

LAMPIRAN 1.1  
INSTRUMEN RISET PENDAHULUAN



**LEMBAGA PENELITIAN  
DAN PENGABDIAN PADA MASYARAKAT**  
**Gedung GAP Lt. 3**  
**Universitas Kristen Maranatha**  
**Jl. Prof. Drg. Surya Sumantri MPH No. 65**  
**Bandung 40164**

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### **KUESIONER PENELITIAN**

Yth. Sdr./I Mahasiswa Pengguna CDMA

Kami, peneliti dari Lembaga Penelitian dan Pengabdian pada Masyarakat Universitas Kristen Maranatha, pada saat ini tengah melakukan riset yang berjudul "Pengaruh Persepsi Kualitas terhadap Biaya Perpindahan Merek Operator Seluler CDMA (Studi Kasus Peralihan Segmen Pasar Mahasiswa di Kota Bandung untuk Menggunakan Telkom Flexi)".

Kami sangat mengharapkan kesediaan anda untuk mengisi kuesioner ini di tengah kesibukan belajar anda. Atas kesediaan anda, kami ucapkan terima kasih.

Hormat,  
Hendra Kusuma, Ir., MT.,  
Shendy Sumarli

### **PETUNJUK PENGISIAN**

1. Kuesioner ini terdiri dari 11 pertanyaan , mohon masing-masing pertanyaan dibaca dengan seksama sebelum dijawab.
  2. Mohon tuliskan jawaban anda pada titik-titik yang tersedia pada setiap pertanyaan yang berbentuk isian.
  3. Mohon menjawab kuesioner ini dengan memberikan tanda lingkaran (O) pada jawaban yang dirasa sesuai dengan kondisi anda pada bagian dimana anda harus memilih satu dari beberapa jawaban yang tersedia
-

1. Berapa lama Anda telah menggunakan layanan *simcard* jaringan Esia yang saat ini anda gunakan:

**Sejak bulan ..... tahun ..... (Boleh diperkirakan jika tidak ingat)**

2. *Simcard* jaringan CDMA lain yang Anda gunakan saat ini:

(Jika jawaban lebih dari 1, pilihlah *simcard* yang lebih sering anda gunakan)

- ☐ Flexi                      ☐ Fren                      ☐ Smart  
☐ Hepi                      ☐ Ceria                      ☐ StarOne

3. Berapa rata-rata uang saku Anda per bulan? **Rp ..... per bln.**

4. Berapa rata – rata pengeluaran Anda per bulan untuk penggunaan pulsa *simcard* Jaringan CDMA yang saat ini anda gunakan? **Rp ..... per bln.**

5. Apakah saat ini Anda juga menggunakan *Simcard* yang menggunakan jaringan GSM:

- ☐ Ya   ☐ Tidak

**\*Jika jawaban “YA”, pertanyaan dilanjutkan ke no. 6**

**\*Jika jawaban “TIDAK”, pertanyaan dilanjutkan ke no. 7**

6. Berapa rata – rata pengeluaran Anda per bulan untuk penggunaan pulsa *simcard* GSM yang saat ini digunakan? **Rp ..... per bln.**

7. Apakah anda pernah menggunakan *simcard* Flexi?

- ☐ Ya                      ☐ Tidak

**\*Jika jawaban “YA”, pertanyaan dilanjutkan ke no. 8**

**\*Jika jawaban “TIDAK”, pertanyaan dilanjutkan ke no. 9**

8. Komentar anda mengenai jaringan Flexi:

.....  
.....  
.....

9. Alasan anda tidak menggunakan simcard Flexi saat ini:

.....  
.....  
.....

10. Seberapa besar keinginan Anda untuk melakukan perpindahan ke operator seluler Flexi dalam waktu 3 bulan ke depan?

- |                                             |                                              |
|---------------------------------------------|----------------------------------------------|
| <input type="checkbox"/> Sangat Tidak Ingin | <input type="checkbox"/> Ingin               |
| <input type="checkbox"/> Tidak Ingin        | <input type="checkbox"/> Sangat Menginginkan |

11. Khusus untuk Bapak/Ibu/Sdr/i yang menggunakan CDMA dan GSM dengan biaya pengisian pulsa untuk GSM **LEBIH TINGGI** daripada CDMA, mohon jelaskan alasan anda mengapa porsi pengisian pulsa anda untuk GSM lebih tinggi dibandingkan dengan CDMA?

.....  
.....  
.....  
.....

~ Terima Kasih atas Kesediaan Anda Mengisi Kuesioner ini ~

LAMPIRAN 1.2  
INSTRUMEN PENELITIAN AWAL

## KUESIONER PENELITIAN TUGAS AKHIR

Kepada Yth.

Bapak/Ibu/Saudara/i Pengguna CDMA non Flexi

Dengan Hormat,

Saya mahasiswa Universitas Kristen Maranatha Bandung jurusan Teknik Industri sedang melaksanakan penelitian Tugas Akhir dengan judul “**Pengaruh Persepsi Kualitas Terhadap Minat untuk Berpindah Merek (Studi Kasus Flexi, PT Telkom Kantor Daerah Telekomunikasi Bandung)**”. Saya sangat mengharapkan kesediaan Bapak/Ibu/Saudara/i untuk mengisi kuesioner ini. Saya juga menyadari bahwa waktu Bapak/Ibu/Saudara/i terbatas dan berharga. Untuk itu saya sangat berterima kasih atas kesediaan dan perhatian Bapak/Ibu/Saudara/i dalam meluangkan waktu untuk mengisi kuesioner ini.

Hormat,

Shendy Sumarli

**Petunjuk Pengisian**

1. Mohon bacalah dengan seksama setiap pertanyaan sebelum menjawab
2. Mohon untuk mengisi pertanyaan dengan kondisi sebenarnya
3. Mohon menjawab kuesioner ini dengan memberikan tanda lingkaran (O) pada jawaban sesuai PERSEPSI pribadi ANDA saat menggunakan Operator CDMA saat ini dan PERSEPSI anda terhadap Flexi

**BAGIAN I: PERSEPSI KUALITAS FLEXI**

| No | Pernyataan                                         | Operator Seluler Saya Saat Ini Mutlak Lebih Baik | Operator Seluler Saya Saat Ini Sedikit Lebih Baik | Operator Seluler Saya Saat Ini Sama Baiknya dengan Flexi | Flexi Sedikit Lebih Baik | Flexi Mutlak Lebih Baik |
|----|----------------------------------------------------|--------------------------------------------------|---------------------------------------------------|----------------------------------------------------------|--------------------------|-------------------------|
| 1  | Tindak lanjut terhadap saran dan keluhan           | 5                                                | 4                                                 | 3                                                        | 2                        | 1                       |
| 2  | Kejernihan suara panggilan                         | 5                                                | 4                                                 | 3                                                        | 2                        | 1                       |
| 3  | Konsistensi kekuatan sinyal                        | 5                                                | 4                                                 | 3                                                        | 2                        | 1                       |
| 4  | Minimasi gangguan sinyal                           | 5                                                | 4                                                 | 3                                                        | 2                        | 1                       |
| 5  | Kecepatan panggilan                                | 5                                                | 4                                                 | 3                                                        | 2                        | 1                       |
| 6  | Masa tenggang isi ulang                            | 5                                                | 4                                                 | 3                                                        | 2                        | 1                       |
| 7  | Efektivitas koneksi internet.                      | 5                                                | 4                                                 | 3                                                        | 2                        | 1                       |
| 8  | Kecepatan pengiriman sms                           | 5                                                | 4                                                 | 3                                                        | 2                        | 1                       |
| 9  | Kecepatan akses internet.                          | 5                                                | 4                                                 | 3                                                        | 2                        | 1                       |
| 10 | Kemampuan <i>upload</i> dan <i>download</i> .      | 5                                                | 4                                                 | 3                                                        | 2                        | 1                       |
| 11 | Daya tahan kartu saat mengganti <i>handset</i>     | 5                                                | 4                                                 | 3                                                        | 2                        | 1                       |
| 12 | kemudahan aktivasi kartu baru.                     | 5                                                | 4                                                 | 3                                                        | 2                        | 1                       |
| 13 | Batas pemakaian pulsa                              | 5                                                | 4                                                 | 3                                                        | 2                        | 1                       |
| 14 | Kualitas E-mail                                    | 5                                                | 4                                                 | 3                                                        | 2                        | 1                       |
| 15 | Kualitas <i>Download Content</i> (Games, Aplikasi) | 5                                                | 4                                                 | 3                                                        | 2                        | 1                       |
| 16 | Tarif akses internet.                              | 5                                                | 4                                                 | 3                                                        | 2                        | 1                       |
| 17 | Kualitas mobile banking                            | 5                                                | 4                                                 | 3                                                        | 2                        | 1                       |
| 18 | Kualitas quiz                                      | 5                                                | 4                                                 | 3                                                        | 2                        | 1                       |
| 19 | Kualitas <i>Chatting</i>                           | 5                                                | 4                                                 | 3                                                        | 2                        | 1                       |
| 20 | Kualitas MMS                                       | 5                                                | 4                                                 | 3                                                        | 2                        | 1                       |

