

rahimifo@tums.ac.ir:

// : // :

LISREL 8-12

/ (se = / ) / (se = / ) / (se = / ) / (se = / )  
/ (se= / ) / (se= / ) / (se= / ) / (se= / )

(Hamberaeus and Sjolín 1979; Fergusson et al. 1981; Chandra 1979; Downham et al. 1976; Fergusson et al. 1987; Golding et al. 1982; Newton 1979).

(Richards et al. 2002; Anderson et al. 1999; Gorman and Pollitt 1992; Lucas and Morley 1994; Villar et al. 1984).

(Borresen 1983)

(Barker 1994; Hoefler and Hardy 1929; Menkes 1977; Douglas 1969; Touwen 1976).

.(Smith and Gerber 1993)

(Taylor and Wadsworth 1984; Rodgers 1978; Rogan and Gladen 1993; Richards et al. 2002).

(Atkinson et al. 1990; Doyle et al. 1992; Garrow et al. 1993; Hamberaeus and Sjolín 1979; Barker 1994).

(Barker 1994)

(Broad 1872; Florey et al. 1995; Hoefler and Hardy 1929; Lanting et al. 1994; Menkes 1977; Taylor and Wadsworth 1984)

(Douglas 1954; Fergusson et al. 1981; Grummer-Strawn 1993; Morrow-Tlucak et al. 1988; Oski 1993)

(Fergusson et al. 1982; Greene 1980; Rodgers 1978; Rogan and Gladen 1993; Rogerson 1939).

AH4

.(Martyn et al. 1996)

.(Touwen 1976)

(Barker 1994; Douglas 1954; Martyn et al. 1996).

(Garrow et al. 1993; Barker 1994; Grummer-Strawn 1993; Greene 1980; Gorman and Pollitt 1992).

(verbal)

(Taylor and Wadsworth 1984; Rodgers 1978; Rogan and Gladen 1993; Martyn et al. 1996).

( ) %

LISREL

(Joreskog and Sorbom 1993)

/ /  
/

(se= / ) /  
(P< / )  
(se= / ) /  
)  
(

(SD= / ) /  
/  
(SD= / )  
( )

( )

(se = / ) /  
(se = / ) / / (SD= / ) /  
(SD= / )  
/ (SD= / ) /  
(SD= / )

(SD= / ) / ( / ) /

---

		/	
		/	(se= / )
		(se= / )	/
			(se= / ) /
(	)		
		/	(se= / )
		(	)
		(	)

(Carlson et al. 1986; Fraquharson et al. 1992; Lucas and Morley 1997).

Santrock )

(1995

)

(

(Menkes 1977; Broad 1972)

(se= / ) /

(se= / ) /

( )

(Gerber and Smith 1993)

(Florey 1995)

(Greene 1980; Rodgers 1978; Lucas and Morley 1994; Pollock 1994).

Lucas and Morley

/

/

Docosa ) DHA

(Hex Aenoic

/ /

(Atkinson et al. 1990)

(Stuart-Macdam 1995)

Bowlby

(Bowlby 1969)

Hwang

(Hwang 1978)

(Santrock 1995)

(Lucas et al. 1992; Morgan et al. 1993; MacArthur et al. 1992; Holland and Rabbitt 1991; Oates and Sheldon 1987; Sarafino 1990).

(Beal 1980)

Atkinson



/...

