

# Development of Integrated Safety Culture Index With Four-Level Organisation Maturity for Construction Industries in Malaysia

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# WHAT is **SAFETY CULTURE?**

“The safety culture of an organisation is the product of individual and group values, attitudes, perceptions, competencies, and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organisation’s health and safety management. Organisations with a positive safety culture are characterised by communications founded on mutual trust, by shared perceptions of the importance of safety and by confidence in the efficacy of preventive measures.”

*ACSNI Human Factors Study Group:  
Third report - Organizing for safety HSE Books 1993*



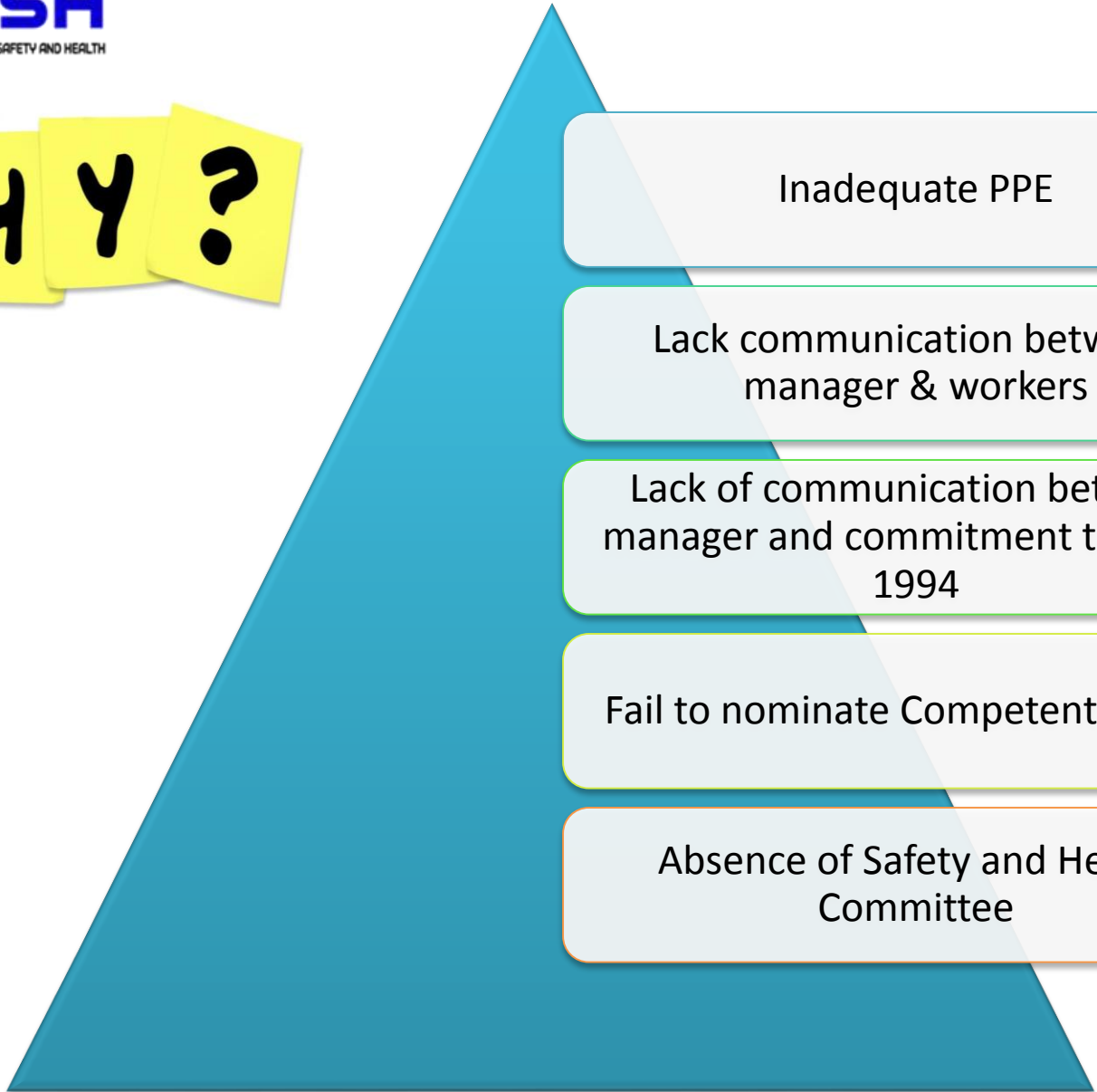
# WHAT is **SAFETY CULTURE?**

Safety culture was defined as the **collection of several attributes; values, beliefs, attitudes, norms, organizational characteristic behaviours and environments** which are concerned with safety to produce good practice that being accepted by most of members in organization (Lei Wang and Ruishan Sun et al, 2009).

*Lei Wang and Ruishan Sun et al, 2009*



WHY?