| No | Pernyataan                              | Operator<br>Seluler Saya<br>Saat Ini Mutlak<br>Lebih Baik | Operator<br>Seluler Saya<br>Saat Ini Sedikit<br>Lebih Baik | Operator<br>Seluler Saya<br>Saat Ini Sama<br>Baiknya dengan<br>Flexi | Flexi Sedikit<br>Lebih Baik | Flexi Mutlak<br>Lebih Baik |
|----|-----------------------------------------|-----------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------|-----------------------------|----------------------------|
| 21 | Kemudahan melakukan panggilan           | 5                                                         | 4                                                          | 3                                                                    | 2                           | 1                          |
| 22 | Pemenuhan janji saat promosi            | 5                                                         | 4                                                          | 3                                                                    | 2                           | 1                          |
| 23 | Kesesuaian bonus dengan penawaran.      | 5                                                         | 4                                                          | 3                                                                    | 2                           | 1                          |
| 24 | Keramahan petugas pusat pelayanan       | 5                                                         | 4                                                          | 3                                                                    | 2                           | 1                          |
| 25 | Bonus aktivasi.                         | 5                                                         | 4                                                          | 3                                                                    | 2                           | 1                          |
| 26 | Kualitas pelayanan RBT (Ring Back Tone) | 5                                                         | 4                                                          | 3                                                                    | 2                           | 1                          |
| 27 | Layanan transfer pulsa                  | 5                                                         | 4                                                          | 3                                                                    | 2                           | 1                          |
| 28 | Daya saing harga kartu perdana          | 5                                                         | 4                                                          | 3                                                                    | 2                           | 1                          |
| 29 | Biaya isi ulang pulsa                   | 5                                                         | 4                                                          | 3                                                                    | 2                           | 1                          |
| 30 | Variasi Nominal Pulsa                   | 5                                                         | 4                                                          | 3                                                                    | 2                           | 1                          |
| 31 | Daya tarik Iklan                        | 5                                                         | 4                                                          | 3                                                                    | 2                           | 1                          |
| 32 | Tarif telepon                           | 5                                                         | 4                                                          | 3                                                                    | 2                           | 1                          |
| 33 | Tarif sms                               | 5                                                         | 4                                                          | 3                                                                    | 2                           | 1                          |
| 34 | Bonus pemakaian (pulsa,sms,dsb)         | 5                                                         | 4                                                          | 3                                                                    | 2                           | 1                          |
| 35 | Kemudahan mencari kartu perdana         | 5                                                         | 4                                                          | 3                                                                    | 2                           | 1                          |

**BAGIAN II: SWITCHING COST**

| No | Pernyataan                                                                                                                              | Sangat Tidak Setuju | Tidak Setuju | Netral | Setuju | Sangat Setuju |
|----|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------|--------|--------|---------------|
| 1  | Saya akan mengeluarkan banyak waktu apabila berpindah ke Operator Flexi                                                                 | 1                   | 2            | 3      | 4      | 5             |
| 2  | Saya akan mengeluarkan banyak uang apabila berpindah ke Operator Flexi                                                                  | 1                   | 2            | 3      | 4      | 5             |
| 3  | Saya akan mengeluarkan usaha yang besar untuk menghubungi keluarga, teman, dan rekan kerja jika saya berpindah ke Operator Flexi        | 1                   | 2            | 3      | 4      | 5             |
| 4  | Saya akan kehilangan semua layanan istimewa yang pernah dirasakan sebelumnya apabila saya berpindah ke Operator Flexi                   | 1                   | 2            | 3      | 4      | 5             |
| 5  | Saya akan membutuhkan waktu untuk belajar menggunakan fitur yang ditawarkan oleh operator baru apabila saya berpindah ke Operator Flexi | 1                   | 2            | 3      | 4      | 5             |
| 6  | Saya akan membutuhkan usaha untuk beradaptasi dengan operator baru apabila saya berpindah ke Operator Flexi                             | 1                   | 2            | 3      | 4      | 5             |
| 7  | Merupakan ide baik apabila saya mengganti operator seluler menjadi Flexi                                                                | 1                   | 2            | 3      | 4      | 5             |
| 8  | Merupakan hal yang bermanfaat untuk dilakukan apabila saya mengganti operator seluler menjadi Flexi                                     | 1                   | 2            | 3      | 4      | 5             |
| 9  | Merupakan hal yang menguntungkan apabila saya mengganti operator seluler menjadi Flexi                                                  | 1                   | 2            | 3      | 4      | 5             |
| 10 | Merupakan hal yang menyenangkan apabila saya mengganti operator seluler menjadi Flexi                                                   | 1                   | 2            | 3      | 4      | 5             |
| 11 | Merupakan keputusan yang benar untuk dilakukan apabila saya mengganti operator seluler menjadi Flexi                                    | 1                   | 2            | 3      | 4      | 5             |
| 12 | Merupakan keputusan yang seharusnya dilakukan apabila saya mengganti operator seluler menjadi Flexi                                     | 1                   | 2            | 3      | 4      | 5             |
| 13 | Saya ingin melakukan perpindahan ke Operator Flexi dalam beberapa bulan ke depan                                                        | 1                   | 2            | 3      | 4      | 5             |
| 14 | Saya tidak sempat untuk melakukan perpindahan ke Operator Flexi dalam beberapa bulan ke depan                                           | 1                   | 2            | 3      | 4      | 5             |
| 15 | Situasi saat ini memungkinkan saya untuk melakukan perpindahan ke operator Flexi dalam beberapa bulan ke depan                          | 1                   | 2            | 3      | 4      | 5             |

~ Terima Kasih atas Kesediaan Anda Mengisi Kuesioner ini ~

LAMPIRAN 1.3  
KOMENTAR NARASUMBER VALIDASI KONSTRUK

## FORM VALIDASI KONSTRUK

Nama : Shendy Sumarli  
NRP : 0523023  
Judul Tugas Akhir : PENGARUH PERSEPSI KUALITAS  
TERHADAP MINAT UNTUK BERPINDAH  
MEREK  
Dosen Pembimbing : Ir. Hendra Kusuma MT.  
Komentar dan Saran :

- Lihat kembali lagi s/ fitur canggih bisa diada dgn peningkatan  
perlengkapan → beberapa yg pakai
- Pengetahuan cust. service?
- Adaptasi = belajar
- Pengetahuan tentang pemasaran?
- Bagaimana yg harus di lakukan?
- Bagaimana pemasaran di era digital ini?

## FORM VALIDASI KONSTRUK

Nama : Shendy Sumadi

NRP : 0523023

Judul Tugas Akhir : PENGARUH PERSEPSI KUALITAS  
TERHADAP MINAT UNTUK BERPENDAH  
MEREK

Dosen Pembimbing : Ir. Hendra Kusuma MT.

Komentar dan Saran :

1. Pertimbangan apakah bobot tingkat kepentingan diperlukan dalam kuasioter!

## FORM VALIDASI KONSTRUK

Nama : Shandy Susanti

NRP : 0523023

Judul Tugas Akhir : PENGARUH PERSEPSI KUALITAS  
TERHADAP MINAT UNTUK BERPINJAH  
MEREK

Dosen Pembimbing : Ir. Hendra Kusuma MT.

Komentar dan Saran :

1. Masih dgn responden yg dipilih, karena harus tahu siapa Flak juga!  
terutama no 1 & 22.

4. maksud minimal?

apakah krm berhubungan dgn jumlah voucher yang berlaku?

7. maksud efektifitas?

apakah krm maksud kualitas? atau krm maksud apa?

## FORM VALIDASI KONSTRUK

Nama : Shandy Sumarti  
NRP : 0523023  
Judul Tugas Akhir : PENGARUH PERSEPSI KUALITAS  
TERHADAP MINAT UNTUK BERPINDAH  
MEREK  
Dosen Pembimbing : Ir. Hendra Kusuma MT.  
Kotacatur dan Suran :

1. Pada justifikasi jelas kenapa harga operator GDM A yang diteliti.
2. Perceived quality / pengalasan ?
3. Apa apakah internet dapat digunakan sebagai variabel.
4. tambahkan variabel tentang SMS
5. Prelinger dan pesan bayar digabung?
6. Tarif selularnya digabung antara sesama operator dan dengan operator.
7. Tambahkan variabel about premium
8. Tambahkan pesan nomor kartu?
9. Apakah dalam variabel sudah ada variabel tentang roaming?
10. Boleh tambahkan switching cost karena biaya yang terlibat dalam

Tanda Tangan

## FORM VALIDASI KONSTRUK

Nama : Shandy Sumerti

NRP : 0323023

Judul Tugas Akhir : PENGARUH PERSEPSI KUALITAS  
TERHADAP MINAT UNTUK BERPINDAH  
MEREK

Dosen Pembimbing : Ir. Hendra Kusuma MT.

Komentar dan Saran :

1. Review judul TA, katanya negatif.
2. Posttest responden dibandingkan dgn CDMA.
3. Urutan diperbaiki!!! (kelompok)
4. Cek angka barling.
5. Paragraf banyak kecurangan.

