

## RINGKASAN

### APLIKASI CONFIRMATORY FACTOR ANALYSIS UNTUK MENETUKAN INDIKATOR DAN INDEKS KESEJAHTERAAN LANSIA DI KABUPATEN LAMONGAN

**Cucuk Rahmadi Purwanto**

Peningkatan derajat kesehatan penduduk di tanah air ditandai oleh menurunnya angka kematian dan kelahiran juga makin bertambahnya Umur Harapan Hidup. Pada tahun 1990, penduduk berusia 60 tahun ke atas berjumlah 11.3 juta atau 6,4% dari jumlah populasi Indonesia, sedangkan tahun 1968 umur harapan hidup sejak lahir adalah 45,7 tahun dan pada tahun 1992 telah meningkat menjadi 61,3 tahun. Antara tahun 2005 – 2010 jumlah lanjut usia diperkirakan akan sama dengan jumlah balita, yaitu 19 juta atau 8,5% dari seluruh jumlah penduduk, sehingga sesudah tahun 2010 diperkirakan jumlah lanjut usia akan lebih banyak dari jumlah balita.

Dengan peningkatan usia harapan hidup tersebut bagaimana Kesejahteraan Lansia terutama yang berada di Kabupaten Lamongan. Kesejahteraan lansia diukur melalui factor : Kesehatan Fisik, Keadaan Psikososial, Kebahagiaan Spiritual, Dukungan Finansial.

Untuk menganalisis faktor yang berkaitan dengan suatu fenomena, seringkali menggunakan suatu pendekatan dengan mengadopsi pendapat seorang pakar dalam bidang ilmu tertentu. Suatu teori yang ada dapat diuji kebenarannya dengan menggunakan pendekatan statistik yaitu dengan menggunakan analisis faktor. Untuk membuktikan faktor yang dihubungkan dengan suatu variabel di mana sudah ditemukan suatu teorinya dapat diuji dengan *Confirmatory Factor Analysis (CFA)*.

Dengan *CFA* ini dapat diestimasi dari model faktor yang telah dihipotesiskan dan menentukan model faktor yang paling cocok yang ditunjukkan dari sampel. Suatu variabel dikatakan valid bila skor *T value* pada loading factor lebih dari 1,96. Selanjutnya suatu variable dikatakan Reliabel bila skor *T value* pada error tidak lebih 1,96.

Setelah indikator dari masing-masing diketahui, maka perlu menentukan suatu bobot setiap variable yang menunjukkan kontribusi dari setiap variable yang diukur. Dengan *CFA* dapat dibuat suatu standar dengan melihat nilai *loading factor* pada *Standardize Solution*.

Penelitian ini bertujuan mencari indikator dan menentukan indeks Kesejahteraan Lansia dengan menggunakan (*CFA*) yang merupakan bagian dari analisis multivariate sekaligus merupakan pengembangan dari *Factor Analysis*.

Analisis Faktor Konfirmatori merupakan salah satu tehnik analisis statistik Multivariate, dengan titik berat yang diminati adalah hubungan secara bersama semua variabel tanpa membedakan variabel tergantung dan variabel bebas atau disebut sebagai metoda antar ketergantungan (*Interdependence Methode*). Adapun tujuannya adalah : Untuk mengestimasi parameter dari model faktor yang dihipotesiskan jika diberikan matrik kovarian dari sample, Menentukan model faktor yang paling cocok dengan mengestimasi yang paling dekat dari matrik kovarian ke matrik kovarian sampel,

Verifikasi secara empiris atau konfirmasi struktur faktor dari suatu teori. Parameter yang dianalisis yaitu *loading factor* ( $\lambda$ ), *error* ( $1-\delta$ ) dari matrik kovarian

Hasil Penelitian menunjukkan didapatkan variabel yang merupakan indikator dari Faktor Kemampuan Fisik, Dukungan Sosial, Dukungan Finansial dan Kebahagiaan Religius. Beberapa variabel dinyatakan tidak valid, dimana skor *T value* kurang dari 1,96 atau mempunyai nilai negatif, tidak reliabel dimana skor *T value* kurang dari 1,96 atau mempunyai negatif. Selain itu didapatkan Model yang tidak *convergen*, dimana matrik tidak merespon model yang dianalisis, sehingga hasil estimasi parameter masih merupakan *intermediate solution*. Hal ini dapat disebabkan karena besar sampel yang lebih kecil dibandingkan dengan jumlah parameter yang harus dianalisis akan menghasilkan model yang tidak *convergen*.