**FACTORS AFFECTING SAFETY PERFORMANCE IN TERMS OF MANAGEMENT**



**WHY?**

No regular supervision at least once a week

Workers are not likely to report accidents

Decision making does not involve all organization

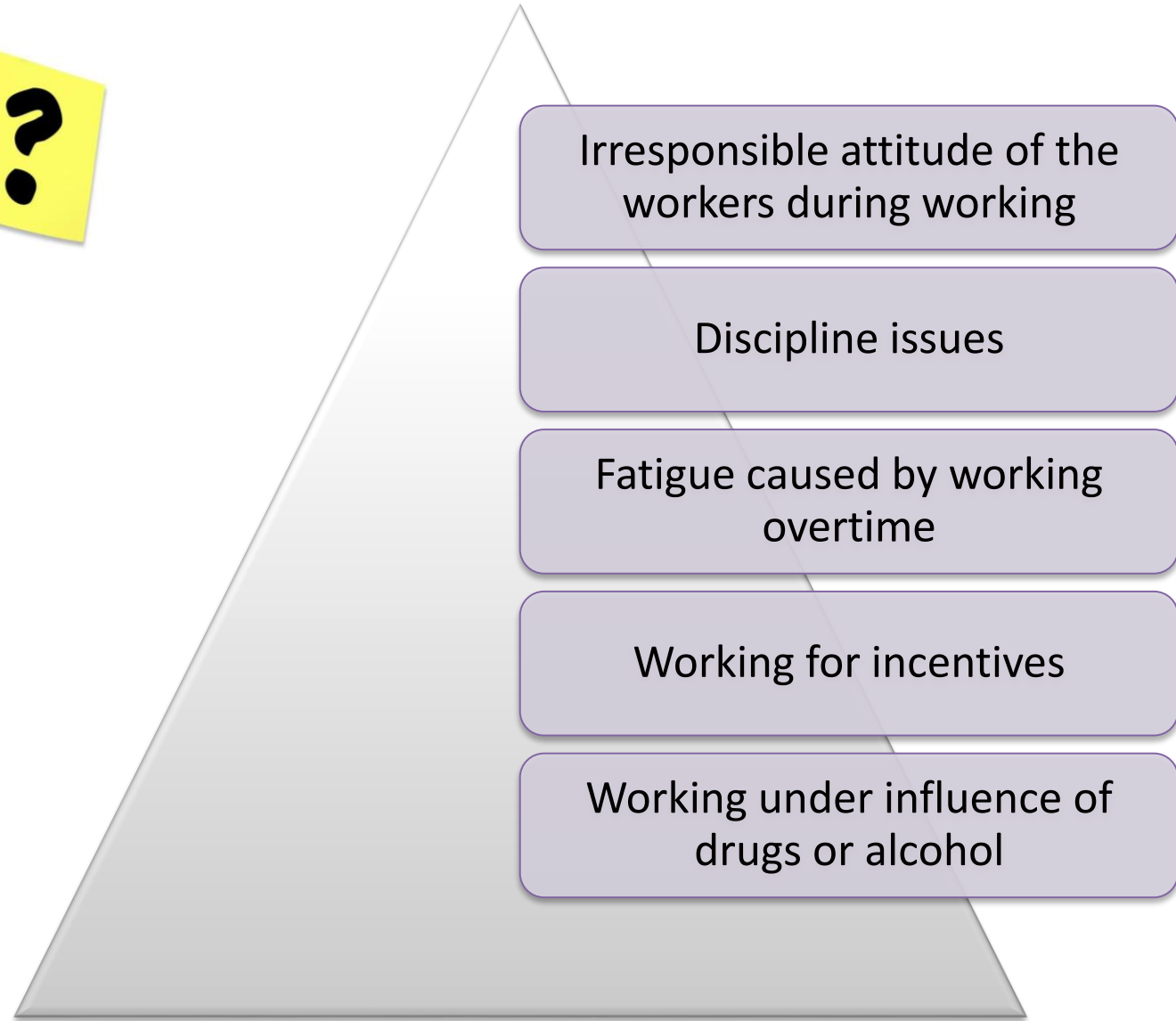
Risk Assessment is not practicable at workplace

Difficulties in communication towards foreign workers

**FACTORS AFFECTING SAFETY PERFORMANCE IN TERMS OF CULTURE**



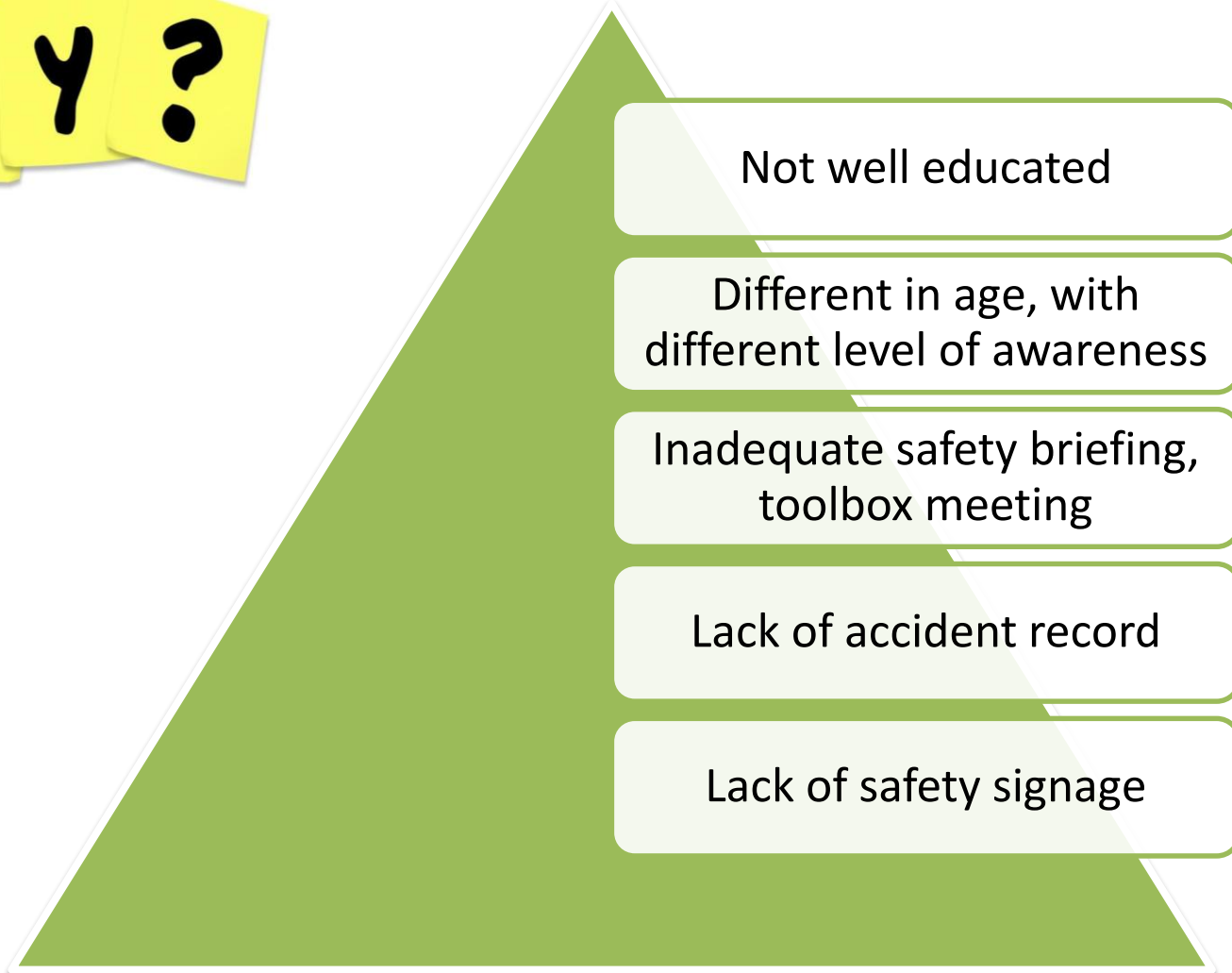
WHY?