LAMPIRAN 1.4  
INSTRUMEN PENELITIAN FINAL



**LEMBAGA PENELITIAN  
DAN PENGABDIAN PADA MASYARAKAT**  
**Gedung GAP Lt. 3**  
**Universitas Kristen Maranatha**  
**Jl. Prof. Drg. Surya Sumantri MPH No. 65 Bandung 40164**

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## **KUESIONER PENELITIAN**

Yth. Sdr./I Mahasiswa Pengguna CDMA

Kami, peneliti dari Lembaga Penelitian dan Pengabdian pada Masyarakat Universitas Kristen Maranatha, pada saat ini tengah melakukan riset yang berjudul "Pengaruh Persepsi Kualitas terhadap Biaya Perpindahan Merek Operator Seluler CDMA (Studi Kasus Peralihan Segmen Pasar Mahasiswa di Kota Bandung untuk Menggunakan Telkom Flexi)".

Kami sangat mengharapkan kesediaan anda untuk mengisi kuesioner ini di tengah kesibukan belajar anda. Atas kesediaan anda, kami ucapkan terima kasih.

Hormat,  
Hendra Kusuma, Ir., MT.,  
Shendy Sumarli

## **PETUNJUK PENGISIAN**

Kuesioner ini terdiri atas dua bagian, bagian pertama berjumlah 30 pernyataan, sementara bagian kedua berjumlah 12 pernyataan. Mohon LINGKARI angka yang paling mewakili perasaan anda atas pernyataan pada kuesioner:

- Pada bagian pertama:
  - Lingkari ANGKA 5 jika perasaan anda menyatakan bahwa kinerja operator CDMA yang sekarang anda gunakan MUTLAK LEBIH BAIK daripada Flexi di pernyataan yang bersesuaian berdasarkan pengalaman maupun persepsi anda atau orang-orang terdekat anda
  - Lingkari ANGKA 1 jika perasaan anda menyatakan bahwa kinerja operator CDMA yang sekarang anda gunakan MUTLAK LEBIH BURUK daripada Flexi di pernyataan yang bersesuaian berdasarkan pengalaman maupun persepsi anda atau orang-orang terdekat anda
  - Lingkari angka 4, 3, dan 2 jika perasaan anda atas kinerja operator CDMA terhadap Flexi kurang kuat di pernyataan yang bersesuaian berdasarkan pengalaman maupun persepsi anda atau orang-orang terdekat anda
  - Beri tanda silang (X) di kolom tidak tahu jika anda tidak tahu kinerja operator CDMA anda dan Flexi di pernyataan yang bersesuaian berdasarkan pengalaman maupun persepsi anda atau orang-orang terdekat anda
- Pada bagian kedua:
  - Lingkari ANGKA 5 jika perasaan anda menyatakan anda SANGAT SETUJU di pernyataan yang bersesuaian.
  - Lingkari ANGKA 1 jika perasaan anda menyatakan anda SANGAT TIDAK SETUJU di pernyataan yang bersesuaian.
  - Lingkari angka 4, 3, dan 2 jika perasaan anda atas kinerja operator CDMA terhadap Flexi kurang kuat.

| No | Pernyataan                                        | Operator CDMA<br>saya saat ini<br><b>MUTLAK<br/>LEBIH BAIK</b><br>dari Flexi | Operator CDMA<br>saya saat ini<br><b>SEDIKIT<br/>LEBIH BAIK</b><br>dari Flexi | Operator CDMA<br>saya saat ini<br><b>SAMA BAIK</b><br>dengan Flexi | Operator CDMA<br>saya saat ini<br><b>SEDIKIT<br/>LEBIH BURUK</b><br>dari Flexi | Operator CDMA<br>saya saat ini<br><b>MUTLAK<br/>LEBIH BURUK</b><br>dari Flexi | Tidak Tahu |
|----|---------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------|
| 1  | Penanganan saran dan keluhan                      | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 2  | Kejernihan suara panggilan                        | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 3  | Kestabilan sinyal di berbagai wilayah             | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 4  | Frekuensi gangguan sinyal                         | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 5  | Kecepatan panggilan ke berbagai operator          | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 6  | Masa aktif untuk nilai isi ulang yang setara      | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 7  | Stabilitas koneksi internet.                      | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 8  | Keberhasilan pengiriman sms ke berbagai operator  | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 9  | Kecepatan pengiriman sms ke berbagai operator     | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 10 | Daya tahan <i>simcard</i>                         | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 11 | Kecepatan <i>browsing</i> di internet             | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 12 | Variasi <i>Download Content</i> (Games, Aplikasi) | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 13 | Tarif akses internet                              | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 14 | Variasi quiz                                      | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 15 | Ketersediaan program chatting                     | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |

| No | Pernyataan                            | Operator CDMA<br>saya saat ini<br><b>MUTLAK<br/>LEBIH BAIK</b><br>dari Flexi | Operator CDMA<br>saya saat ini<br><b>SEDIKIT<br/>LEBIH BAIK</b><br>dari Flexi | Operator CDMA<br>saya saat ini<br><b>SAMA BAIK</b><br>dengan Flexi | Operator CDMA<br>saya saat ini<br><b>SEDIKIT<br/>LEBIH BURUK</b><br>dari Flexi | Operator CDMA<br>saya saat ini<br><b>MUTLAK<br/>LEBIH BURUK</b><br>dari Flexi | Tidak Tahu |
|----|---------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------|
| 16 | Keberhasilan pengiriman MMS           | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 17 | Ketepatan janji promosi               | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 18 | Bonus pemakaian (telepon, sms)        | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 19 | Bonus aktivasi.                       | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 20 | Layanan RBT ( <i>Ring Back Tone</i> ) | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 21 | Transfer pulsa                        | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 22 | Harga kartu perdana                   | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 23 | Harga voucher isi ulang               | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 24 | Variasi Nominal Pulsa                 | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 25 | Daya tarik Iklan                      | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 26 | Tarif telepon ke berbagai operator    | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 27 | Tarif sms ke berbagai operator        | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 28 | Bonus isi ulang                       | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 29 | Kemudahan mencari kartu perdana       | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |
| 30 | Kemudahan mendapat nomor cantik       | 5                                                                            | 4                                                                             | 3                                                                  | 2                                                                              | 1                                                                             | [ ]        |

| No | Pernyataan                                                                                                                       | Sangat Tidak Setuju | Tidak Setuju | Netral | Setuju | Sangat Setuju |
|----|----------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------|--------|--------|---------------|
| 1  | Saya akan mengeluarkan banyak waktu untuk berpindah ke Operator Flexi                                                            | 1                   | 2            | 3      | 4      | 5             |
| 2  | Saya akan mengeluarkan banyak uang apabila berpindah ke Operator Flexi                                                           | 1                   | 2            | 3      | 4      | 5             |
| 3  | Saya akan mengeluarkan usaha yang besar untuk menghubungi keluarga, teman, dan rekan kerja jika saya berpindah ke Operator Flexi | 1                   | 2            | 3      | 4      | 5             |
| 4  | Saya akan kehilangan semua layanan istimewa yang pernah dirasakan sebelumnya apabila saya berpindah ke Operator Flexi            | 1                   | 2            | 3      | 4      | 5             |
| 5  | Saya akan membutuhkan usaha untuk beradaptasi dengan operator Flexi apabila saya berpindah ke Operator Flexi                     | 1                   | 2            | 3      | 4      | 5             |
| 6  | Merupakan ide baik apabila saya mengganti operator seluler menjadi Flexi                                                         | 1                   | 2            | 3      | 4      | 5             |
| 7  | Merupakan hal yang menguntungkan apabila saya mengganti operator seluler menjadi Flexi                                           | 1                   | 2            | 3      | 4      | 5             |
| 8  | Merupakan hal yang menyenangkan apabila saya mengganti operator seluler menjadi Flexi                                            | 1                   | 2            | 3      | 4      | 5             |
| 9  | Merupakan keputusan yang seharusnya dilakukan apabila saya mengganti operator seluler menjadi Flexi                              | 1                   | 2            | 3      | 4      | 5             |
| 10 | Saya ingin melakukan perpindahan ke Operator Flexi dalam beberapa bulan ke depan                                                 | 1                   | 2            | 3      | 4      | 5             |
| 11 | Saya tidak sempat untuk melakukan perpindahan ke Operator Flexi dalam beberapa bulan ke depan                                    | 1                   | 2            | 3      | 4      | 5             |
| 12 | Situasi saat ini memungkinkan saya untuk melakukan perpindahan ke operator Flexi dalam beberapa bulan ke depan                   | 1                   | 2            | 3      | 4      | 5             |