Kesimpulan dalam penelitian ini adalah bahwa Variabel yang merupakan indikator faktor Kemampuan fisik ada 8, yaitu : Frekuensi Mencuci Rambut, Frekuensi Olah Raga, Penggunaan Alat Bantu, Bantuan dalam aktivitas, Kemampuan Mobilitas, Kemampuan Berjalan, Kemampuan Naik Tangga, Kemampuan BAB. Variabel yang merupakan indikator faktor Dukungan Sosial ada 6, yaitu : Pendidikan, Keluarga yang tinggal serumah, Memberikan nasehat, Koping bila menghadapi masalah, Moral, Nilai APGAR. Variabel yang merupakan indikator faktor Dukungan Finansial ada 3, yaitu : Riwayat Pekerjaan, Pekerjaan, Pengeluaran. Variabel yang merupakan indikator faktor Kebahagiaan religius ada 2, yaitu : Keaktifan dalam kegiatan agama, Peranan agama dalam kehidupan sekarang. Variabel yang merupakan indikator faktor umum dari kesejahteraan lanjut usia ada 2, yaitu : Kemampuan fisik dan Kebahagiaan Religius. Model yang terbentuk dari Kesejahteraan lansia, yaitu Indeks Kesejahteraan Lansia =  $0,43$  Kemampuan fisik +  $0,41$  Kebahagiaan Religius.

Dari perhitungan skor komposit Faktor Kemampuan fisik dan Kebahagiaan Religius yang dimiliki oleh responden, maka terdapat 72 % lansia yang termasuk kategori sejahtera dan yang kurang sejahtera sebanyak 28 %.

Saran, model ini perlu didiskusikan dengan pakar dan diuji dengan menggunakan sampel yang lebih besar.

## SUMMARY

### THE APPLICATION OF CONFIRMATORY FACTOR ANALYSIS TO DETERMINE THE INDICATOR AND ELDERLY WELFARE INDEKS IN LAMONGAN REGENCY

**Cucuk Rahmadi Purwanto**

The Increased of degree of people health in fatherland shown by decrease mortality and natal rate as well as by the increase Expectation Age of Life. In 1990, the number of people of 60 years old or more is 11.3 million or 6,4% of total Indonesian population, while in 1968 expectation age of life is 45.7 years old and increasing in 1992 to 61.3 years old. In the years of 2005 - 2010 the number of elderly is estimated the same of those of preschool age i.e. 19 million or 8.5 % of total Indonesian population, so the it is estimate that after 2010, number of elderly people is more then those of preschool age.

With the increase of expectation age of life, how Elderly Welfare will be measured in Lamongan Regency. Elderly Welfare measured through the factors of : Physical Ability Factors, Social support, Religious Satisfaction, Financial Support.

To analyzed factors related with some phenomena, oftenly used approach by adopting Scientist literature. A theory is tested by using statistical approach i.e. by using factor analysis. To prove the factor correlated with some variables found can be tested with Confirmatory Factor Analysis (CFA).

With the CFA factor model with the previous hypothesis can be estimated and determine the nearest factor model shown from sample. A variable will be valid if the score of T value on loading factor more than 1.96. Next a variable told Reliable if score of T value of error more than 1.96.

After each indicator is known, it is important to determine to score of each variable that influence each measured variable. CFA will be made to determine a standard by viewing score of loading factor of Standardize Solution.

