.00	1.67	3.00	1.00	1.00	3.00	1.00	1.00	1.33	1.54
34010105	1.75	3.00	1.75	2.00	1.25	-	3.00	1.00	1.00	1.33	1.63
34010106	1.60	2.00	1.40	2.00	1.40	1.00	3.00	1.00	1.00	1.25	1.43
34010201	1.67	1.50	1.67	1.67	1.50	1.00	3.00	1.00	1.00	1.33	1.41
34010202	1.50	1.00	1.33	1.33	1.40	1.00	1.33	1.00	1.00	1.25	1.22
34010203	1.50	1.50	1.33	1.67	1.67	1.33	1.33	1.25	1.67	1.50	1.44
34010204	1.67	1.80	1.50	1.50	1.50	1.50	1.50	1.25	1.67	1.67	1.55
34010205	3.00	3.00	2.50	2.00	3.00	2.00	3.00	2.00	2.00	-	2.47
34010206	2.00	3.00	2.50	1.67	1.67	2.80	2.00	3.00	-	-	2.34
34010301	2.25	2.33	2.00	2.00	2.00	2.50	2.00	2.00	2.00	-	2.09
34010302	1.33	2.33	1.50	2.00	1.67	1.33	1.67	2.50	1.00	-	1.74
34010303	1.25	-	1.67	2.20	1.25	1.75	1.00	1.50	1.00	-	1.46
34010304	1.25	-	1.00	2.40	1.00	1.60	1.00	1.00	-	-	1.49
34010305	1.80	2.00	1.80	1.60	1.50	3.00	2.00	1.50	-	-	1.80
34010306	2.33	2.00	2.75	1.60	2.00	2.33	2.00	1.00	1.67	2.00	2.03
34010401	2.00	1.33	2.20	2.50	-	-	-	1.75	1.33	-	1.84
34010402	1.75	1.33	-	2.40	-	1.80	1.33	2.00	-	-	1.82
34010403	2.00	2.00	2.00	1.33	-	1.00	3.00	-	-	1.60	1.79
AVERAGE ATTAINMENT	**1.79**	**2.01**	**1.81**	**2.09**	**1.49**	**1.61**	**2.21**	**1.49**	**1.27**	**1.44**	**1.75**
TOTAL	**37.60**	**38.13**	**36.23**	**43.87**	**26.80**	**28.95**	**44.17**	**26.75**	**20.33**	**17.27**	**36.76**
COUNT	**21**	**19**	**20**	**21**	**18**	**18**	**20**	**18**	**16**	**12**	**21**
AVERAGE ATTAINMENT	**1.7905**	**2.0070**	**1.8117**	**2.0889**	**1.4889**	**1.6083**	**2.2083**	**1.4861**	**1.2708**	**1.4389**	**1.7506**

Tables 9: Indirect Attainment level of POs

Form name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
Alumni Survey	2.55	2.18	2.64	2.00	2.09	2.55	1.82	2.36	2.82	2.55
Student exit survey	2.40	2.40	3.00	2.20	2.20	2.20	3.00	2.20	2.40	2.20
Employer survey	2.33	3.00	2.00	2.00	1.67	1.67	2.33	2.67	2.67	2.67
Total	7.28	7.58	7.64	6.20	5.96	6.41	7.15	7.23	7.88	7.41
Average	2.43	2.53	2.55	2.07	1.99	2.14	2.38	2.41	2.63	2.47
20% of indirect assessment	0.49	0.51	0.51	0.41	0.40	0.43	0.48	0.48	0.53	0.49

Tables 10: Attainment level of POs

Course code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
34010101	0.53	0.67	0.67	1.00	0.33	-	1.00	-	0.33	0.44
34010102	0.60	0.67	0.67	1.00	0.33	0.33	1.00	-	0.33	0.44
34010103	0.58	0.67	0.56	1.00	0.33	0.33	1.00	0.33	0.33	0.44
34010104	0.60	0.67	0.56	1.00	0.33	0.33	1.00	0.33	0.33	0.44
34010105	0.58	1.00	0.58	0.67	0.42	-	1.00	0.33	0.33	0.44
34010106	0.53	0.67	0.47	0.67	0.47	0.33	1.00	0.33	0.33	0.42
34010201	0.56	0.50	0.56	0.56	0.50	0.33	1.00	0.33	0.33	0.44
34010202	0.50	0.33	0.44	0.44	0.47	0.33	0.44	0.33	0.33	0.42
34010203	0.50	0.50	0.44	0.56	0.56	0.44	0.44	0.42	0.56	0.50
34010204	0.56	0.60	0.50	0.50	0.50	0.50	0.50	0.42	0.56	0.56
34010205	1.00	1.00	0.83	0.67	1.00	0.67	1.00	0.67	0.67	-
34010206	0.67	1.00	0.83	0.56	0.56	0.93	0.67	1.00	-	-
34010301	0.75	0.78	0.67	0.67	0.67	0.83	0.67	0.67	0.67	-
34010302	0.44	0.78	0.50	0.67	0.56	0.44	0.56	0.83	0.33	-
34010303	0.42	-	0.56	0.73	0.42	0.58	0.33	0.50	0.33	-
34010304	0.42	-	0.33	0.80	0.33	0.53	0.33	0.33	-	-
34010305	0.60	0.67	0.60	0.53	0.50	1.00	0.67	0.50	-	-
34010306	0.78	0.67	0.92	0.53	0.67	0.78	0.67	0.33	0.56	0.67
34010401	0.67	0.44	0.73	0.83	-	-	-	0.58	0.44	-
34010402	0.58	0.44	-	0.80	-	0.60	0.44	0.67	-	-
34010403	0.67	0.67	0.67	0.44	-	0.33	1.00	-	-	0.53
SUM OF PO	**12.53**	**12.71**	**12.08**	**14.62**	**8.93**	**9.65**	**14.72**	**8.92**	**6.78**	**5.76**
COUNT OF PO	**21**	**19**	**20**	**21**	**18**	**18**	**20**	**18**	**16**	**12**
DIRECT TARGET (AVG)	**0.60**	**0.67**	**0.60**	**0.70**	**0.50**	**0.54**	**0.74**	**0.50**	**0.42**	**0.48**
ATTAINMENT OF PO DIRECT	**1.79**	**2.01**	**1.81**	**2.09**	**1.49**	**1.61**	**2.21**	**1.49**	**1.27**	**1.44**
80% OF DIRECT ATT	**1.43**	**1.61**	**1.45**	**1.67**	**1.19**	**1.29**	**1.77**	**1.19**	**1.02**	**1.15**
20% OF INDIRECT ATTAINMENT	**0.49**	**0.51**	**0.51**	**0.41**	**0.40**	**0.43**	**0.48**	**0.48**	**0.53**	**0.49**
TOTAL	**1.92**	**2.11**	**1.96**	**2.08**	**1.59**	**1.71**	**2.24**	**1.67**	**1.54**	**1.65**