---

Michael

Rex

Marcus Richard

Wadsworth

Galbraith

P-value**	(SD)	*	( )
/	: ( )+		
/	/ ( / ) / ( / ) / ( / )		
/	/ ( / ) / ( / ) / ( / )		
/	/ ( / ) / ( / ) / ( / )		
/	/ ( / ) / ( / ) / ( / )		
/	/ ( / ) / ( / ) / ( / )		

P \*

\*\*

( )	*	(SD)	P-value
( )			
≤		/ ( / )	< /
-		/ ( / )	
≥		/ ( / )	
( )			
≤		/ ( / )	< /
-		/ ( / )	
≥		/ ( / )	
( )			
≤		/ ( / )	< /
-		/ ( / )	
≥		/ ( / )	
( )			
≤		/ ( / )	/
-		/ ( / )	
≥		/ ( / )	

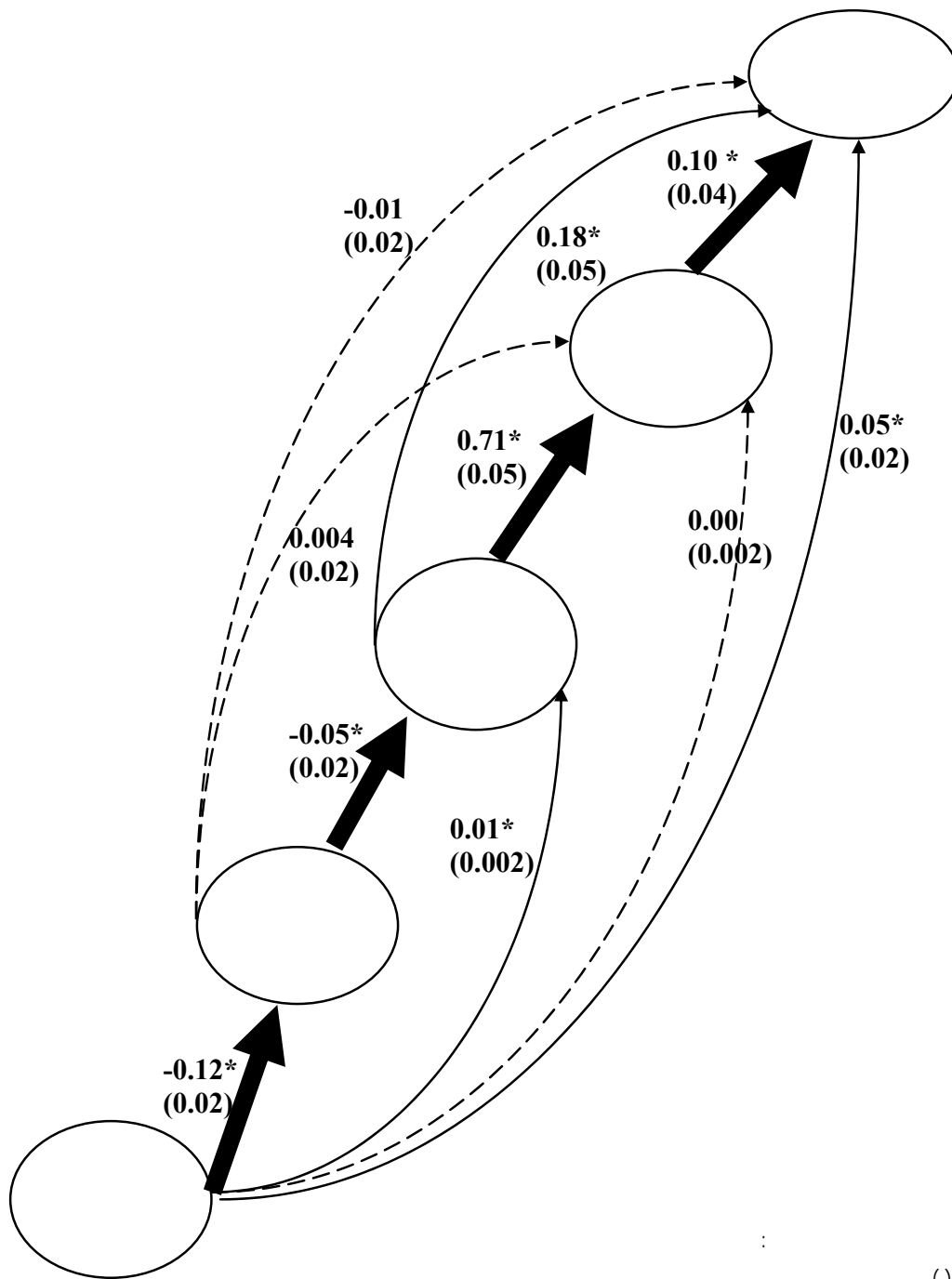
\*

P \*\*

/		/	- / *		- / *	)
( / )		( / )	( / )		( / )	(... ,
/ *	/	/ *	/ *	/ *		( )
( / )	( / )	( / )	( / )	( / )		
/ *	/ *	/	/	/	-	( )
( / )	( / )	( / )	( / )	( / )		
/	/		/ *	/	/ *	
( / )	( / )		( / )	( / )	( / )	

P &lt; / \*

( )



فلش سیاه مقطع:

فلش سیاه باریک:

(P < 0.05)

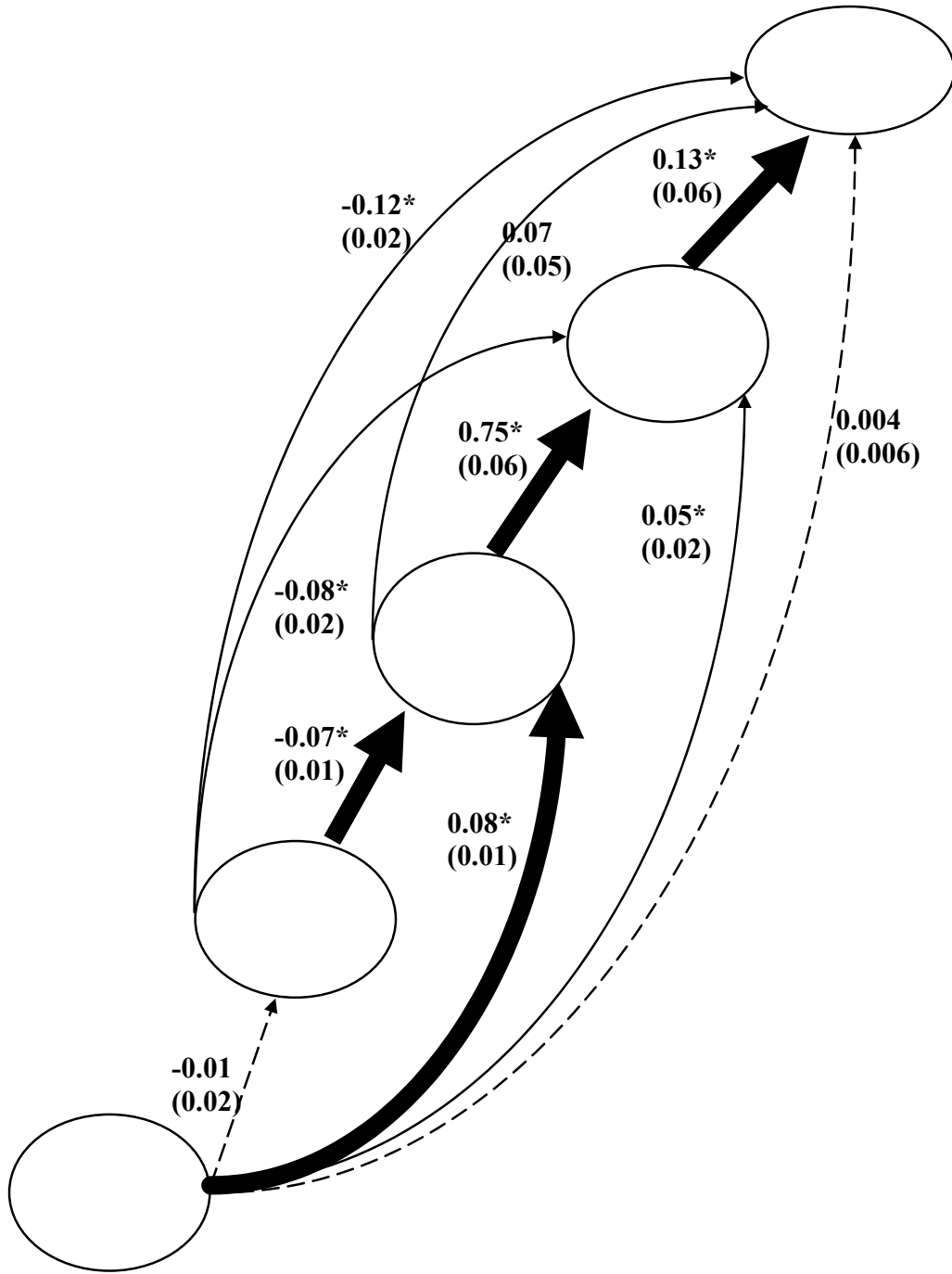
( )

