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QNO 2 Risk Log/Risk register: is a document used is a Risk management Tools To fulfill regulatory compliance acting as a repository for all risks identified and includes additional information about each risks e.g. nature of The risks reference and owner mitigation measures it can be displayed at a scatterplot or as a Table.

There are many different Tools that can act as risk register from comprehensive software suits To simple spread sheets The effectiveness of these

Tools depends on there implementation and the organisation's culture. A typically risk register contains.

- * A risk category to group similar risks.
- * The risk break down structure.
- * A break description or name of the risk to make the risk easy to discuss.
- * The impact if event actually occurs rated on an integer scale
- * The probability or likelihood of its occurrence rated on an integer scale
- * The Risk score is the multiplication of probability and impact and is often used to rank the risks.
- * Common ~~miti~~ mitigation steps e.g. are identified.

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The Risk register is called qualitative if the probability are estimated by ranking them as high to low impact it is called quantitative

both the impact and the probability is put into number e.g. a risk might have \$1m impact and a 50% probability.

I want to developed a risk register for a project. but sorry I am not working in field. There I collect some common construction project risk from many project in our Area. Therefore I want to develop a risk register for these common

Project risk so my project
 NAME is common project
 risk and the steps involved in
 my risk register are as follows.
 I collect 10 common risks.

- Step # of
- 1 draw a risk category.
 - 2 The risk break down structure
 - 3 Risk description.
 - 4 Probability of risk.
 - 5 Impact of risk
 - 6 Severity of risk
 - 7 owner ~~mitigation~~
 - 8 mitigating action.

We want to develop risk
 register for these common project
 risk in the form of Tables

Risk Register project NAME = Common project Risk

ID	date	Risk description	Likely hood of risk occurring	Impact of risk	Severity	Time impact	Cost impact	owner	Mitigation action
1	31/1/20	Project purpose is not well defined	medium	high	high	Time over run	NO	Project sponsor	To ensure that purpose is defined in project charter
2	7/1/20	Project Design is incomplete	Low	high	high	Time over run	Cost overrun	Sponsor	define scope and design in detail
3	13/1/20	Project schedule is not complete	Low	medium	medium	overrun	NO	PM	The PM to understaind the plane and reduced missTask
4	16/1/20	No control on staff	medium	medium	medium	overrun	NO	PM	The PM have to complete command on staff
5	21/1/20	Contractor delay	Medium	high	high	over run	over run	PM	To include late penalty on contractor

6	25/1/20	Estimating Error	Medium	high	high	overrun	overrun	PM	Break This error
⑦	28/1/20	unplanned work	Low	high	medium	overrun	overrun	Team manager	Check previous project for actual work
⑧	29/1/20	Lack of communication	medium	medium	medium	overrun	NO	PM	To provide better way of communication
⑨	3/2/20	scope creep	medium	high	high	overrun	overrun	PM	Document project charter and get authorised by board
⑩	5/2/20	inadiguate Testing equip	high	high	high	over run	over run	PM	PM have To Buy good Testing equipment

Q.No (2)

Cost-benefits analysis

It is a systematic approach to estimating the strength and weakness of alternatives used to determine option which provide the best approach to achieving benefits while preserving savings (for example in transaction activities and functional business requirements). A CBA may be used to compare completed or potential courses of action or to estimate the value against the cost of decision project or policy. It is commonly used in commercial transaction and project investment.

There are two main applications of CBA that are effective for a project.

⑧
① To determine the investment is sound ascertaining and by how its benefits outweigh its cost.

② To provide a basis for comparing investment comparing the total expected cost of each option with its total expected benefits.

Benefits and cost of CBA are expressed in ~~Term~~ monetary Term and are adjusted for the time value of money. all flows of benefits and cost over time are expressed on a common bases in term of their net present value. The CBA is important for investor that he examine how much benefits occur from it.

CBA is also effective for ⁽⁹⁾
a project. Because CBA can be
help full Tool for business or project
investor To undertake when considering
a new course of action.

* Running a CBA in a project can
help visualise the implication and
impact of that course of action
and is often very helpful
for smaller or medium size
decision that are more immediate
in scope of time.

There are other advantage of CBA
To practicing in certain project
for bigger decision with a longer
Time horizons.

Real life example of CBA

Examples ∴ Custom Graphic works has been operating for just over a year and sales are exceeding targets. Currently two designers are working full time and the owner is considering increasing capacity to meet demand. He decided to complete a cost benefits analysis to explore his choice.

Assumption: Currently the owner of the comp has more work than he can cope with and he is outsourcing to a design firm at a cost of \$50 an hour. The company outsource an average of 100 hours of work each month.

- * he estimates the revenue will increase by 50 percent with increased capacity
- per person production will increase by 10 percent with more working space

The CBA A is horizon is one year
that is he expect benefits to
accrue within the year.