LAMPIRAN 2.1  
DATA PENELITIAN PENDAHULUAN

| Resp | Q1    | Q2      | Q3     | Q4     | Q5    | Q6     | Q7    |
|------|-------|---------|--------|--------|-------|--------|-------|
| 1    | 2-01  |         | 500000 | 25000  | ya    | 25000  | tidak |
| 2    | 8-08  |         | 2E+06  | 50000  | ya    | 300000 | ya    |
| 3    | 5-04  | fren    | 2E+06  | 100000 | tidak |        | ya    |
| 4    | 7-06  |         | 600000 | 40000  | ya    | 5000   | tidak |
| 5    | 8-08  |         | 2E+06  | 50000  | ya    | 150000 | tidak |
| 6    | 1-03  | flexi   | 750000 | 150000 | ya    | 500000 | ya    |
| 7    | 2006  |         | 500000 | 50000  | ya    | 100000 | tidak |
| 8    | 7-07  |         | 300000 | 50000  | ya    | 75000  | tidak |
| 9    | 9-08  |         | 1E+06  | 25000  | ya    | 100000 | tidak |
| 10   | 6-06  | flexi   | 1E+06  | 50000  | ya    | 100000 | ya    |
| 11   | 3-05  | flexi   | 2E+06  | 50000  | ya    | 50000  | ya    |
| 12   | 8-07  |         | 200000 | 10000  | ya    | 20000  | tidak |
| 13   | 11-08 |         | 250000 | 40000  | ya    | 30000  | tidak |
| 14   | 7-07  |         | 2E+06  | 25000  | ya    | 200000 | tidak |
| 15   | 1-04  |         | 750000 | 100000 | ya    | 100000 | ya    |
| 16   | 1-08  |         | 100000 | 50000  | tidak |        | tidak |
| 17   | 8-06  | flexi   |        | 100000 | ya    | 50000  | tidak |
| 18   | 11-08 | flexi   |        | 300000 | ya    | 300000 | ya    |
| 19   | 9-05  | flexi   | 1E+06  | 200000 | ya    | 50000  | ya    |
| 20   | 10-08 | flexi   | 700000 | 100000 | ya    | 150000 | ya    |
| 21   | 1-07  |         | 100000 | 5000   | ya    | 30000  | tidak |
| 22   | 6-06  | flexi   | 250000 | 100000 | ya    | 50000  | ya    |
| 23   | 10    |         | 3E+06  | 50000  | ya    | 100000 | tidak |
| 24   | 7-07  |         | 1E+06  | 50000  | ya    | 100000 | tidak |
| 25   | 1-07  |         | 300000 | 25000  | ya    | 25000  | tidak |
| 26   | 10-08 | starone | 500000 | 25000  | ya    | 100000 | tidak |
| 27   | 10-07 | ceria   | 100000 | 10000  | ya    | 25000  | tidak |
| 28   | 11-08 | fren    | 3E+06  | 1E+06  | ya    | 50000  | tidak |
| 29   | 1-08  | starone | 500000 | 50000  | ya    | 10000  | ya    |
| 30   | 2-08  |         | 500000 | 25000  | ya    | 100000 | ya    |

| Q8                                              |        |                |
|-------------------------------------------------|--------|----------------|
| Jawaban Responden                               | Jumlah | Persentase (%) |
| Kualitas keseluruhan cukup baik                 | 5      | 16.666667      |
| Tarif relatif lebih mahal                       | 1      | 3.3333333      |
| Kualitas turun setelah program gratis telepon   | 1      | 3.3333333      |
| Sinyal kurang bagus                             | 4      | 13.333333      |
| Tidak menjawab                                  | 19     | 63.333333      |
|                                                 | 30     | 100            |
| Q9                                              |        |                |
| Jawaban Responden                               | Jumlah | Persentase (%) |
| Komunitas Esia lebih besar                      | 11     | 36.67          |
| Esia memiliki kualitas jaringan yang lebih baik | 8      | 26.67          |
| Nomor Esia sudah terlanjur dikenal orang        | 7      | 23.33          |
| Tarif menelepon Flexi lebih mahal               | 4      | 13.33          |
| Tidak menjawab                                  | 0      | 0              |
|                                                 | 30     | 100            |
| Q10                                             |        |                |
| Jawaban Responden                               | Jumlah | Persentase (%) |
| Sangat ingin                                    | 0      | 0              |
| Ingin                                           | 6      | 20             |
| Tidak Ingin                                     | 18     | 60             |
| Sangat tidak ingin                              | 4      | 13.333333      |
| Tidak Menjawab                                  | 2      | 6.666667       |
|                                                 | 30     | 100            |
| Q11                                             |        |                |
| Jawaban Responden                               | Jumlah | Persentase (%) |
| Lebih sering menggunakan GSM                    | 8      | 26.666667      |
| Jangkauan GSM lebih besar                       | 3      | 10             |
| Biaya GSM lebih besar                           | 8      | 26.666667      |
| Sinyal GSM lebih bagus                          | 3      | 10             |
| Tidak Menjawab                                  | 8      | 26.666667      |
|                                                 | 30     | 100            |

