

RINGKASAN

Uji Validitas dan Reliabilitas Instrumen Menggunakan *Second Order Confirmatory Factor Analysis* pada Penelitian Kesehatan Gigi dan Mulut

Salah satu masalah utama penelitian adalah memperoleh data akurat dan obyektif. Kriteria alat ukur yang baik minimal harus memenuhi syarat validitas dan reliabilitas sehingga dapat mengukur dengan tepat dan konsisten. Suatu instrumen ukur yang tidak reliabel dan tidak *valid* akan memberikan informasi yang tidak akurat mengenai keadaan subyek yang dikenai tes. Di sinilah pentingnya masalah validitas dan reliabilitas pengukuran.

Di bidang kesehatan gigi, banyak permasalahan yang berkaitan dengan aspek sosial, perilaku, sikap dan motivasi. Terdapat dua masalah mendasar dan penting yang harus diperhatikan pada penelitian sosial dan perilaku. Masalah pertama berhubungan dengan masalah pengukuran yaitu validitas dan reliabilitas instrumen pengukuran. Masalah kedua berhubungan dengan hubungan antara variabel-variabel. Untuk menjawab dua masalah tersebut maka model pengukuran (*measurement model*) diuji.. Indikator yang digunakan untuk merefleksikan suatu variabel juga mengandung *error*, sehingga juga harus dipertimbangkan dalam analisis statistik.

Seringkali terdapat penelitian dengan variabel laten yang memiliki beberapa indikator, namun indikator tersebut tidak dapat diukur secara langsung dan memerlukan indikator lain, maka penggunaan *second-order confirmatory factor analysis* adalah pilihan yang tepat.

Second-order confirmatory factor analysis memberikan banyak manfaat khusus, namun hanya sedikit yang memahami dan jarang diaplikasikan oleh peneliti. Oleh karena itu, peneliti merumuskan masalah yaitu “bagaimana penerapan metode *second-order confirmatory factor analysis* pada penelitian kesehatan gigi dan mulut. Tujuan penelitian ini adalah untuk mempelajari penerapan uji validitas dan reliabilitas instrumen penelitian kesehatan gigi dan mulut menggunakan metode *second-order confirmatory factor analysis*.

Jenis penelitian ini adalah penelitian terapan, yang bertujuan untuk menerapkan metode *second-order confirmatory factor analysis* dalam mengukur konstruk sikap ibu rumah tangga terhadap pemeliharaan kesehatan gigi dan mulut keluarga atau disebut variabel PELIHARA. Variabel PELIHARA diukur oleh variabel laten lain yang *unobserved*, yaitu variabel BERSIH, GIZI dan PLYN. Variabel BERSIH adalah mengukur sikap ibu rumah tangga terhadap kebiasaan membersihkan gigi dan mulut keluarga, variabel GIZI adalah mengukur sikap ibu rumah tangga terhadap pentingnya kecukupan gizi keluarga, dan variabel PLYN adalah variabel yang mengukur sikap ibu rumah tangga terhadap pemeriksaan dan pelayanan kesehatan gigi. Variabel BERSIH diukur oleh 6 *item* pertanyaan yang diukur dengan skala *Likert*, variable GIZI disusun oleh 4 *item* pertanyaan yang diukur dengan skala *Likert*, dan variable PLYN disusun oleh 5 *item* pertanyaan yang juga diukur dengan skala *Likert*.

Analisa dilakukan menggunakan program LISREL, hasilnya adalah 2 *item* pertanyaan yang menyusun variabel GIZI yaitu B3 dan B4 tidak *reliable*, sedang B1 tidak *valid*. Pada analisis selanjutnya ketiga *item* tersebut dikeluarkan dari model. Namun dalam prakteknya, *item* yang tidak *valid* dan tidak *reliable* tidak harus dibuang, melainkan dapat diperbaiki redaksionalnya untuk diuji kembali.

Konsistensi internal pada tiap variabel laten endogen dan konstrak secara keseluruhan baik. Besar sampel sesuai ketentuan *confirmatory factor analysis* sebanyak 200 responden, namun pada prakteknya uji validitas dan reliabilitas cukup menggunakan 30-50 responden. Sebaiknya setiap variabel disusun oleh tidak kurang dari 5 item pertanyaan untuk menghindari kemungkinan *unidentified*.

Di samping itu, ada beberapa ketentuan yang harus diperhatikan dalam penyusunan kuisisioner antara lain bukan pertanyaan yang sudah diketahui secara umum sehingga jawabannya bisa diperkirakan, satu *item* kuisisioner hanya mengandung satu ide, menuliskan *item* yang spesifik, tidak menulis *item* yang mengandung kata 'tidak', sebab responden sering terlewat jika membaca secara cepat, tidak membuat *item* yang ambigu

Pada akhir analisis didapatkan bahwa secara komposit indikator yang terdapat pada model pengukuran memiliki konsistensi internal yang memadai dalam mengukur konstrak sikap ibu terhadap pemeliharaan kesehatan gigi dan mulut keluarga.