Costs

Category	Details	Cost in 1st year
Lease	(750) ² feet available next door at \$18 per square foot	\$ 13500
Lease hold improvement	Knock out walls and reconfigure office space	\$ 15000
Hire two more designer	Salary including benefits	\$ 75000
	Recruitment cost	\$ 11250
	orientation and Training	\$ 3000
Two additional workstation	furniture and hardware	\$ 6000
	software Licenses	\$ 1000
Construction downtime	Two weeks of approximately \$75000 revenue per week	\$ 15000
Total		\$ 139750

Benefits

(12)

50 percent revenue increased	Benefit with in 12 months \$ 195,000
Paying in house designer \$15 in hour outsourcing (100h per months, on average, saving equal \$ 3500 a month	\$ 42000
10% improved productivity per designer	\$ 58500
(\$75000 + \$3750 = \$11250 revenue per week with a 10% increase = \$11250/week	
improved customer service and retention	\$ 60000
as a result of 100 percent in house design	\$ 305500
Total	

He calculate The pay back Time as
shown below

$$\$ 139750 / \$ 305500 = 0.46 \text{ of a year}$$

Or approximately 5.5 months

invariably the estimate of the benefit
 are subjective and there is a
 degree of uncertainty associated
 with a anticipated revenue increase

Despite this the owner of custom

Graphic work decide to go ahead

with the expansion and hiring given

the extent to which the benefits

outweigh the cost within 1st year.

Q No 3) Normal probability distribution

it is the most important probability distribution in statistics because it fits many natural phenomenon, for, e.g. height, blood pressure, measurement error, and IQ scores follow the normal distribution. it is also known as Gaussian distribution and the bell curve. The normal pdf:

$$f(x) = \frac{1}{\sigma\sqrt{2\pi}} e^{-\frac{(x-\mu)^2}{2\sigma^2}} \text{ where}$$

μ = Mean

σ^2 = Variance

π = 3.14159 ratio of circumference to dia

e = 2.71829

important thing about it the normal distribution.

① There are infinitely many variations of the normal distribution differentiated by μ and σ^2

(2) The highest point of a normal is at the mean which is also the median

(3) The normal distribution is symmetric. This implies that $f(x) = 1 - f(-x)$

(b)

Ans

Given data

mean $\mu = 60000 \text{ PKR} \rightarrow (1)$

Standard deviation $\sigma = 15000 \text{ PKR} \rightarrow (2)$

$X \leq 45,000 \rightarrow (3)$

Required

The portion of the area under the normal curve from 45 all the way to left.

Z-score Table at the end of the paper. Table. 2

Solution

(16)

The natural log of normal distributed with the population

Mean $\mu = 60000$ PKR is 11.002 and

Standard deviation $\sigma = 15000$ PKR is

9.6158.

What is the probability of a randomly selected employees earning less than 45000 PKR annually

This is a tough one. first let find out what is the natural log of 15000 it's ~~9.6158~~ 9.6158

Next we need the standard deviation of log income is 9.6158.

Now we can form a Z-score.

$$Z = \frac{(x - \mu)}{\sigma} \quad \text{--- (1)}$$

put value in (1)

$$Z = \frac{(10.714 - 11.002)}{9.615}$$

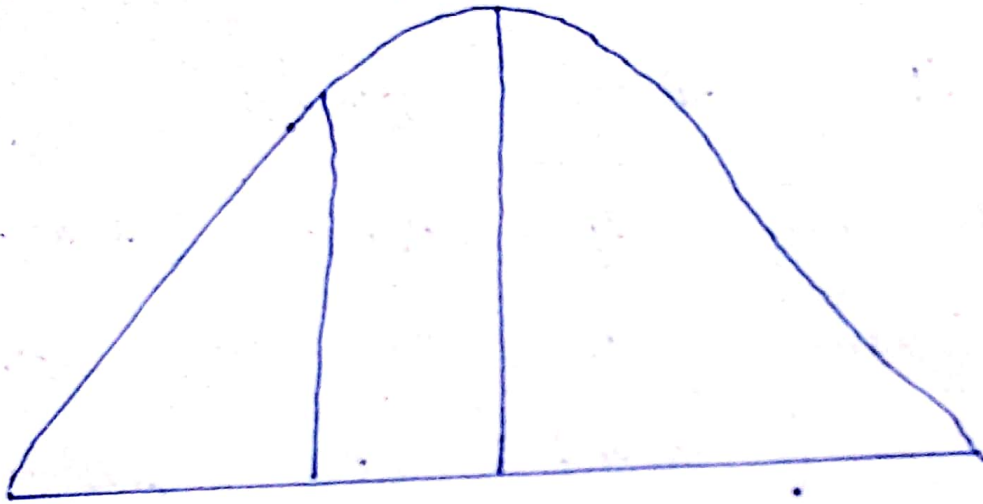
$$Z = -0.03$$

(17)

what is $P(Z = -0.03)$

from Table 2 we have (.51197)

$$1 - P(Z < .03) = 1 - F(.03) = 1 - .51197 = .48803$$



The end