The Objectives of this research was to seek the indicator and determine the elderly Welfare index by means of Confirmatory Factor Analysis (CFA) as a part of Multivariate Analysis and along with development of Factor Analysis

Confirmatory Factor Analysis is one of multivariate statistical technique analysis, stressing in simultaneous relations among variable without differentiating dependent variable and independent variable (Interdependence Methods). The objective are to estimate parameters from factor model with the previous hypothesis if matrix covariance from sampling given, to determining factor model fit to matrix covariance to matrix covariance sample, To Verify empirically or to confirmation of factor structure of the theory. Parameter to analysis are loading factor ( $\lambda$ ), error ( $1-\delta$ ).

The findings showed variables as indicators of physical Ability Factor, Social Support, Financial Support and Religious satisfaction. Several variables were stated as unacceptable since the T value score was less than 1.96 or negative value. Furthermore, the study also obtained models that were not convergent; since the model did not respond to the analyzed matrix, accordingly, the result of the parameter estimation remained as intermediate solution. It was probable since the numbers of samples were

smaller than the numbers of parameters analyzed and consequently the models were not convergent.

The conclusions of the research were; there were eight variables as indicating factors of Physical Ability, that is Hair Care Frequency, Physical Exercise Frequency, Helping Aid Usage, Activity Facilities, Mobility Ability, Walking Ability, Climbing The Stair Ability, Secretions of Feces Ability. There were six variables as indicating factors of Social Support, that is, Education, People living in the same house, Advice Giving, Problem Coping, Moral and APGAR (Adaptation, Partnership, Growth, Affection, Resolve) Values. There were three variables as indicating factors of Financial Support, that is, Data of Work Experience, Occupation, Expenses. There were two variables as indicating factor of Religious satisfaction, that is, Religious Activities and The Role of Religion of one's current life. There were two variables as general indicating factors of the Elderly Welfare, that is, Physical Ability and Religious Satisfaction. Models obtained from Elderly Welfare were Elderly welfare = 0.43 Physical ability + 0.41 Religious Satisfaction. The Number of Elderly with Good Index is 72 % and Lower Index is 28 %.

Suggestion, need discussions with the scientist and the large sample to test the models.

## ABSTRACT

### **THE APPLICATION OF CONFIRMATORY FACTOR ANALYSIS TO DETERMINE THE INDICATOR AND ELDERLY WELFARE INDEKS IN LAMONGAN REGENCY**

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The Objectives of this research was to seek the indicator and determine the elderly Welfare index by means of Confirmatory Factor Analysis (CFA) as a part of Multivariate Analysis and along with development of Factor Analysis.

This research included the operations research to a applying analyzed the confirmatory factor analysis in order to testing validity and reliability of research instrument. Number of sample is 100 elderly in Lamongan and variable is 44.

The findings showed variables as indicators of physical Ability Factor, Social Support, Financial Support and Religious satisfaction. Several variables were stated as unacceptable since the T value score was less than 1.96 or negative value. Furthermore, the study also obtained models that were not convergent; since the model did not respond to the analyzed matrix, accordingly, the result of the parameter estimation remained as intermediate solution. It was probable since the numbers of samples were smaller than the numbers of parameters analyzed and consequently the models were not convergent.

The conclusions of the research were; there were eight variables as indicating factors of physical ability, that is Hair Care Frequency, Physical Exercise Frequency, Helping Aid Usage, Activity Facilities, Mobility Ability, Walking Ability, Climbing The Stair Ability, Secretions of Feces Ability. There were six variables as indicating factors of Social Support, that is, Education, People living in the same house, Advice Giving, Problem Coping, Moral and APGAR (Adaptation, Partnership, Growth, Affection, Resolve) Values. There were three variables as indicating factors of Financial Support, that is, Data of Work Experience, Occupation, Expenses. There were two variables as indicating factor of Religious satisfaction, that is, Religious Activities and The Role of Religion of one's current life. There were three variables as general indicating factors of the Elderly Welfare, that is, Financial Support, Social Support and Physical Ability, Models obtained from Elderly Welfare were Elderly welfare = 0.43 Physical ability + 0.41 Religious Satisfaction. The Number of Elderly with Good Index is 72 % and Lower Index is 28 %.

**Keywords :** *Confirmatory Factor Analysis, Elderly, Welfare.*