Kesimpulannya adalah metode ini dapat digunakan pada penelitian kesehatan gigi dan mulut yang variabelnya tidak dapat langsung diukur dan masih membutuhkan variabel lain yang juga tidak bisa diamati secara langsung.

Disarankan untuk mensosialisasikan dan mengembangkan metode ini dalam rangka peningkatan kualitas penelitian di bidang kesehatan gigi dan mulut.



SUMMARY

Validity and Reliability instrument Test by Implementing Second-Order Confirmatory Factor Analysis in Dental and Oral Health Research

One of the main research problems is getting the accurate and objective data. The criteria for good instrument are at least fulfilling requirement for validity and reliability so that the instrument can be measured accurately and consistently. The unreliable and invalid instrument will provide inaccuracy information about a tested-subject condition. Hence, the validity and reliability of measurement are important.

In the oral health, many problems are related with social, behavior, attitude and motivation. There are two principle and vital problems that must be paid attention in social and behavior research. The first, it related on measurement problems such as validity and reliability for measured instruments. The second, it connected on variables relations. The measurement model will be tested for answering those problems. The indicators reflect variable and error and also considerable in statistic analysis.

At the same case, there are latent variables which have many indicators. However, if the indicators can't be measured directly and must need the other indicators, the application for second-order confirmatory factor analysis is suitable for this case.

Second-order confirmatory factor analysis provides specific benefits for a number of problems, However, a few of person understood of this and unfortunately the researchers seldom applied in some researches. Hence, the researcher determines research problem about how to apply second-order confirmatory factor analysis method for oral and dental public health. The purpose of this research is to study validity and reliability test for oral and dental health research instrument by implementing second-order confirmatory factor analysis method.

Type of research is an applied research that aimed to implement second-order confirmatory analysis method. The method is to measure a construct of housewife attitudes in oral and dental health care called by PELIHARA factor. PELIHARA included some unobserved-latent variables consisting of BERSIH, GIZI, and PLYN. BERSIH is a housewife attitude variable for measuring habits of family oral and dental clean. GIZI is a housewife attitude variable for measuring urgently fulfillment of family nutrition. PLYN is a housewife attitude variable for measuring oral health service and check-up.

Research instrument used questionnaire with Likert scale for indicating each of variables. There are six items for BERSIH variable, and four items for GIZI and also five items for PLYN After that, the questionnaires are tabulated and processed in LISREL program. The findings are unreliable two items of Gizi variable for B3 and B4, and also invalid one item for B1. The next step is turning out of those items from model. In the fact, the bad items must be revised for the editorial and then will be retested.

For internal consistency, each of latent variables and construct is comprehensively good. According to requirement of confirmatory factor analysis, the number of samples are 200 respondents. In this case, the researcher sufficiently took 50 samples. Each of variables should structured less than 5 question items to avoid

unidentified possibility. In this case, the researcher sufficiently took 50 samples. Meanwhile, there are some requirements to compose questionnaires consisting of :

1. an item for an idea
2. making a specific item
3. never making an ambigue item
4. not including a negative item to anticipate quick reading

Finally, the analysis obtained some fundings that indicator composites attached on measurement model possesses internal consistency. It is suitable for measuring the housewife attitudes construct on family dental and oral health. It concludes that second-order confirmatory analysis could be applied in oral and dental health research. It concludes that second-order confirmatory analysis could be applied in oral and dental health research. The variables of research might not be measured directly and still need the other unobserved-variables. It implied that this method need to be developed in order to enhance research quality in the field of oral and dental health.



ABSTRACT

Validity and Reliability Instrument Test by Implementing Second Order Confirmatory Factor Analysis for Dental and Oral Health Research

The purpose of this research is to study validity and reliability test for oral and dental health research instrument by implementing second-order confirmatory factor analysis method.

Type of research is an applied research that aimed to implement second-order confirmatory analysis method. The method is to measure a construct of housewife attitudes in oral and dental health care called by PELIHARA factor. PELIHARA included some unobserved-latent variables consisting of BERSIH, GIZI, and PLYN. BERSIH is a housewife attitude variable for measuring habits of family oral and dental clean. GIZI is a housewife attitude variable for measuring urgently fulfillment of family nutrition. PLYN is a housewife attitude variable for measuring oral health service and check-up.

Each of variables should structured less than 5 question items to avoid unidentified possibility. In this case, the researcher sufficiently took 50 samples. Meanwhile, there are some requirements to compose questionnaires consisting of : (a) an item for an idea (b) making a specific item (c) never making an ambigue item (d) not including a negative item to anticipate quick reading

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Keywords: Validity and Reliability. Second Order Confirmatory Factor Analysis, Dental and Oral Health Research