## LAMPIRAN 2.2

### DATA PENELITIAN

| Resp | PQ1 | PQ2 | PQ3 | PQ4 | PQ5 | PQ6 | PQ7 | PQ8 | PQ9 | PQ10 | PQ11 | PQ12 | PQ13 | PQ14 | PQ15 | PQ16 | PQ17 | PQ18 | PQ19 | PQ20 | PQ21 | PQ22 | PQ23 | PQ24 | PQ25 | PQ26 | PQ27 | PQ28 | PQ29 | PQ30 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1    | 3   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 2   | 3    | 3    | 3    | 2    | 3    | 3    | 3    | 3    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    |
| 2    | 3   | 3   | 5   | 3   | 3   | 5   | 3   | 3   | 5   | 5    | 3    | 3    | 2    | 2    | 2    | 2    | 2    | 4    | 4    | 4    | 5    | 3    | 5    | 5    | 5    | 5    | 5    | 5    | 5    | 4    |
| 3    | 3   | 2   | 2   | 2   | 3   | 3   | 3   | 4   | 4   | 5    | 3    | 3    | 2    | 4    | 3    | 3    | 3    | 5    | 5    | 5    | 4    | 4    | 3    | 2    | 3    | 4    | 4    | 5    | 3    | 4    |
| 4    | 4   | 3   | 3   | 3   | 4   | 4   | 3   | 4   | 2   | 2    | 3    | 4    | 3    | 4    | 3    | 4    | 3    | 4    | 4    | 4    | 4    | 4    | 3    | 3    | 3    | 3    | 4    | 4    | 2    | 3    |
| 5    | 2   | 4   | 1   | 2   | 3   | 4   | 3   | 2   | 4   | 4    | 3    | 4    | 2    | 3    | 4    | 4    | 4    | 3    | 2    | 5    | 4    | 4    | 5    | 4    | 5    | 1    | 5    | 3    | 5    | 3    |
| 6    | 4   | 5   | 5   | 5   | 3   | 3   | 2   | 5   | 4   | 3    | 1    | 2    | 2    | 3    | 2    | 5    | 2    | 5    | 4    | 3    | 3    | 3    | 3    | 3    | 4    | 1    | 2    | 3    | 5    | 3    |
| 7    | 2   | 1   | 2   | 2   | 2   | 1   | 5   | 5   | 4   | 5    | 4    | 2    | 4    | 3    | 5    | 4    | 2    | 1    | 1    | 2    | 4    | 5    | 5    | 2    | 4    | 5    | 1    | 2    | 1    | 4    |
| 8    | 2   | 3   | 4   | 3   | 2   | 3   | 4   | 4   | 4   | 3    | 4    | 4    | 4    | 4    | 4    | 3    | 3    | 2    | 2    | 3    | 3    | 3    | 3    | 4    | 4    | 3    | 4    | 4    | 4    | 3    |
| 9    | 2   | 4   | 4   | 2   | 3   | 3   | 2   | 3   | 2   | 3    | 2    | 2    | 3    | 3    | 3    | 3    | 2    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 2    | 2    | 2    | 3    | 3    |
| 10   | 4   | 4   | 4   | 3   | 4   | 4   | 3   | 4   | 4   | 4    | 4    | 4    | 4    | 4    | 4    | 2    | 3    | 4    | 4    | 4    | 4    | 4    | 4    | 5    | 4    | 4    | 4    | 3    | 4    | 4    |
| 11   | 2   | 3   | 3   | 3   | 3   | 4   | 4   | 3   | 3   | 4    | 2    | 2    | 2    | 2    | 2    | 2    | 3    | 3    | 3    | 3    | 3    | 4    | 5    | 4    | 4    | 4    | 4    | 4    | 3    | 3    |
| 12   | 5   | 3   | 4   | 2   | 3   | 3   | 4   | 2   | 2   | 3    | 1    | 1    | 1    | 1    | 4    | 1    | 2    | 3    | 4    | 3    | 4    | 2    | 4    | 5    | 5    | 3    | 1    | 2    | 4    | 5    |
| 13   | 3   | 4   | 3   | 4   | 5   | 3   | 3   | 3   | 3   | 3    | 3    | 2    | 2    | 3    | 3    | 3    | 3    | 4    | 4    | 3    | 3    | 3    | 3    | 3    | 3    | 4    | 4    | 3    | 3    | 3    |
| 14   | 3   | 3   | 3   | 3   | 3   | 4   | 3   | 2   | 3   | 3    | 4    | 3    | 2    | 3    | 2    | 2    | 3    | 2    | 3    | 2    | 3    | 3    | 3    | 4    | 2    | 2    | 1    | 1    | 2    | 1    |
| 15   | 1   | 4   | 4   | 4   | 1   | 1   | 1   | 3   | 3   | 3    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 3    | 3    | 3    | 3    | 3    | 4    | 4    | 3    | 2    | 3    |
| 16   | 4   | 2   | 2   | 2   | 3   | 4   | 3   | 3   | 2   | 4    | 3    | 3    | 3    | 4    | 3    | 3    | 2    | 2    | 4    | 4    | 4    | 4    | 2    | 5    | 2    | 2    | 4    | 4    | 3    | 3    |
| 17   | 3   | 4   | 2   | 2   | 2   | 3   | 2   | 4   | 2   | 4    | 2    | 2    | 2    | 4    | 3    | 2    | 2    | 4    | 4    | 5    | 5    | 5    | 5    | 4    | 3    | 4    | 2    | 2    | 3    | 3    |
| 18   | 3   | 2   | 2   | 2   | 3   | 3   | 2   | 1   | 2   | 3    | 2    | 2    | 4    | 3    | 3    | 3    | 3    | 4    | 3    | 2    | 3    | 3    | 3    | 3    | 2    | 3    | 4    | 4    | 3    | 3    |
| 19   | 4   | 2   | 2   | 2   | 3   | 3   | 1   | 2   | 2   | 3    | 2    | 2    | 2    | 2    | 3    | 3    | 4    | 2    | 2    | 4    | 4    | 4    | 4    | 4    | 4    | 3    | 4    | 2    | 2    | 2    |
| 20   | 3   | 2   | 2   | 2   | 3   | 3   | 2   | 3   | 3   | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 4    | 3    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 3    | 4    |
| 21   | 5   | 4   | 2   | 3   | 2   | 2   | 3   | 2   | 2   | 3    | 3    | 3    | 4    | 3    | 3    | 2    | 3    | 4    | 4    | 3    | 4    | 3    | 4    | 3    | 2    | 4    | 3    | 4    | 5    | 5    |
| 22   | 3   | 1   | 2   | 2   | 3   | 3   | 3   | 1   | 1   | 3    | 3    | 3    | 3    | 3    | 2    | 2    | 2    | 3    | 3    | 3    | 4    | 3    | 4    | 4    | 4    | 4    | 5    | 2    | 3    | 4    |
| 23   | 3   | 3   | 2   | 2   | 3   | 3   | 3   | 2   | 3   | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 4    | 3    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    |
| 24   | 3   | 4   | 2   | 2   | 1   | 3   | 3   | 1   | 1   | 3    | 3    | 3    | 4    | 3    | 3    | 1    | 3    | 4    | 4    | 3    | 4    | 4    | 4    | 3    | 4    | 4    | 4    | 4    | 4    | 4    |
| 25   | 5   | 4   | 4   | 4   | 4   | 3   | 3   | 4   | 4   | 3    | 3    | 4    | 3    | 4    | 3    | 3    | 4    | 3    | 3    | 5    | 5    | 3    | 5    | 5    | 3    | 4    | 5    | 3    | 4    | 3    |
| 26   | 5   | 5   | 5   | 3   | 4   | 3   | 2   | 2   | 2   | 4    | 3    | 3    | 2    | 2    | 3    | 3    | 4    | 3    | 3    | 4    | 3    | 5    | 5    | 5    | 5    | 5    | 5    | 5    | 5    | 5    |
| 27   | 3   | 3   | 3   | 3   | 3   | 4   | 3   | 3   | 4   | 4    | 3    | 3    | 3    | 3    | 3    | 1    | 1    | 2    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 4    | 4    | 4    | 4    |
| 28   | 2   | 2   | 2   | 3   | 3   | 3   | 2   | 2   | 3   | 3    | 2    | 3    | 2    | 3    | 3    | 3    | 4    | 4    | 4    | 4    | 4    | 3    | 3    | 3    | 4    | 4    | 4    | 4    | 4    | 3    |
| 29   | 4   | 5   | 5   | 4   | 4   | 5   | 4   | 4   | 4   | 5    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 5    | 5    | 5    | 5    | 4    | 5    | 4    | 4    | 5    | 5    |
| 30   | 3   | 2   | 2   | 1   | 2   | 3   | 2   | 1   | 1   | 1    | 2    | 3    | 3    | 3    | 3    | 1    | 1    | 2    | 3    | 4    | 3    | 4    | 3    | 4    | 5    | 4    | 3    | 4    | 4    | 4    |
| 31   | 4   | 4   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3    | 4    | 4    | 4    | 3    | 3    | 3    | 5    | 5    | 5    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 3    | 3    | 3    | 3    |
| 32   | 3   | 4   | 4   | 3   | 4   | 3   | 4   | 4   | 4   | 3    | 4    | 4    | 3    | 4    | 3    | 2    | 4    | 4    | 4    | 2    | 3    | 4    | 4    | 4    | 4    | 3    | 4    | 4    | 4    | 4    |
| 33   | 5   | 3   | 1   | 1   | 1   | 3   | 3   | 3   | 3   | 3    | 1    | 3    | 3    | 3    | 3    | 1    | 1    | 1    | 1    | 3    | 3    | 3    | 3    | 5    | 3    | 3    | 5    | 1    | 3    | 3    |
| 34   | 1   | 4   | 4   | 2   | 2   | 2   | 1   | 5   | 4   | 3    | 2    | 2    | 3    | 2    | 1    | 5    | 4    | 4    | 5    | 5    | 5    | 3    | 3    | 4    | 5    | 2    | 5    | 1    | 4    | 3    |
| 35   | 2   | 3   | 2   | 2   | 2   | 2   | 1   | 2   | 2   | 3    | 1    | 3    | 3    | 2    | 2    | 2    | 2    | 3    | 3    | 2    | 3    | 3    | 3    | 2    | 2    | 3    | 3    | 2    | 3    | 3    |
| 36   | 4   | 4   | 2   | 3   | 3   | 3   | 2   | 2   | 3   | 2    | 2    | 2    | 2    |      | 2    | 3    | 4    | 4    | 4    | 3    | 4    | 3    | 3    | 3    | 4    | 4    | 4    | 3    | 4    | 4    |
| 37   | 4   | 5   | 4   | 3   | 4   | 3   |     | 3   | 3   | 2    |      |      |      |      | 2    |      | 2    | 3    | 3    | 2    | 4    | 3    | 3    | 4    | 3    | 5    | 4    | 4    | 5    | 5    |
| 38   | 2   | 3   | 2   | 2   | 3   | 3   |     | 3   | 2   | 3    |      |      |      |      |      | 2    | 3    | 3    | 4    | 3    | 4    | 3    | 3    | 4    | 3    | 4    | 3    | 2    | 3    | 3    |
| 39   | 2   | 3   | 2   |     | 3   | 4   |     | 3   | 3   |      |      |      |      |      | 3    |      | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 5    | 5    | 4    | 4    | 4    | 3    | 3    |
| 40   | 3   | 4   | 4   |     | 3   | 3   |     | 3   | 3   |      |      |      |      |      |      |      | 2    | 2    | 2    | 3    | 3    | 3    | 4    | 3    | 3    | 2    | 2    | 2    | 3    | 3    |
| 41   | 3   | 4   | 4   | 3   | 3   | 3   |     | 3   | 3   |      |      |      |      |      |      |      | 2    | 2    | 2    | 3    | 3    | 3    | 4    | 3    | 3    | 2    | 2    | 2    | 3    | 3    |
| 42   | 3   | 3   | 2   |     | 2   | 5   | 5   | 3   | 2   | 3    | 4    | 3    | 5    | 5    | 4    | 3    | 3    | 5    | 5    | 4    | 3    | 4    | 5    | 5    | 3    | 5    | 5    | 5    | 4    | 4    |
| 43   | 3   | 2   | 2   | 2   | 3   | 1   |     | 2   | 2   |      |      |      |      |      |      |      | 3    | 4    | 4    | 3    |      | 3    | 3    | 4    | 5    | 4    | 4    | 4    | 3    | 3    |
| 44   | 3   | 2   | 2   | 4   | 4   | 3   |     | 3   | 3   | 4    |      |      |      |      |      |      | 3    | 4    | 4    |      |      | 3    | 3    | 3    | 3    | 3    | 2    | 3    | 4    | 4    |
| 45   |     | 1   | 1   | 1   | 2   | 2   |     | 1   | 1   | 3    |      |      |      |      | 3    |      | 2    | 2    |      | 3    | 3    | 3    | 3    | 3    | 4    |      | 4    | 3    | 3    |      |
| 46   | 3   | 3   | 2   | 2   | 2   | 3   |     | 3   | 2   |      |      |      |      | 4    |      | 3    | 2    | 2    | 2    | 5    | 5    | 3    | 4    | 3    | 4    | 4    | 4    | 3    | 4    | 2    |
| 47   |     | 3   | 3   | 2   | 2   | 4   |     | 2   | 2   | 4    |      |      |      | 3    |      |      |      | 5    | 5    | 5    | 4    | 4    | 4    | 4    | 3    | 5    | 5    | 3    | 4    | 3    |
| 48   | 4   | 4   | 4   |     | 1   | 3   |     | 4   | 3   | 3    |      |      |      | 2    | 3    | 3    | 3    | 3    | 5    | 4    | 4    | 3    | 3    | 3    | 1    | 5    | 5    | 1    | 3    | 4    |
| 49   | 4   | 2   | 3   | 2   | 5   | 1   |     | 5   | 5   | 3    | 5    | 3    | 5    | 2    |      | 4    | 5    | 5    | 4    | 3    | 1    | 2    | 3    | 2    | 2    | 5    | 1    | 1    | 1    | 3    |
| 50   | 5   | 5   | 5   | 5   | 5   | 5   |     | 5   | 5   | 3    |      |      |      | 3    |      | 3    | 4    | 4    | 3    | 3    | 4    | 4    | 4    | 4    | 5    | 4    | 5    | 3    | 4    | 4    |