**FACTORS AFFECTING SAFETY PERFORMANCE IN TERMS OF BEHAVIOURS**

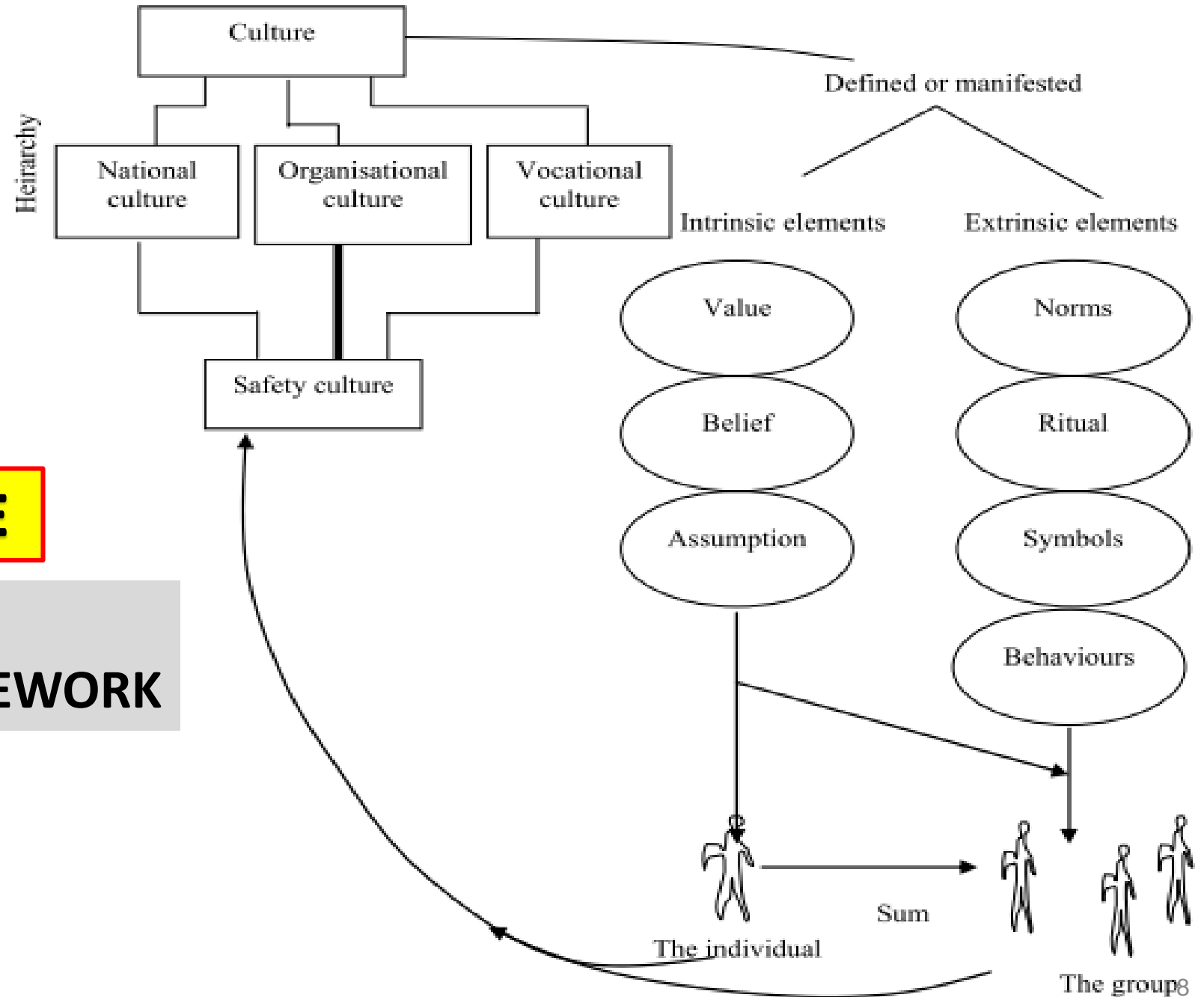


WHY?



**FACTORS AFFECTING SAFETY PERFORMANCE IN TERMS OF AWARENESS**





**SAFETY CULTURE**

**In the CONSTRUCTION FRAMEWORK**





# Addition of new elements and the comments by participant of the focus group discussion



**Table 4.1. The Summary of the expert comments and suggestion**

Sections	Summary of the comments/ Suggestions/ opinion
Sociodemographic Information	<ul style="list-style-type: none"> <li>• Modify of the respondent occupation background</li> <li>• The respondent status is irrelevant</li> <li>• Add the mindset of respondent</li> <li>• Include the respondent competency qualification</li> </ul>
Organization Safety Commitment	<ul style="list-style-type: none"> <li>• Define the safety policy</li> <li>• Restructure the questions</li> <li>• Add the element of leadership and compliance to the safety requirement</li> <li>• Elaborate the accessibility on the communication and documentation</li> </ul>
Safety Organization	<ul style="list-style-type: none"> <li>• Separate on the safety management element due to different nature of role and commitments</li> <li>• Add the element of workplace, health and assessment related to the safety concern</li> <li>• Change the unsuitable phrase</li> <li>• Simplify and restructure the question</li> </ul>
Safety Regulation and Rule	<ul style="list-style-type: none"> <li>• Focus the HIRARC element</li> <li>• Restructure the question and define the clarity</li> </ul>
Safety Management Behaviour	<ul style="list-style-type: none"> <li>• Separate the question that involve 2 elements; safety inspection and risk assessment</li> <li>• Simplify the question</li> <li>• The incorrect term use in the question need to be replaced</li> </ul>
Safety Operation Behaviour	<ul style="list-style-type: none"> <li>• Prevent the use of unsuitable term</li> <li>• Restructure and simplify the question</li> <li>• Clarify the undefined term</li> <li>• Use suitable word in the question</li> </ul>
Safety Education and Training	<ul style="list-style-type: none"> <li>• Differentiate the 2 questions that looks alike</li> <li>• Clarify the meaning of the unusual term and change with more suitable term</li> <li>• Add the new attributes in enhancing the question</li> </ul>
Safety Information Exchange	<ul style="list-style-type: none"> <li>• Add the new attributes in enhancing the question</li> <li>• Provide the brief definition on the selected subject due to minor familiarity with the subject among respondent</li> <li>• Give the appropriate example to the subject to increase the respondents' understanding to the question</li> </ul>
Safety Reward and Punishment	<ul style="list-style-type: none"> <li>• No comment received</li> </ul>



# SAMPLING DESIGN

**What**

- focus was on the prevalence and predictors of safety practice

**Where**

- Construction industry in Malaysia

**Who**

- Construction workers from low level up to the high management level

**When**

- Active construction stage

**Why**

- To determine the association between the predictors and prevalence of the safety practice
- the development and evaluation of the safety culture index.

# SAMPLE SIZE CALCULATION

- *Cross-Sectional (One Group); Estimate: Proportion*

$$n = \frac{z^2 1 - \alpha/2 P(1 - P)n}{d^2}$$

where,

P = estimated proportion

d = desired precision

- *Hence,*

$$n = \frac{1.96^2 \times (0.5)(0.5)}{0.5^2}$$

$$n = \mathbf{384}$$



# STRUCTURED QUESTIONNAIRE (SECTION A – DEMOGRAPHIC & 8 PARTS FOR SECTION B

Page | 1

SECTION 1 (Consist only ONE (1) Part)

**PART A: SOCIODEMOGRAPHIC INFORMATION**

Please answer all questions and [✓] at the appropriate boxes.