\*

) Goodness of Fit Index=GFI

) Adjusted Goodness of Index=AGFI

GFI=1.00; AGFI=0.99; n=2548)



فلش سیاه مقطع:

فلش سیاه باریک:

- 
- ( )
- (P < 0.05)
- \*
- ( ) Goodness of Fit Index=GFI
- ( ) Adjusted Goodness of Index=AGFI
- 
- 

(GFI=1.00; AGFI=0.98; n=2814)

## References

- Anderson, J.W., Johnstone, B.M. and Remley, D.T., 1999. Breast feeding and cognitive development: a meta-analysis. *American Journal of Clinical Nutrition*. **70** (4), pp. 525 – 535.
- Atkinson, R.L., Atkinson, R.C., Smith, E.E. and Bem, D.J., 1990. *Introduction to psychology*. San Diego: Harcourt Brace Jovanovich Publishers.
- Barker, D.J.P., 1994. *Mothers, babies, and disease in later life*. London: BMJ.
- Beal, V.A., 1980. Nutrition in the life span. New York: John Wiley & Sons.
- Børresen, H.C., 1983. Breast milk in neonatal care. In: Advances in clinical nutrition. Lancaster MTP Press: Johnston IDA, ed.
- Bowlby, J., 1969. Attachment and loss. Vol. 1. Harmondsworth: Plican Books.
- Broad, F.E., 1972. The effects of infant feeding on speech quality. *New Zealand Medical Journal*. **76**, p.28.
- Carlson, S.E., Rhodes, P.G. and Ferguson, M.G., 1986. Docosahexaenoic acid status of preterm infants at birth and following feeding with human milk or formula. *American Journal of Clinical Nutrition*. **44**, pp. 798 – 884.
- Chandra, R.K., 1979. Prospective studies of the effect of breast feeding on incidence of infection and allergy. *Acta Paediatric Scandinavia*. **68**, pp. 691-694.
- Douglas, J.W.B., 1954. Birth-weight and the history of breast feeding. *The Lancet*. **2**, pp. 685-688.
- Douglas, J.W.B., 1969. Effect of early environment on later development. *Journal of the Royal College of Physicians of London*. **3**, pp. 359-364.
- Downham, M.A.P.S., Scott, R., Sims, D.G., Webb, J.K.G. and Gardner, P.S., 1976. Breast-feeding protects against respiratory syncytial virus infections. *British Medical Journal*. **2**, pp. 274 - 276.
- Doyle, L.W., Rickards, A.L., Kelly E.A., Ford, G.W. and Callanan, C., 1992. Breast feeding and intelligence. *The Lancet*. **399**, pp. 744-745.
- Dunn, G., Everitt, B. and Pickles, A., 1993. *Modelling covariances and latent variables using EQS*. London: Chapman & Hall.
- Faraquharson, J., Cockburn, F., Patrick, W.A., Jamieson, E.C. and Logan, R.W., 1992. Infant cerebral cortex phospholipids fatty acid composition and diet. *The Lancet*. **340**, pp. 810 – 813.
- Fergusson, D.M., Horwood, L.J. and Shannon, F.T., 1987. Breast feeding and subsequent social adjustment in six- to eight-year-old children. *Journal of Child Psychology and Psychiatry*. **28**, pp. 378-386.
- Fergusson, D.M., Beautrais, A.L. and Silva, P.A., 1982. Breast-feeding and cognitive development in the first seven years of life. *Social Science and Medicine*. **16**, pp. 1705-1708.
- Fergusson, D.M., Hoewood, L.J., Beautrais, A.L., Shannon, F.T. and Taylor, B., 1981. Eczema and infant diet. *Clinical Allergy*. **11**, pp. 325 - 331.
- Florey, C.D.V., Leech, A.M., Blackhall, A., 1995. Infant feeding and mental and motor development at 18 months of age in first born singletons. *International Journal of Epidemiology*. **24** (3), pp. s21 - s26.
- Garrow, J.S., James, W.P.T. and Ralph, A., 1993. *Human nutrition and dietetics*. Edinburgh: Churchill Livingstone.
- Golding, J., Taylor, B., Wadsworth, J. and Butler, N., 1982. Breast-feeding, bronchitis, and admissions for lower-respiratory illness and gastroenteritis during the first five years. *The Lancet*. **29**, pp. 1227-1229.
- Gorman, K.S. and Pollitt, E., 1992. Relationship between weight and body proportionality at birth, growth during the first year of life, and cognitive