Bagian 1: Data Perceived Quality

| Resp | PQ1 | PQ2 | PQ3 | PQ4 | PQ5 | PQ6 | PQ7 | PQ8 | PQ9 | PQ10 | PQ11 | PQ12 | PQ13 | PQ14 | PQ15 | PQ16 | PQ17 | PQ18 | PQ19 | PQ20 | PQ21 | PQ22 | PQ23 | PQ24 | PQ25 | PQ26 | PQ27 | PQ28 | PQ29 | PQ30 |   |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|
| 51   |     | 4   | 5   | 1   | 3   | 5   | 1   | 5   | 1   | 3    | 1    | 1    | 1    | 1    | 1    | 1    | 5    | 5    | 5    | 5    | 4    | 3    | 5    | 5    | 5    | 5    | 5    | 5    | 5    | 3    |   |
| 52   | 2   | 2   | 2   | 2   | 2   | 4   |     | 3   | 2   | 3    |      |      |      | 4    |      | 3    | 3    | 3    | 3    | 3    | 4    | 3    | 4    | 4    | 4    | 3    | 4    | 2    | 3    | 3    |   |
| 53   | 2   | 3   | 1   | 1   | 2   |     |     | 2   | 2   | 3    |      |      |      | 3    |      | 3    | 3    | 4    | 3    | 3    | 5    | 3    | 3    | 4    | 3    | 2    | 5    | 4    | 3    | 2    |   |
| 54   | 2   | 2   | 3   |     | 2   |     |     |     |     |      |      |      |      |      |      | 2    |      | 2    |      |      | 2    | 3    | 3    | 3    | 2    |      | 4    | 4    | 4    | 4    |   |
| 55   | 2   | 3   | 1   | 1   | 1   | 3   |     | 1   | 1   |      |      | 4    |      |      |      | 1    | 1    | 1    | 1    | 1    |      | 3    | 3    | 3    | 3    | 5    | 1    | 4    |      | 4    | 4 |
| 56   |     |     |     |     | 3   | 3   |     |     |     | 3    |      |      |      |      |      |      |      |      |      |      | 3    | 3    | 3    | 4    | 5    | 2    | 4    |      |      | 3    | 3 |
| 57   | 3   | 2   | 2   | 2   | 3   |     |     | 3   | 3   | 3    |      |      |      |      |      |      | 3    | 3    | 3    | 3    | 3    | 3    | 4    | 4    | 2    | 2    | 4    | 2    | 3    | 4    |   |
| 58   | 2   | 2   | 2   | 2   | 2   | 3   | 3   | 2   | 2   | 3    | 2    | 2    |      | 4    |      | 2    | 3    | 3    | 3    | 3    | 3    | 2    | 3    | 3    | 3    | 4    | 4    | 5    | 3    | 3    | 3 |
| 59   | 3   | 1   | 2   | 2   | 2   | 3   |     | 2   | 2   | 3    | 2    |      | 2    |      |      | 1    | 5    | 3    | 3    |      |      | 3    | 3    | 3    | 3    | 2    | 2    | 2    | 3    | 2    | 2 |
| 60   |     | 5   | 5   | 5   | 5   | 5   |     | 5   | 5   | 4    | 3    | 3    |      | 5    | 5    |      | 4    | 4    | 3    | 5    | 5    | 4    | 1    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3 |
| 61   | 2   | 2   | 1   | 3   | 3   | 2   | 2   | 1   |     |      |      |      |      | 3    | 2    | 2    | 2    | 3    | 4    | 2    | 4    | 5    | 4    | 5    | 3    | 3    | 4    | 5    | 2    | 3    | 2 |
| 62   |     | 3   | 3   | 2   | 3   | 3   | 3   | 2   | 2   | 3    |      |      |      | 3    |      | 2    | 3    | 3    | 3    | 3    | 3    | 4    | 4    | 3    | 3    | 3    | 4    | 4    | 3    | 3    | 3 |
| 63   | 4   | 4   | 3   | 3   | 4   | 4   |     | 4   | 3   | 3    |      | 2    |      |      |      | 3    | 3    | 4    | 4    | 4    | 5    | 5    | 5    | 5    | 5    | 5    | 5    | 5    | 5    | 4    | 4 |
| 64   | 5   | 5   | 5   | 4   | 5   | 3   |     | 3   | 2   | 3    |      | 2    |      | 2    |      | 4    | 5    | 4    | 3    | 4    | 4    | 3    | 3    | 5    | 4    | 4    | 4    | 5    | 3    | 4    | 4 |
| 65   | 3   | 2   | 2   | 3   | 3   | 3   |     | 2   | 4   | 4    |      |      |      | 3    |      | 2    | 3    | 4    | 2    | 4    | 3    | 3    | 3    | 2    | 2    | 1    | 2    | 3    | 4    | 2    | 2 |
| 66   | 3   | 2   | 2   | 2   | 3   | 3   |     | 3   | 3   | 3    |      |      |      | 3    |      |      | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 4    | 5    | 3    | 3    | 3    | 3 |
| 67   | 3   | 3   | 2   | 2   | 1   | 3   |     | 2   | 3   | 3    |      |      |      | 4    |      |      | 4    | 3    | 3    | 3    | 3    | 4    | 3    | 3    | 4    | 4    | 4    | 4    | 3    | 3    | 2 |
| 68   |     | 4   | 3   | 2   | 2   | 2   |     | 5   | 5   | 3    |      | 3    |      | 5    | 2    | 3    | 1    | 1    | 3    | 3    | 2    | 3    | 3    | 3    | 2    | 5    | 5    | 2    | 5    | 2    | 2 |
| 69   | 3   | 3   | 3   | 2   | 3   | 3   |     | 2   | 3   | 4    |      | 3    |      | 4    |      |      |      |      | 3    | 3    | 3    | 4    | 3    | 3    | 4    | 4    | 3    | 3    | 3    | 4    | 3 |
| 70   | 4   | 4   |     | 4   |     | 2   | 2   | 4   |     |      |      | 4    | 2    | 4    | 3    |      | 4    | 2    | 4    | 4    | 4    | 4    | 2    | 3    | 4    | 2    | 2    | 3    | 3    |      |   |
| 71   | 4   | 4   | 5   | 3   | 4   | 4   |     | 2   | 2   | 4    |      |      | 4    | 5    |      |      | 5    | 5    | 5    | 5    | 4    | 5    | 5    | 5    | 5    | 5    | 5    | 5    | 5    | 2    | 5 |
| 72   | 3   | 2   | 1   | 2   | 2   | 5   |     | 2   | 1   | 3    |      | 4    |      | 5    | 3    | 3    | 4    | 5    | 1    | 2    | 4    | 3    | 5    | 5    | 1    | 2    | 5    | 4    | 4    | 3    | 3 |
| 73   | 4   | 3   | 4   | 2   | 3   |     |     | 3   | 4   | 3    |      |      |      | 3    |      | 3    | 3    | 2    | 2    |      |      | 4    | 3    | 3    | 2    | 2    | 2    | 4    | 4    | 3    |   |
| 74   | 2   | 1   | 1   | 1   | 2   | 2   | 1   | 1   | 1   | 3    | 1    | 1    |      | 3    |      |      | 1    | 2    | 1    | 1    | 2    | 3    | 3    | 4    | 3    | 2    | 2    | 4    | 2    | 3    | 3 |