1. Name of Company : \_\_\_\_\_

2. Type [1] Main-contractor  
[2] Sub-contractor  
[3] Others

3. Size of Industry: [1] Small (annual sales turn over < 10 M or Emp.< 50 workers)  
[2] Medium (annual sales turn over 10-25 M or Emp.< 51 - 150 workers)  
[3] Big (annual sales turn over 25 M or Emp.> 150 workers)

4. Year Established : \_\_\_\_\_

5. Name : \_\_\_\_\_

6. Current Position : \_\_\_\_\_

SECTION 2 (Consist of EIGHT (8) Parts)

1	2	3	4	5
not important at all	of little important	of moderate important	very important	of utmost important

**PART A: ORGANIZATIONAL SAFETY COMMITMENT**  
(Guideline and Policy; Objective and Responsibility; Resource Allocation)

Please answer all questions and [✓] at the appropriate boxes.

1. Communication on Safety Policy to interested parties/public is given priority. [1] [2] [3] [4] [5]

2. Safety is given a definite priority when it conflicts with the company's other interests e.g. economic. [1] [2] [3] [4] [5]

3. Each work phase has corresponding safety goals. To ensure the safety goals are achieved the responsibilities of each phase are clear. [1] [2] [3] [4] [5]

4. Team spirit and cooperation are well promoted in my company. [1] [2] [3] [4] [5]

**PART B: SAFETY ORGANIZATION**  
(Organization Setting and Function)

9. The safety management committees/departments/managers perform their duties and play an active role in preventing accidents. [1] [2] [3] [4] [5]

10. My department is flexible in adjusting work assignments according to employee safety considerations. [1] [2] [3] [4] [5]

11. Top management have clear vision for the future safety. [1] [2] [3] [4] [5]

12. Top management team set realistic and effective safety goals. [1] [2] [3] [4] [5]

13. Top management team are visible and committed to safety. [1] [2] [3] [4] [5]

**PART C: SAFETY REGULATION AND RULE**  
(Completeness and Applicability; Executing and Fulfilling)

16. Safety procedures are accessible for everyone. [1] [2] [3] [4] [5]

17. The safety rules/regulations are imperfect and inapplicable, so there are few effective rules for us to follow during the work. [1] [2] [3] [4] [5]

18. The safety rules/regulations cannot be updated in a timely manner, so there are few effective rules for us to follow during the work. [1] [2] [3] [4] [5]

19. I do not know the safety rules that should be followed during the work. [1] [2] [3] [4] [5]

**PART D: SAFETY MANAGEMENT BEHAVIOR**  
(Risk Management; Safety Supervision; Staff Involvement)

21. Safety inspection and risk assessment are carried out regularly in my company. [1] [2] [3] [4] [5]

22. The defects or hazards found in safety inspection and risk assessment will be rectified promptly. [1] [2] [3] [4] [5]

23. I am given sufficient opportunities to make suggestions and participate in the safety decision making and implementing process. [1] [2] [3] [4] [5]

24. I am not afraid to intervene or "Stop the Job" if the observed situation or behavior is unsafe. [1] [2] [3] [4] [5]

25. It has shown that the client/designer/contractor are fully comply to OSHCIM. [1] [2] [3] [4] [5]

26. It has shown that the results of HIRARC are communicated between main-con and sub-con. [1] [2] [3] [4] [5]

**PART E: SAFETY OPERATION BEHAVIOR**  
(Operational Skill; Teamwork Skill; Risk-resisting Capability)

28. Violation events happen frequently in my company. [1] [2] [3] [4] [5]

29. When other people make mistakes at work, I don't always point them out immediately, as I think it's none of my business or I'm afraid of making that person feel embarrassed. [1] [2] [3] [4] [5]

30. I can take effective timely prevention measures after discovering latent defects/risks. [1] [2] [3] [4] [5]

31. I can often improve my experience and knowledge through communicating with my colleagues. [1] [2] [3] [4] [5]

32. I am happy to offer help when my colleagues need support or assistance at work. [1] [2] [3] [4] [5]

33. Identified safety matters are corrected in timely manner. [1] [2] [3] [4] [5]

1	2	3	4	5
not important at all	of little important	of moderate important	very important	of utmost important

**PART F: SAFETY EDUCATION AND TRAINING**  
(Quantity and Variety; Quality and Effect; Organizational Learning)

35. There is an active learning atmosphere within my company. [1] [2] [3] [4] [5]

36. I am used to improving my skills through learning actively. [1] [2] [3] [4] [5]

37. Safety education and training are carried out frequently in my company. [1] [2] [3] [4] [5]

38. As a result of safety education and training, the ability of staff to recognize and deal with risks has been improved significantly. [1] [2] [3] [4] [5]

39. I can discover the latent defects/risks during my work. [1] [2] [3] [4] [5]

40. I can often learn from incidents/accidents that have happened. [1] [2] [3] [4] [5]

**PART G: SAFETY INFORMATION EXCHANGE**  
(Reporting System; Information Submission; Information Feedback; Experience Sharing and Communication)

44. Self-learning and knowledge-sharing among staff are encouraged in my company. [1] [2] [3] [4] [5]

45. There are various ways to facilitate knowledge-sharing in my company, such as establishing network-based platforms for communication, holding seminars and distributing brochures. [1] [2] [3] [4] [5]

46. Safety information reporting, including mandatory and confidential safety reporting (eg. NADOPD), is carried out in my company. [1] [2] [3] [4] [5]

47. The company safety information reporting system is operated well and used widely. [1] [2] [3] [4] [5]

48. I often contribute and obtain all kinds of safety information through the company safety information reporting system. [1] [2] [3] [4] [5]

49. I cannot always receive feedback in a timely manner after I make safety suggestions to safety management leaders. [1] [2] [3] [4] [5]

50. I feel that it is safe to report unethical or unprofessional behaviour without fear or risk to my career. [1] [2] [3] [4] [5]

