

$$\text{연구개발생산성} = \frac{\text{연구개발로부터의 산출}}{\text{연구개발에 대한 투입}}$$

$$= \frac{\text{연구성과}}{\text{연구투자}} \times \frac{\text{사업성과}}{\text{개발투자}}$$

et. al.(1985)

. Hodge(1963), Foster

" 가

(Ranftl, 1978): p.1)"

Fusfeld et. al(1982), Schainblantt(1982)

.1)

가

가가가

가 가 가

(individual level),

(project level),

(organizational level), 가 (national level)

.2)

가 가

1.

가 , ,

(production function)

Cobb - Douglas

Griliches & Mairesse(1984). Goto &

Suzuki(1989), Lichtenberg & Siegel(1991)

Transog

. Bernstein & Nadri(1988) 가

NISTEP(1992)

가

가

1 Martin & Irvine(1983)

투입 측정지표	산출 측정지표
① 연구개발 종사 과학자의 수 ② 과학자들의 강의 관련 총소요시간 ③ 연간 운영비 ④ 지원인력수(number of support staff)	① 간행물수(number of publication) ② 인용(citation)의 수 ③ 동료평가(peer evaluation)

2.

가

Martin & Irvine(1983), UNESCO(1977), Crow(1988), Geisler(1994), Frame(1983), Stolte - Heiskanen et. al (1979) ³⁾ (1995), (1993), (1981)

(basic research)

(B. R. Martin)

(John Irvine)

⁴⁾

4

가가

가

4가

3가

가

Geisler(1994)

가가가

가

⁵⁾ Geisler

(core indicator)

(organization - specific indicator)

가 가 가

가

1) (citation)

가

, 2)

가 , 3)

가가

1)

가

, 2) 가

3.

가

(Fusfeld, 1982),

McCannel(1980), Seashore & Yuchtman

(1967), Ranftl(1978), Stahl & Koser(1978)
McConnel

(1989), (1990)

가
(personal factor), (corporate and departmental factor) .6)
(time factor)

Ranftl The Hughes Studies 2 (1973~'74, 1975~'77)

.1 가
(organizational indicator) (individual indicator) , 2
(operational productivity), (managerial productivity), . Ranftl
(employee productivity)

가

1.

가가

가

(effetiveness)

5

(moted)

.8)

1) (Goal Model)

(technical report),

(algorithms)

가

(publication),

(citation rate),

2) (System Resource Model)

(unit)

가 가

가

(1978) - Seashore & Yuchtman (1967) . Seashore & Yuchtman

가

Chen

.9)

가

. Lipetz (1965)

가

(scientific content analysis)

.10)

가

3) (Internal Process Model)

(Bennis, 1960 ; Nadler & Tushman, 1980)
가

가 가

Shahl(1975) 3 가 .11)
(working group), (emphathy) (work load) Moser(1983) 400
(synergy), (unit) 11 .12)
(unit adaptability),

4) (Strategic Constituencies Model)

가

가

Stahl & Steger(1977) .13)

가

5) (Integrated Model)

(variation)

(Molnar & Rogers, 1976; Stasser & Denniston, 1979)
(construct space)
.14)

Vallmer(1966)

.15)

가

Martin & Irvine (1983)

(partial indicatou)'

가,

.16)

Crow(1988)

() , ()

가

() ,

가() ,

.17)

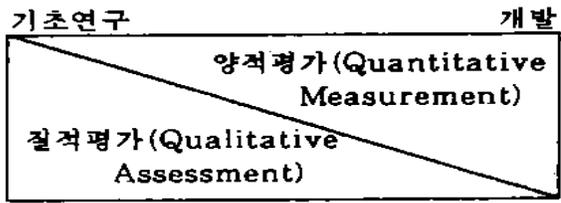
2.

가 (quantitative measurement),
(semiquantitative measurement), 가(qualitative assessment) 3 가 . (Streers,
1975; Cameron,1978; Pappas & Remer, 1985)

가 가 (algoritm)

(qualitative judgements)

< 2 >



← 업무의 복잡성, 독창성, 추상성의 증가

자료: Ranftl(1978) P39

가 가 가 가 가 , (Frame, 1983; Ranftl, 1978; , 1993).
 가 , 가 , 18) 가 가가
 < 2>

3.

Schumann, et al (1995)

.19) 가 , , 가 , (Kaplan & Norton, 1992), , , 가 . ,

Schumann, et al (end - of - process measurement) (in - process measurement)
 Nayak(1987) , Brown & Svenson(1988) (internal measurement) (external measurement)
 measurement) 4가 .

, () . 가
 , () .
 , ,
 < 3>

	결과 측정	과정 측정
내적 측정	(I) 성과추적	(II) 기술적 생산성 개선
외적 측정	(III) 경쟁자 평가	(IV) Benchmarking

자료: Schumann, et., al(1995) p.48

가

(가) , (가) . 가 ,

(Benchmarking : ,)
2

가

가
가

Anthony & Herzlinger(1975)
Jain & Triandis(1990)

.20)

가 가 ,

4.

가가 (: , ,)

가

가

3가

가

가

1)

가 가 가 가 가 가 가 가
가 가 가 가 가 가 가 가
(partial productivity)

2)

(time interval)

가 가 가 가 가 가 가 가
(21)22)

3)

가 가 가 가 가 가 가 가

4)

(learning - by - doing),

(synergy effect)

가

가

가
가

가

가

가
가

가

가

가

가

【 】

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- 2) 안종찬(1991), 연구개발 생산성의 영향요인과 측정모형, 충남대학교, 박사학위논문
- 3) 이병민, 윤석기(1994), 연구생산성 향상을 위한 새로운 전략, 생산성 논총 제8권 제1호, pp.39~52
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- 6) Crow, M(1988), "Technology and Knowledge Transfer in Energy R&D Laboratories," Evaluation and Program Planning, Vol. 11, No. 1. pp. 86~89.
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- 13) Ranftl, R(1974) R&D Productivity (Study Report: Los Angeles)
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$$[\text{Productivity}] = [\text{Effectiveness}] = [\text{Output}] \times [\text{Quality}]$$
. Jain, R & Triandis, M(1990) Management of Research and Development Organizations; Managing the Unmanageable(John Wiley & Sons: New York) pp, 44~48.

2) (1993) , pp,364~373

3)

4) (partial indicator) 가
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14) (construct) (property) 가 가
(indicator) 가 (concept) 가 (operationalized) (construct space)
Kerlinger, J(1985) Foundations of Behavioral Research, 3rd ed., Holt, Rinehart and Winston, Inc., pp, 27~28

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가
'converging partial indicator'
Martin & Irvine (1983), pp. 61~90

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20) Jain & Triandis, op , cit., pp, 47~48

21) Miller, op. cit., p, 26

22) 8가 , 가 8~12
. McConnell,op, cit.,, p, 8