| 75   | 2   | 2   | 1   | 2   | 2   | 4   |     | 2   | 3   |      |      |      |      | 2    | 3    |      | 1    | 3    | 3    | 2    | 3    | 4    | 4    | 4    | 3    | 3    | 5    | 3    | 3    | 3    | 3 |
| 76   | 4   | 3   | 2   | 1   | 2   | 3   |     | 2   | 3   | 4    |      |      |      |      |      |      | 3    | 2    |      |      |      | 3    | 3    | 3    | 3    | 3    |      |      | 3    | 3    | 3 |
| 77   | 4   | 4   | 3   | 2   | 3   | 3   | 2   | 3   | 3   | 3    |      |      |      | 4    |      |      | 3    | 4    | 3    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 5    | 4    | 5    | 5 |
| 78   | 2   | 3   | 1   | 1   | 3   | 3   |     | 1   | 3   | 3    |      |      |      |      |      |      | 2    |      |      |      |      |      |      |      |      | 4    | 3    | 3    |      |      | 3 |
| 79   | 4   | 3   | 1   | 2   | 3   | 4   |     | 3   | 3   | 3    |      |      | 4    | 4    | 4    | 3    | 3    | 5    | 4    | 4    | 4    | 4    | 3    | 3    | 4    | 3    | 4    | 4    | 2    | 3    | 5 |
| 80   | 4   | 4   | 2   | 2   | 3   | 3   |     | 3   | 4   | 4    |      | 2    |      | 4    |      |      | 4    | 5    | 4    | 5    | 5    | 4    | 4    | 4    | 5    | 3    | 4    | 5    | 5    | 5    | 5 |
| 81   | 5   | 2   | 2   | 2   | 3   | 5   | 3   | 2   | 2   | 3    |      |      |      | 3    |      | 3    | 5    | 4    | 4    | 4    | 5    | 5    | 5    | 5    | 5    | 3    | 3    | 4    | 4    | 3    | 3 |
| 82   | 3   | 4   | 1   | 1   | 2   | 2   |     | 3   | 2   | 3    |      |      |      |      |      |      | 2    | 1    | 2    | 3    | 5    | 4    | 4    | 3    | 3    | 4    | 4    | 4    | 4    | 3    | 3 |
| 83   | 3   | 2   | 2   | 3   | 3   |     |     | 2   | 3   | 3    |      |      |      | 4    |      | 3    | 4    | 3    | 3    | 3    | 4    | 3    | 4    | 4    | 4    | 2    | 2    | 3    | 3    | 3    | 5 |
| 84   | 5   | 5   | 4   | 4   | 4   | 5   | 3   | 4   | 4   | 5    |      |      |      | 3    |      |      | 5    | 4    | 4    | 5    | 3    | 3    | 3    | 5    | 3    | 2    | 2    | 3    | 3    | 3    | 3 |
| 85   | 4   | 4   | 4   | 3   | 2   |     |     | 3   | 3   |      |      |      |      |      |      |      | 3    | 2    |      |      | 3    | 3    |      |      |      | 4    | 2    | 2    | 3    | 5    | 2 |
| 86   | 3   | 4   | 2   | 3   | 1   | 3   |     | 1   | 2   | 3    |      |      |      |      |      |      | 2    | 2    | 3    |      | 4    | 4    | 4    | 4    | 4    | 3    | 3    | 2    | 3    | 4    | 5 |
| 87   | 4   | 3   | 3   | 2   | 3   | 3   | 4   | 3   | 2   | 4    |      |      |      |      | 3    | 3    | 4    | 4    | 3    | 3    | 3    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 3    | 4 |
| 88   | 4   | 3   | 2   | 3   | 3   | 4   |     | 3   | 3   | 3    |      | 2    | 3    | 3    | 3    | 2    | 3    | 2    | 4    | 4    | 5    | 3    | 2    | 4    | 4    | 2    | 4    | 1    | 3    | 3    | 3 |
| 89   | 4   | 3   | 2   | 3   | 3   | 4   | 4   | 2   | 2   | 2    | 1    | 1    | 1    | 2    |      | 2    | 1    | 3    | 4    | 4    |      | 4    | 4    | 5    | 5    | 3    | 5    | 4    | 4    | 3    | 3 |
| 90   | 3   | 2   | 3   | 2   | 3   | 2   | 5   | 3   |     |      |      |      |      | 4    |      |      | 3    | 2    | 3    | 2    | 3    | 2    | 2    | 3    | 2    | 2    | 2    | 3    | 3    | 3    | 2 |
| 91   | 4   | 2   | 2   | 2   | 2   | 3   | 4   | 2   | 4   | 4    | 4    | 3    | 2    | 3    | 4    | 2    |      | 4    | 4    | 3    | 4    | 4    | 4    | 3    | 4    | 2    | 5    | 3    | 4    | 4    | 4 |
| 92   | 1   | 2   | 1   | 1   | 1   | 3   |     | 1   | 1   | 2    |      |      |      |      |      | 2    | 1    | 2    | 2    | 3    | 3    | 3    | 3    | 3    | 4    | 1    | 4    | 2    | 3    | 3    | 3 |
| 93   | 3   | 4   | 3   | 3   | 2   | 4   | 3   | 4   | 5   | 3    |      |      |      |      |      |      | 5    | 4    | 4    | 3    | 5    | 4    | 3    | 3    | 3    | 4    | 4    | 3    | 4    | 3    | 3 |
| 94   | 4   | 3   | 3   | 4   | 3   | 2   | 3   | 3   | 4   | 4    | 3    | 4    | 4    | 4    | 3    | 3    | 4    | 5    | 4    | 5    | 4    | 4    | 4    | 3    | 5    | 2    | 5    | 5    | 5    | 5    | 5 |
| 95   |     | 3   | 2   | 2   | 2   | 3   |     | 3   | 2   | 3    |      |      |      |      |      |      | 3    | 3    | 3    | 3    | 4    | 4    | 4    | 4    | 4    | 5    | 4    | 5    | 2    | 5    | 3 |
| 96   | 3   | 4   | 4   | 2   | 4   | 5   | 2   | 2   | 3   | 5    | 2    | 2    | 1    | 2    | 1    |      | 3    | 5    | 5    |      | 4    | 3    | 3    | 3    | 5    | 4    | 4    | 3    | 3    | 4    | 4 |
| 97   | 1   | 1   | 1   | 1   | 1   | 3   | 4   |     | 2   | 2    | 3    |      |      |      |      |      | 3    | 5    | 5    | 5    | 3    | 3    | 3    | 3    | 4    | 5    | 5    | 1    | 3    | 3    | 3 |
| 98   | 3   | 2   | 2   | 2   | 2   | 3   |     | 1   | 2   |      |      |      |      |      |      |      | 2    | 2    | 2    | 3    | 4    | 3    | 2    | 2    | 3    | 3    | 2    | 3    | 4    | 4    | 4 |
| 99   | 3   | 2   | 2   | 2   | 2   | 3   |     | 2   | 3   | 3    |      |      |      |      |      |      | 2    | 2    | 2    | 3    | 4    | 4    | 3    | 4    | 4    | 4    | 3    | 3    | 3    | 3    | 3 |
| 100  |     | 5   | 4   | 3   |     |     |     | 3   | 3   |      |      | 5    |      | 3    |      | 3    | 4    | 4    |      |      | 5    | 5    |      | 3    |      | 3    | 3    | 3    | 4    | 3    | 3 |