**PART H: SAFETY REWARDS AND PUNISHMENT**  
(Justice and Equality)

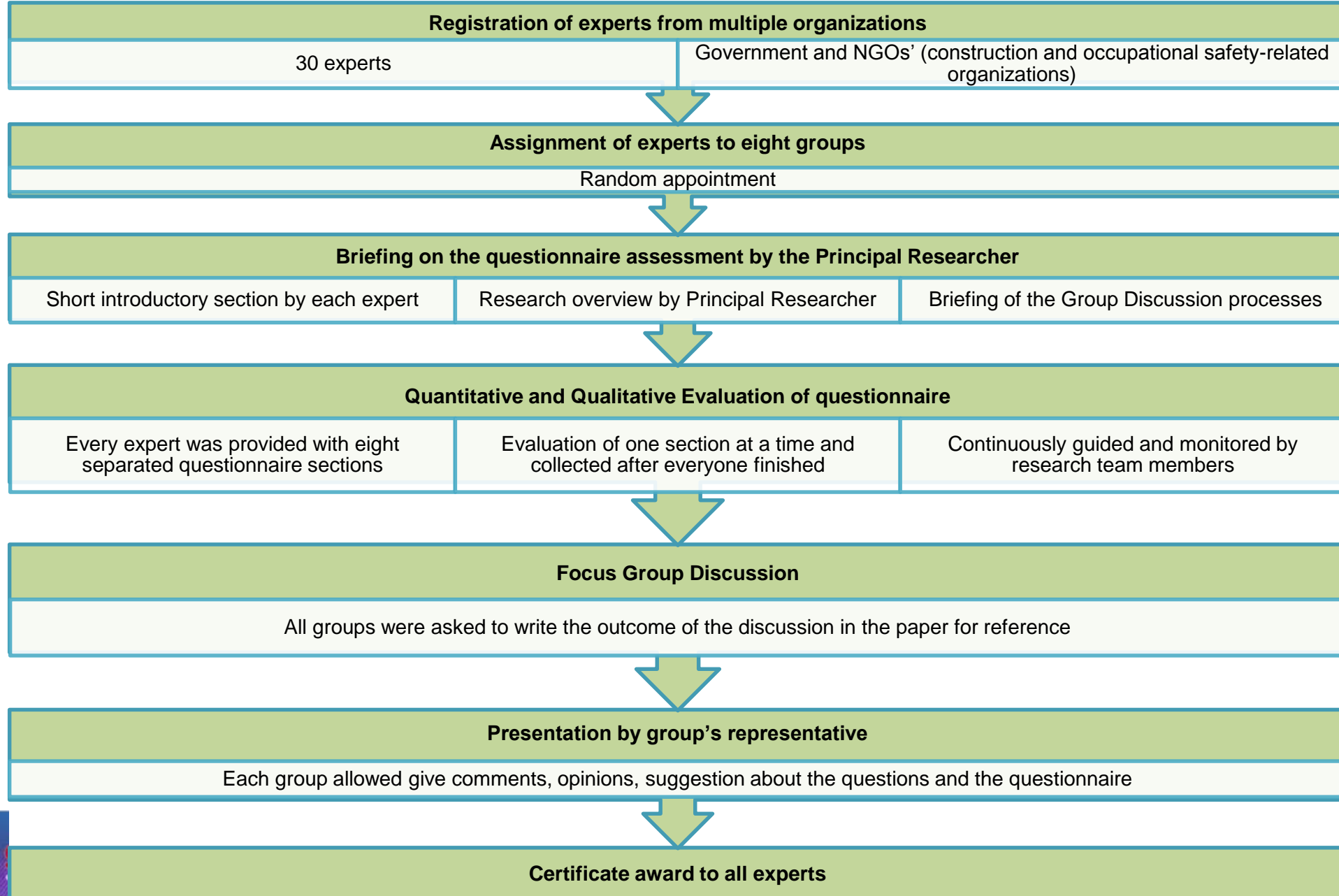
51. The rewards and punishment measures of the company are fair, just and open. [1] [2] [3] [4] [5]

52. I am satisfied with my company's rewards and punishment measures. [1] [2] [3] [4] [5]

53. Most employees in the organisation express their honest feelings without fear of some form of punishment. [1] [2] [3] [4] [5]



# Focus Group Discussion



# Content Validity Index and Reliability Test

$$\textit{Itemise CVI} = n_r / N$$

Where;

$n_r$  = the number of panellist who rate the item as relevant

$N$  = total number of panellists


$$\textit{Scale CVI} = \frac{(n_r / N)}{u}$$

Where;

$u$  = total number of items



# Validated Questionnaire



**BORANG SOAL SELIDIK**

**KAJIAN PEMBANGUNAN INDEKS BUDAYA KESELAMATAN DI SEKTOR PEMBINAAN**

**TAJUK KAJIAN:**  
Kajian Pembangunan Indeks Budaya Keselamatan di Sektor Pembinaan

**APAKAH YANG PERLU ANDA LAKUKAN?**  
Anda dikehendaki mengisi borang soal selidik ini dengan secara jujur.

**APAKAH FAEDAH MENYERTAI KAJIAN INI?**  
Semua maklumat yang bakal diperolehi daripada kajian ini akan membantu pihak NIOSH untuk mengenal pasti nilai indeks dalam membangunkan budaya keselamatan dan kesihatan dalam sektor pembinaan di negara ini.

**ADAKAH MAKLUMAT DAN IDENTITI SAYA DIRAHSIAKAN?**  
Ya, semua maklumat yang dikumpul daripada anda adalah sulit. Sebarang maklumat atau data akan dipaparkan dalam laporan atau penerbitan tanpa mendedahkan identiti anda.

**MAKLUMAT SOSIODEMOGRAFI**

Bahagian 1 (Mengandungi hanya SATU (1) Bahagian) - Bahagian A:

1. Nama Syarikat : \_\_\_\_\_

2. Kategori:

Kontraktor utama       Perunding  
 Kontraktor sub       Pereka  
 Pemaju       Lain - lain

3. Kelas kontraktor:

G1 – tidak melebihi RM200,000.00       G2 – tidak melebihi RM500,000.00  
 G3 – tidak melebihi RM1000,000.00       G4 – tidak melebihi RM3000,000.00

**BAHAGIAN 2: Mempunyai 8 perkara dan jawapan hendaklah merujuk kepada skala likert diberikan**

**PERKARA A: KOMITMEN ORGANISASI KESELAMATAN** (Garis Panduan dan Polisi; Objektif dan Tanggungjawab; Pengurusan Sumber)

Skala Likert

	1	2	3	4	5
	Sangat Tidak Bersetuju	Tidak Bersetuju	Neutral	Bersetuju	Sangat Bersetuju

Bil.	Penyataan	Skala Likert
1.	Komunikasi berkesan Polisi Keselamatan kepada pihak yang terlibat / awam diberi keutamaan	1 2 3 4 5
2.	Keselamatan diberi keutamaan berbanding urusan-urusan lain syarikat	1 2 3 4 5
3.	Keselamatan diberi keutamaan pada setiap peringkat dalam fasa pembinaan	1 2 3 4 5

**PERKARA B: ORGANISASI KESELAMATAN** (Fungsi dan Tetapan Organisasi Kepimpinan)

Bil.	Penyataan	Skala Likert
13.	Jawatankuasa keselamatan menjalankan tugas dan memainkan peranan yang aktif dalam mencegah kemalangan	1 2 3 4 5
14.	Pengurusan tertinggi mempunyai visi yang jelas dalam penambahbaikan keselamatan ke arah budaya keselamatan	1 2 3 4 5
15.	Pengurusan tertinggi menetapkan sasaran keselamatan yang realistik dan berkesan	1 2 3 4 5
16.	Pengurusan tertinggi kerap menyemak semula Sasaran Kerja Tahunan (KPI) keselamatan	1 2 3 4 5