- development at 36, 48, and 60 months. *Infant Behavior Development*. **15**, pp. 279 - 295.
- Greene, L.S., 1980. Factors affecting nutritional status, physical growth, and neurological development: Final comments. In: *Social and biological of nutritional status, physical growth, and neurological development*. Academic Press New York: Greene LS, Johnston FE, eds.
- Grummer-Strawn, L.M., 1993. Does prolonged breastfeeding impair child growth? A critical review. *Pediatrics*. **91**(4), pp. 766-771.
- Hambraeus, L., Sjölin, S., 1979. *The mother/child dyad — nutritional aspects*. Sweden, Stockholm: Almqvist & Wiksell International.
- Hoefler, C. and Hardy, M.C., 1929. Later development of breast fed and artificially fed infants: comparison of physical and mental growth. *Journal of the American Medical Association*. **92**, pp. 615-619.
- Holland, C.A. and Rabbitt, P., 1991. The course and causes of cognitive change with advancing age. *Reviews in Clinical Gerontology*. **1**, pp. 81 - 96.
- Hwang, C.P., 1978. Mother infant interaction: effects of sex of infant on feeding behavior. *Early human development*. **2**(4), pp. 341 - 349.
- Joreskog, K.G. and Sörbom, D., 1993. *LISREL 8: structural equation modeling with the SIMPLIS command language*. Chicago, Ill: Scientific Software International.
- Lanting, C.I., Fidler, V., Huisman, M., Touwen, B.C.L. and Boersma, E.R., 1994. Neurological differences between 9-year-old children fed breast-milk or formula-milk as babies. *The Lancet*. **344** (12), pp. 1319 - 1322.
- Lucas, A. and Morley, R., 1994. Does early nutrition in infants born before term program later blood pressure? *British Medical Journal*. **309**, pp. 304-308.
- Lucas, A., Morley, R., Cole, T.J., Lister, G. and Leeson-Payne, C., 1992. Breast milk and subsequent intelligence quotient in children born preterm. *The Lancet*. **339**, pp. 261-264.
- MacArthur, C., Knox, E.G. and Simons, K.J., 1992. Breast feeding and intelligence. *The Lancet*. **339**, pp. 612-613.
- Martyn, C.N., Gale, C.R., Sayer, A.A. and Fall, C., 1996. Growth in utero and cognitive function in adult life: Follow up study of the people born between 1920 and 1943. *British Medical Journal*. **312**, pp. 1393 - 1396.
- Menkes, J.H., 1977. Early feeding history of children with learning disorders. *Developmental Medicine and Child Neurology*. **19**, pp. 169-171.
- Morgane, P.J., Austin-Lafrance, R., Bronzino, J., Tonkiss, J., Diaz-Cintra, S. and Cintra, L., 1993. Prenatal malnutrition and development of the brain. *Neuroscience and Biobehavioral Reviews*. **17**, pp. 91 - 128.
- Morley, R. and Lucas, A., 1997. Nutrition and cognitive development. *British Medical Bulletin*. **53** (1), pp. 9.1 - 9.12.
- Morrow-Tlucak, M., Haude, R.H. and Ernhart, C.B., 1988. Breast feeding and cognitive development in the first 2 years of life. *Social Science and Medicine*. **26**, pp. 635-639.
- Newton, N., 1979. Psycho-social aspects of the mother/father/child unit. In: *The mother/child dyad — nutritional aspects*. Stockholm, Sweden Almqvist & Wiksell International: Hambraeus L., Sjölin S., eds.
- Oates, J., Sheldon, S., 1987. *Cognitive development in infancy*. Hove: L.Erlbaum in Association with the Open University.
- Oski, F.A., 1993. Infant nutrition, physical growth, breast feeding, and general nutrition. *Current Opinion in Pediatrics*. **5**, pp. 385-388.
- Pollock, J.I., 1994. Long-term association with infant feeding in a clinically advantaged population of babies. *Developmental Medicine and Child Neurology*. **36**, pp. 429-440.