**PERKARA C: PERATURAN DAN UNDANG – UNDANG** (Kesempumaan dan Kebolehlaksanaan Perlaksanaan dan Penyempurnaa)

Bil.	Penyataan	Skala Likert
20.	Prosedur-prosedur keselamatan boleh diakses oleh semua orang	1 2 3 4 5
21.	Peraturan-peraturan keselamatan dan kesihatan sentiasa dikuatkuasakan di tempat kerja saya	1 2 3 4 5
22.	Selepas daripada penguatkuasaan, tindakan susulan diambil dalam tempoh terdekat untuk mematuhi peraturan yang ditetapkan	1 2 3 4 5
23.	Sebarang pengemaskinian dalam peraturan keselamatan adalah diberitahu dan disampaikan secara berkesan kepada seluruh organisasi	1 2 3 4 5
24.	Saya mengetahui kesemua peraturan-peraturan keselamatan berkaitan kerja saya.	1 2 3 4 5
25.	Walaupun saya mengetahui kesemua peraturan tersebut, saya tidak selalu mematuhi kesemuanya	1 2 3 4 5

**PERKARA D: SIKAP PENGURUSAN KESELAMATAN** (Pengurusan Risiko; Pemantauan Keselamatan; Penglibatan Kakitangan)

Bil.	Penyataan	Skala Likert
26.	Pemeriksaan keselamatan dijalankan secara kerap di syarikat saya.	1 2 3 4 5
27.	Penilaian risiko dijalankan secara kerap di syarikat saya.	1 2 3 4 5
28.	Sebarang kelemahan atau hazard yang ditemui ketika pemeriksaan keselamatan dan penilaian risiko akan diperbetulkan dengan segera	1 2 3 4 5
29.	Saya dibenarkan untuk memberi cadangan dan terlibat dalam membuat keputusan	1 2 3 4 5
30.	Saya bebas untuk mengambil tindakan atau memberi arahan berhenti kerja untuk mana-mana keadaan / tindakan yang tidak selamat	1 2 3 4 5

**PERKARA E: SIKAP OPERASI KESELAMATAN** (Kemahiran operasi; Kemahiran Kerja Kumpulan; Keupayaan Menentang Risiko)

Bil.	Penyataan	Skala Likert
34.	Ketidakpatuhan peraturan kerap berlaku di syarikat saya	1 2 3 4 5

**PERKARA F: PENDIDIKAN KESELAMATAN DAN LATIHAN** (Kuantiti dan Kepelbagaian; Kualiti dan Kesan Pembelajaran Organisasi)

Bil.	Penyataan	Skala Likert
40.	Saya biasa meningkatkan kemahiran melalui pembelajaran secara aktif	1 2 3 4 5
41.	Pendidikan keselamatan dan latihan kerap dijalankan di syarikat saya	1 2 3 4 5
42.	Kebolehan pekerja untuk mengenalpasti dan menguruskan risiko-risiko telah ditingkatkan melalui pendidikan keselamatan dan latihan	1 2 3 4 5
43.	Saya boleh mengenalpasti risiko / kemungkinan hazard / ketidakpatuhan ketika bekerja	1 2 3 4 5
44.	Saya selalunya belajar daripada kemalangan/kejadian yang berlaku	1 2 3 4 5
45.	Penyelia membantu saya mempelajari kemahiran baru untuk meningkatkan kebolehan diri	1 2 3 4 5

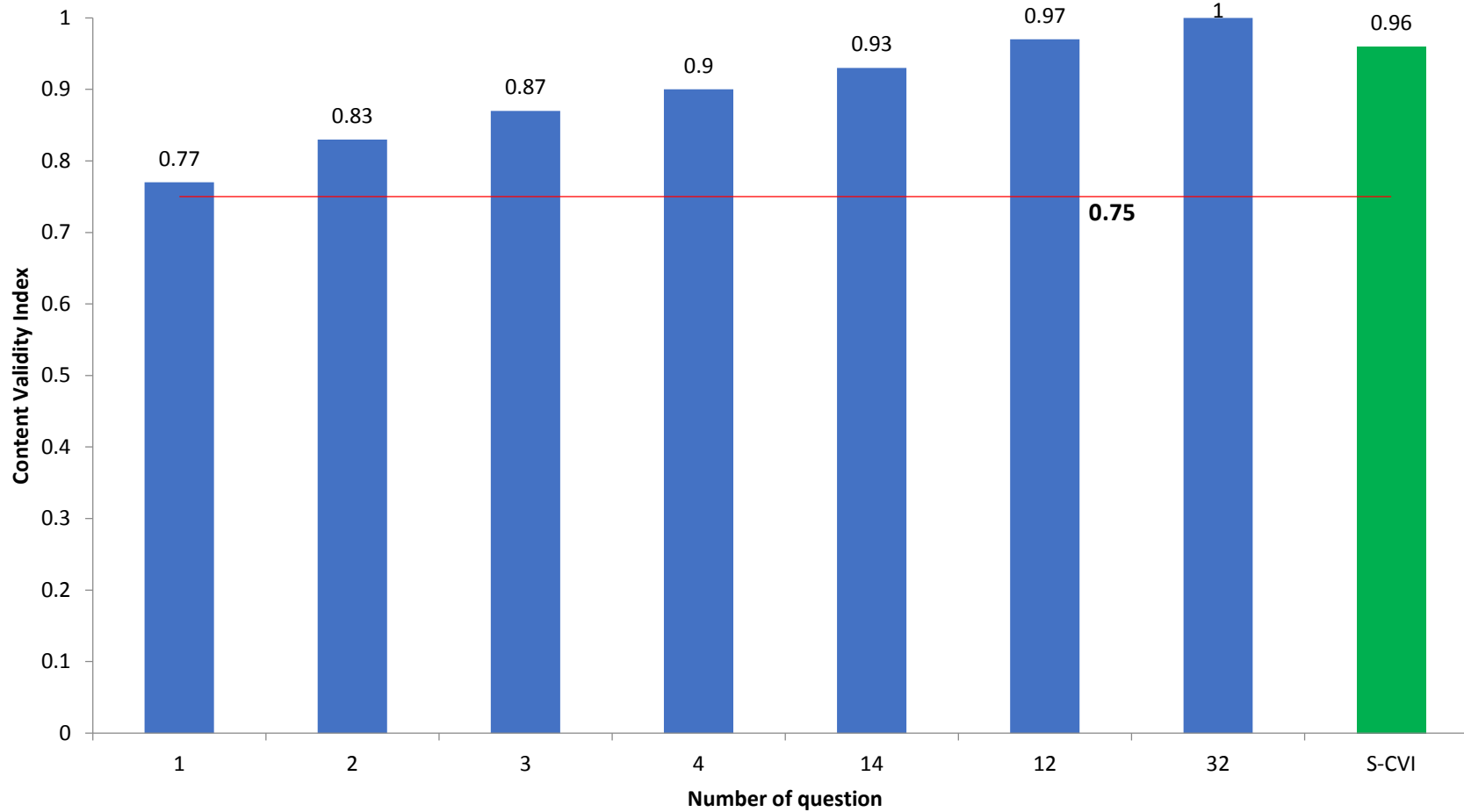
**PERKARA G: PERKONGSIAN MAKLUMAT KESELAMATAN** (Sistem Pelaporan; Penghantaran Maklumat; Maklumbalas Maklumat; Perkongsian Pengalaman dan Komunikasi)

Bil.	Penyataan	Skala Likert
48.	Pembelajaran sendiri dan perkongsian ilmu pengetahuan di kalangan kakitangan adalah digalakkan di syarikat saya	1 2 3 4 5
49.	Terdapat banyak kaedah untuk memudahkan perkongsian ilmu pengetahuan di syarikat saya, seperti komunikasi melalui rangkaian yang bersesuaian, menjalankan seminar dan mengedarkan risalah	1 2 3 4 5
50.	Pelaporan maklumat keselamatan seperti pelaporan keselamatan mandatori (contohnya NADOPOD) dijalankan di syarikat saya	1 2 3 4 5
51.	Sistem pelaporan maklumat keselamatan syarikat dioperasikan dengan berkesan dan digunakan secara meluas	1 2 3 4 5
52.	Saya kerap menyumbang dan mendapatkan	1 2 3 4 5

**PERKARA H: PENGHARGAAN KESELAMATAN DAN HUKUMAN** (Keadilan dan Kesaksamaan)

Bil.	Penyataan	Skala Likert
55.	Penghargaan dan hukuman oleh syarikat adalah adil dan bersifat terbuka	1 2 3 4 5
56.	Saya berpuas hati terhadap penghargaan dan hukuman yang dijalankan oleh syarikat	1 2 3 4 5
57.	Kebanyakan pekerja di syarikat ini meluahkan perasaan dan pandangan dengan jujur tanpa rasa takut akan hukuman oleh syarikat	1 2 3 4 5

# Content Validity Test (I-CVI and S-CVI)





# Reliability Test

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.978	0.981	57

## Cronbach's Alpha values and the internal consistency of the value

Cronbach's Alpha	Internal Consistency
>0.9	Excellent
>0.8	Good
>0.7	Acceptable
>0.6	Questionable
>0.5	Poor
<0.5	Unacceptable



# The Development Process of SAFETY CULTURE INDEX



# Proportion and calculation of safety culture score

Table 4.7. Identification of safety culture index for the the Malaysian construction industry

Section	No. of questions	Section weightage (%)	Individual question score weightage (%)	Likert Scale Score					Maximum Scoring for section				
				1 (1/5)	2 (2/5)	3 (3/5)	4 (4/5)	5 (5/5)	1 (1/5)	2 (2/5)	3 (3/5)	4 (4/5)	5 (5/5)
Organizational Safety and Health Commitment	12	21.05							4.2	8.4	12.6	16.8	21
Safety and Health Organization	7	12.28							2.45	4.9	7.35	9.8	12.25
Safety And Health Regulation and Rule	6	10.53							2.1	4.2	6.3	8.4	10.5
Safety and Health Management Behavior	8	14.04	1.75	0.35	0.70	1.05	1.40	1.75	2.8	5.6	8.4	11.2	14
Safety Operation Behavior	6	10.53							2.1	4.2	6.3	8.4	10.5
Safety Education and Training	8	14.04							2.8	5.6	8.4	11.2	14
Safety Information Exchange	7	12.28							2.45	4.9	7.35	9.8	12.25
Safety Rewards and Punishment	3	5.26							1.05	2.1	3.15	4.2	5.25
		<b>Total Scoring for section</b>							<b>19.95</b>	<b>39.90</b>	<b>59.85</b>	<b>79.8</b>	<b>99.75</b>



- The scoring weightage were based on percentage proportion between number of questions for each section and total number of questions (57 questions)
- Organizational Safety and Health Commitment showed the highest weightage (21.05%)
- weightage is Safety Rewards and Punishment showed the lowest weightage (5.26%)

# Proportion and calculation of safety culture score

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\*The individual question score weightage was calculated based on the proportion between no. of questions and scoring weightage for each section



# Proportion and calculation of safety culture score

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Organizational Safety and Health Commitment	12	21.05								4.2	8.4	12.6	16.8	21
Safety and Health Organization	7	12.28								2.45	4.9	7.35	9.8	12.25
Safety And Health Regulation and Rule	6	10.53								2.1	4.2	6.3	8.4	10.5
Safety and Health Management Behavior	8	14.04	1.75	0.35	0.70	1.05	1.40	1.75		2.8	5.6	8.4	11.2	14
Safety Operation Behavior	6	10.53								2.1	4.2	6.3	8.4	10.5
Safety Education and Training	8	14.04								2.8	5.6	8.4	11.2	14
Safety Information Exchange	7	12.28								2.45	4.9	7.35	9.8	12.25
Safety Rewards and Punishment	3	5.26								1.05	2.1	3.15	4.2	5.25
			<b>Total Scoring for section</b>							<b>19.95</b>	<b>39.90</b>	<b>59.85</b>	<b>79.8</b>	<b>99.75</b>



- Maximum score (1.75) was given for the most suitable answer selection
- Minimum (0.35) was given for the less suitable answer
- The Likert scale score depends on the questions themselves.



# Proportion and calculation of safety culture score

Table 4.7. Identification of safety culture index for the the Malaysian construction industry