- Richards, M., Hardy, R. and Wadsworth, M.E.J., 2002. Long-term effects of breast-feeding in a national birth cohort: educational attainment and midlife cognitive function. *Public Health Nutrition*. **5**(5), pp. 631 – 635.
- Rodgers, B., 1978. Feeding in infancy and later ability and attainment. A longitudinal study. *Developmental Medicine and Child Neurology*. **20**, pp. 421-426.
- Rogan, W.J. and Gladen, B.C., 1993. Breast feeding and cognitive development. *Early Human Development*. **31**, pp. 181-193.
- Rogerson, B.C.F., Rogerson, C.H., 1939. Feeding in infancy and subsequent psychological difficulties. *Journal of Mental Science*. **85**, pp. 1163-1182.
- Santrock, J.W., 1995. *Life span development*. Madison: Brown and Benchmark Publisher.
- Sarafino, E.P., 1990. *Health psychology: Biopsychosocial interactions*. Chichester: John Wiley & Sons.
- Saris, W.E. and Stronkhorst, L.H., 1984. *Causal modelling in nonexperimental research. An introduction to the LISREL approach*. Amsterdam, The Netherlands: Sociometric Research Foundation.
- Smith, V.L. and Gerber, S.E., 1993. Infant feeding and phonologic development. *International Journal of Pediatric Otorhinolaryngology*. **28**, pp. 41-49.
- Stuart-Macadam, P., 1995. Biocultural perspective on breastfeeding. In: *Breastfeeding: Biocultural Perspectives*. New York Aldine De Gruyter: P. Stuart-Macadam and KA Dettwyler, eds.
- Taylor, B. and Wadsworth, J., 1984. Breast feeding and child development at five years. *Developmental Medicine and Child Neurology*. **26**, pp. 73-80.
- Touwen, B., 1976. *Neurological development in infancy*. London: Heinemann Spastics International Medical Publications.
- Villar, J., Smeriglio, V., Martorell, R., Brown, C.H. and Klein, R.E., 1984. Heterogeneous growth and mental development of intrauterine growth-retarded infants during the first 3 years of life. *Pediatrics*. **74** (5), pp. 783 - 791.
- Wadsworth, M.E.J., Mann, S.L., Rodgers, B., Kuh, D.J.L., Hilder, W.S. and Yusuf, E.J., 1992. Loss and representativeness in a 43 year follow up of a national birth cohort. *Journal of Epidemiology and Community Health*. **46**, pp. 300-304.