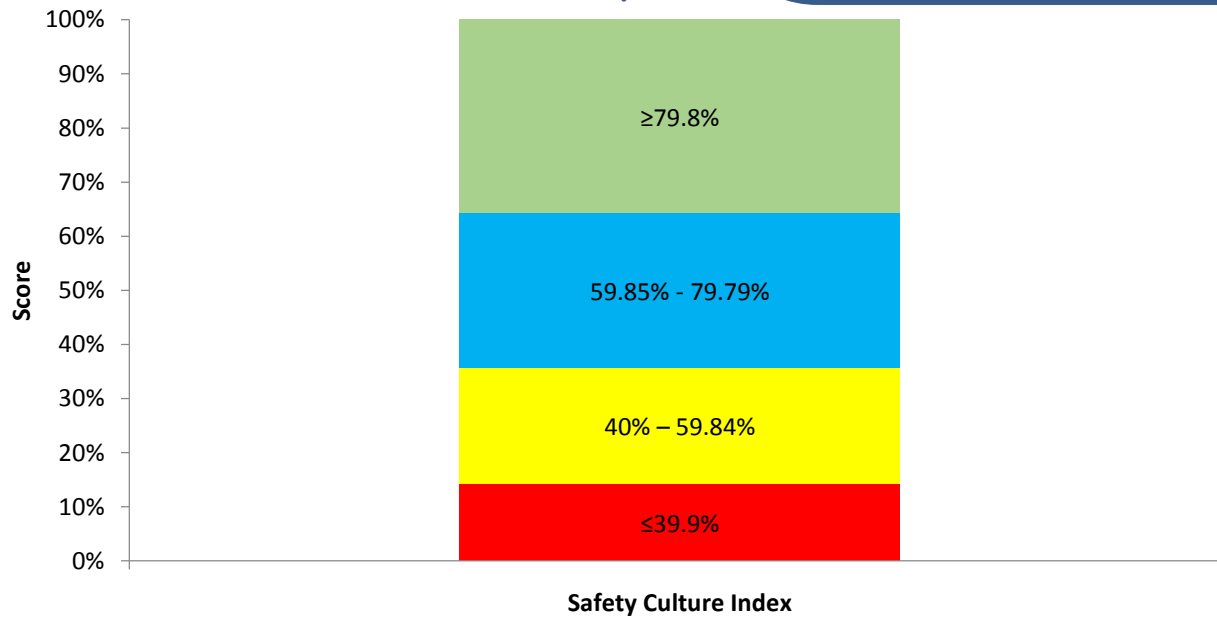
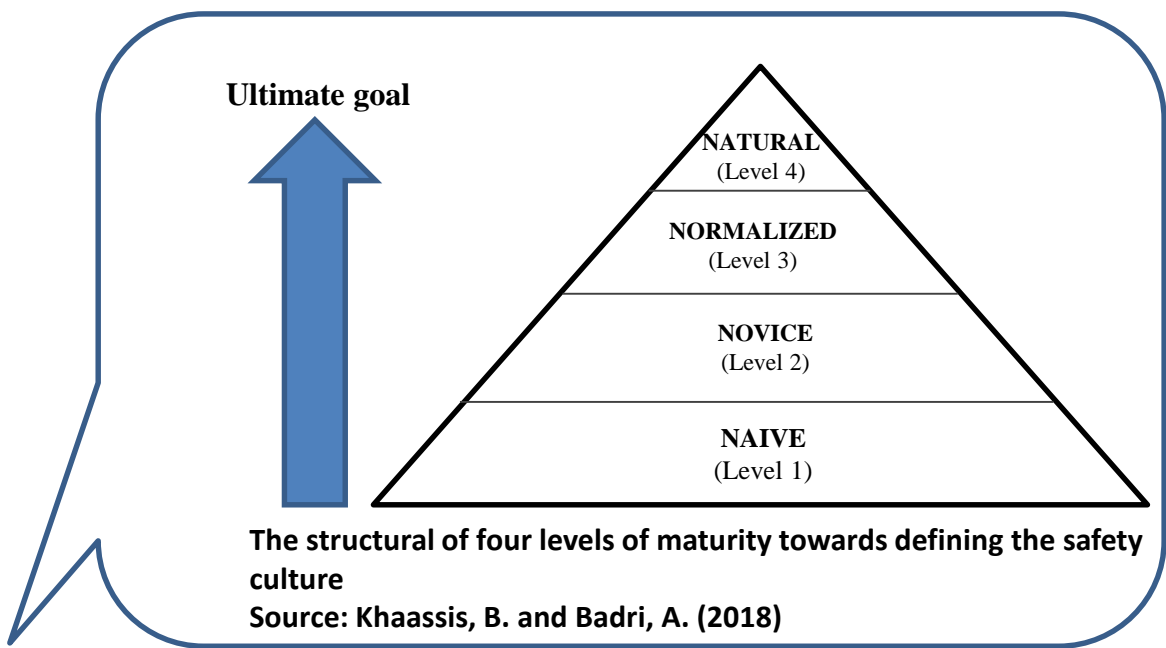
Section	No. of questions	Section weightage (%)	Individual question score weightage (%)	Likert Scale Score					Maximum Scoring for section				
				1 (1/5)	2 (2/5)	3 (3/5)	4 (4/5)	5 (5/5)	1 (1/5)	2 (2/5)	3 (3/5)	4 (4/5)	5 (5/5)
Organizational Safety and Health Commitment	12	21.05							4.2	8.4	12.6	16.8	21
Safety and Health Organization	7	12.28							2.45	4.9	7.35	9.8	12.25
Safety And Health Regulation and Rule	6	10.53							2.1	4.2	6.3	8.4	10.5
Safety and Health Management Behavior	8	14.04	1.75	0.35	0.70	1.05	1.40	1.75	2.8	5.6	8.4	11.2	14
Safety Operation Behavior	6	10.53							2.1	4.2	6.3	8.4	10.5
Safety Education and Training	8	14.04							2.8	5.6	8.4	11.2	14
Safety Information Exchange	7	12.28							2.45	4.9	7.35	9.8	12.25
Safety Rewards and Punishment	3	5.26							1.05	2.1	3.15	4.2	5.25
		<b>Total Scoring for section</b>							<b>19.95</b>	<b>39.90</b>	<b>59.85</b>	<b>79.8</b>	<b>99.75</b>



Five total maximum score (19.95, 39.90, 59.85, 79.8 and 99.75) for each Likert scale were calculated based on the determined values.



# Integrated safety culture index



■ Naive ■ Novice ■ Normalize ■ Natural

Integrated safety culture index based on Capability Maturity Model (CMM)

# Conclusion

This assessment tools can be used to assess safety culture which integrate **organizational safety commitments, safety organisation, safety rules, safety management behavior, safety operation behavior, safety education & training, safety information exchange, rewards & punishment** in the construction industries based on the **four** different type of **maturity level**.







INTRODUCTION OF CSCI INSTRUMENT



INDIVIDUAL REVIEW



SITE ASSESSMENT

NIOSH. UPM. DOSH. CIDB. UTM. PERKESO. MBAM. MSOSH. EHOM. SIME DARBY PROPERTY. PUTRAJAYA HOLDING. GAMUDA BERHAD. SUNWAY CONSTRUCTION. IJM CONSTRUCTION. SP SETIA. AHMAD ZAKI. GADANG ENGINEERING. AIMACON. RANHILL BERSEKUTU. NESTCON BUILDER. TRC. S&F CONSTRUCTION. DK RICH RESOURCES. WOO LAO FAT CONSTRUCTION. CLW BUILDERS. SRI BINARAYA SDN. BHD. GADANG CFRD. HAB CONSTRUCTION. SAMSUNG C&T CORPORATION UEM CONSTRUCTION JV.