| Resp | PQ1 | PQ2 | PQ3 | PQ4 | PQ5 | PQ6 | PQ7 | PQ8 | PQ9 | PQ10 | PQ11 | PQ12 | PQ13 | PQ14 | PQ15 | PQ16 | PQ17 | PQ18 | PQ19 | PQ20 | PQ21 | PQ22 | PQ23 | PQ24 | PQ25 | PQ26 | PQ27 | PQ28 | PQ29 | PQ30 |   |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|
| 101  | 2   | 3   | 2   | 1   | 1   | 1   | 3   | 3   | 3   | 3    | 1    | 2    | 1    | 2    | 2    | 3    | 1    | 4    | 2    | 4    | 5    | 4    | 4    | 3    | 4    | 2    | 3    | 1    | 5    | 2    |   |
| 102  | 1   | 3   | 1   | 1   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 3    | 3    | 3    | 3    | 3    | 2    | 2    | 3    | 3    | 3    | 5    | 5    | 5    | 5    | 2    | 3    | 5    | 4    | 5    |   |
| 103  | 3   | 3   | 1   | 2   | 2   | 2   | 3   | 2   | 3   | 3    |      |      |      | 3    |      |      | 3    | 1    | 4    | 4    | 4    | 3    | 4    | 4    | 3    | 1    | 1    | 2    | 2    | 3    | 4 |
| 104  | 3   | 2   | 4   | 2   | 2   | 2   | 3   | 1   | 2   | 2    | 1    |      |      | 4    |      |      | 3    | 3    | 4    | 4    | 4    | 3    | 2    | 4    | 4    | 5    | 5    | 3    | 3    | 3    | 3 |
| 105  | 2   | 3   | 2   | 2   | 2   | 1   | 1   | 3   | 1   | 2    | 3    |      |      |      |      | 3    | 3    | 1    | 4    | 1    | 5    | 5    | 2    | 3    | 2    | 2    | 5    | 5    | 5    | 5    | 4 |
| 106  | 2   | 2   | 2   | 2   | 3   | 4   | 3   | 2   | 1   | 3    | 2    | 1    | 3    | 2    | 2    | 3    | 3    | 3    | 3    | 4    | 4    | 4    | 4    | 3    | 3    | 3    | 3    | 2    | 2    | 3    |   |
| 107  | 3   | 4   | 2   | 3   | 4   | 3   | 2   | 2   | 3   | 3    |      | 4    |      | 2    | 3    | 3    | 5    | 4    | 5    | 4    | 3    | 5    | 5    | 4    | 4    | 4    | 4    |      | 4    | 4    |   |
| 108  | 3   | 1   | 2   | 3   | 3   | 5   | 3   | 5   | 4   | 4    | 4    | 3    | 3    | 3    | 3    | 3    | 4    | 4    | 3    | 3    | 4    | 3    | 3    | 3    | 2    | 5    | 5    | 3    | 3    | 2    |   |
| 109  | 2   | 4   | 2   | 3   | 1   | 5   | 3   | 5   | 4   | 4    |      |      |      | 3    | 3    | 3    | 2    | 2    | 2    | 5    | 2    | 4    | 5    | 5    | 3    | 2    | 5    | 3    | 4    | 3    |   |
| 110  | 3   | 1   | 3   | 3   | 3   | 3   | 1   | 2   | 2   | 3    |      |      |      | 3    |      | 3    | 3    | 2    | 3    | 3    | 3    | 4    | 3    | 4    | 4    | 3    | 5    | 4    | 3    | 4    |   |
| 111  | 2   | 4   | 1   | 3   | 3   | 4   | 3   | 5   | 2   | 3    | 4    | 4    | 4    | 4    | 4    | 3    | 3    | 2    | 2    | 5    | 4    | 5    | 4    | 3    | 4    | 2    | 2    | 1    | 5    | 3    |   |
| 112  | 3   | 3   | 3   | 3   | 4   |     | 2   | 2   | 3   | 4    |      | 3    |      | 3    |      |      | 4    | 4    | 5    | 3    | 3    | 3    | 3    | 3    | 3    | 4    | 4    | 4    | 3    | 3    |   |
| 113  | 5   | 3   | 3   | 3   | 5   | 4   | 3   | 2   | 2   | 3    | 5    | 4    | 3    | 2    | 3    | 3    | 4    | 3    | 3    | 3    | 5    | 3    | 4    | 3    | 2    | 2    | 4    | 2    | 5    | 4    |   |
| 114  | 4   | 4   | 1   | 2   | 5   | 1   | 3   | 2   | 4   |      |      |      |      | 3    |      |      | 2    | 4    | 4    | 5    | 4    | 2    | 2    | 2    | 4    | 5    | 4    | 3    | 3    | 3    |   |
| 115  | 3   | 2   | 4   | 1   | 5   | 1   | 1   | 1   | 1   | 2    | 1    | 2    | 3    | 3    | 3    | 2    | 2    | 4    | 4    | 3    | 3    | 3    | 3    | 4    | 5    | 3    | 3    | 5    | 4    | 2    |   |
| 116  | 2   | 3   |     | 2   | 3   |     |     | 3   | 3   | 3    | 2    | 3    | 4    | 2    | 4    | 4    | 4    | 2    | 3    | 3    | 4    | 4    | 5    | 5    | 3    | 2    | 4    | 3    | 4    | 3    |   |
| 117  | 3   | 2   | 4   | 3   | 5   | 4   | 4   | 5   | 4   | 4    | 4    | 4    | 5    | 3    | 5    | 2    | 3    | 3    | 1    | 3    | 4    | 3    | 3    | 4    | 5    | 4    | 2    | 3    | 5    | 5    |   |
| 118  | 3   | 4   | 2   | 2   | 4   |     |     | 3   | 2   | 3    |      |      |      |      |      |      |      | 3    | 4    | 3    | 5    | 4    | 4    | 4    | 2    | 5    | 5    | 4    | 3    | 3    |   |
| 119  | 4   | 2   | 4   | 4   | 4   |     |     | 3   | 3   | 3    |      |      |      |      |      |      | 3    | 3    | 3    |      |      |      | 4    | 4    | 5    |      | 5    | 2    | 4    | 4    |   |
| 120  | 3   | 4   | 1   | 1   | 1   | 3   |     | 3   | 2   | 3    | 3    | 3    | 4    | 3    | 2    | 3    | 4    | 3    | 2    | 5    | 1    | 4    | 1    | 3    | 1    | 3    | 5    | 3    | 4    | 3    |   |
| 121  | 3   | 3   | 2   | 2   | 3   | 2   | 1   | 2   | 2   |      |      |      |      |      |      |      | 3    | 4    | 4    |      |      | 4    |      | 2    | 3    | 5    | 5    |      | 3    | 4    |   |
| 122  | 3   | 3   | 2   | 2   | 3   |     |     | 3   | 2   | 3    |      |      |      |      |      |      | 1    | 2    | 2    | 4    | 3    | 3    | 5    | 3    | 4    | 3    | 2    | 1    | 4    | 4    |   |
| 123  | 1   | 4   | 2   | 4   | 5   | 3   | 2   | 1   | 3   | 4    | 4    | 3    | 1    | 2    | 2    | 3    | 5    | 4    | 3    | 4    | 4    | 4    | 4    | 3    | 5    | 2    | 4    | 3    | 3    | 3    |   |
| 124  | 3   | 4   | 3   | 3   | 5   | 4   | 4   | 3   | 3   | 3    | 3    | 2    | 2    | 3    | 3    | 3    | 4    | 4    | 3    | 5    | 4    | 3    | 4    | 3    | 2    | 2    | 5    | 5    | 3    | 4    |   |
| 125  | 2   | 1   | 3   | 4   | 5   | 4   | 2   | 3   | 3   | 3    | 3    | 2    | 2    | 2    | 2    | 2    | 2    | 1    | 3    | 4    | 3    | 4    | 4    | 3    | 3    | 4    | 2    | 4    | 4    | 4    |   |
| 126  | 3   | 3   | 5   | 4   | 1   | 1   | 1   | 3   | 2   | 3    | 3    | 4    | 3    | 3    | 3    | 2    | 3    | 4    | 2    | 3    | 4    | 3    | 5    | 5    | 3    | 5    | 5    | 3    | 5    | 4    |   |
| 127  | 2   | 3   | 1   | 3   | 3   | 4   | 1   | 3   | 3   | 3    | 3    | 4    | 4    | 3    | 5    | 3    | 5    | 3    | 2    | 4    | 4    | 4    | 3    | 4    | 5    | 5    | 2    | 4    | 5    | 3    |   |
| 128  | 1   | 3   | 5   | 4   | 3   |     | 2   | 3   | 4   | 3    |      |      |      |      |      |      | 3    | 4    | 3    |      | 5    | 3    | 2    | 4    | 3    | 5    | 5    |      | 1    | 3    |   |
| 129  | 3   | 3   | 4   | 3   | 3   |     | 2   | 1   | 4   | 4    |      |      |      |      |      |      | 3    | 2    | 3    | 2    | 4    | 3    | 3    | 5    | 3    | 2    | 5    | 3    | 3    | 3    |   |
| 130  | 4   | 4   | 2   | 2   | 4   |     | 4   | 3   | 3   | 3    |      |      |      |      |      |      | 3    | 4    | 3    | 1    | 3    | 5    | 3    | 3    | 3    | 4    | 4    | 2    | 3    | 4    |   |
| 131  | 3   | 3   | 2   | 2   | 3   | 3   | 2   | 5   | 3   | 4    | 3    | 3    |      | 3    | 2    | 3    | 3    | 3    | 5    | 4    | 4    | 4    | 4    | 3    | 5    | 1    | 1    | 3    | 4    | 5    |   |
| 132  | 3   | 4   | 2   | 1   | 1   | 4   | 1   | 1   | 2   | 3    | 2    | 3    | 5    | 5    | 3    | 3    | 3    | 4    | 3    | 3    | 5    | 3    | 3    | 4    | 3    | 4    | 4    | 2    | 3    | 3    |   |
| 133  | 3   | 4   | 2   | 2   | 1   | 3   | 3   | 2   | 3   | 4    | 3    | 2    | 2    | 2    | 3    | 1    | 2    | 4    | 3    | 3    | 4    | 5    | 5    | 4    | 5    | 2    | 3    | 1    | 3    | 5    |   |
| 134  | 4   | 1   | 3   | 4   | 1   | 2   |     | 2   | 2   | 3    |      |      |      | 3    |      | 3    | 2    | 3    | 2    | 5    | 3    | 3    | 5    | 4    | 4    | 4    | 5    | 4    | 5    | 3    |   |
| 135  | 5   | 2   | 3   | 4   | 5   | 3   | 3   | 3   | 3   | 3    | 3    | 3    | 1    | 2    | 2    | 1    | 2    | 4    | 5    | 3    | 4    | 2    | 3    | 3    | 4    | 5    | 4    | 3    | 3    | 4    |   |
| 136  | 3   | 3   | 1   | 1   | 5   | 4   |     | 2   | 1   |      |      |      |      |      |      |      | 5    | 4    | 4    | 5    | 5    | 3    | 4    | 4    | 4    | 4    | 3    | 3    | 5    | 3    |   |
| 137  | 5   | 3   | 2   | 4   | 3   | 4   |     | 2   | 3   | 3    |      |      |      |      |      |      | 4    |      | 3    | 5    | 4    | 4    | 4    | 3    | 2    | 2    | 4    |      | 2    | 4    |   |
| 138  | 5   | 3   | 4   | 3   | 2   | 4   | 4   | 2   | 4   | 4    | 5    | 3    | 4    | 3    | 3    | 2    | 3    | 3    | 2    | 4    | 4    | 3    | 5    | 3    | 3    | 3    | 5    | 3    | 3    | 3    |   |
| 139  | 2   | 2   | 2   | 2   | 3   | 4   | 3   | 3   | 4   | 2    | 1    | 2    | 2    | 2    | 3    | 2    | 3    | 1    | 3    | 4    | 2    | 4    | 3    | 3    | 4    | 4    | 5    | 3    | 4    | 2    |   |
| 140  | 5   | 2   | 2   | 4   | 3   |     |     | 2   | 2   | 3    |      | 4    |      | 3    |      |      | 5    | 4    | 5    | 4    | 4    |      | 4    | 4    | 2    | 2    | 4    | 2    | 3    | 3    |   |
| 141  | 2   | 2   | 3   | 2   | 2   |     |     | 3   | 3   | 4    | 4    | 1    | 2    | 2    | 3    | 2    | 4    | 4    | 4    | 3    | 4    | 5    | 4    | 3    | 3    | 3    | 2    | 3    | 3    | 3    |   |
| 142  | 2   | 2   | 5   | 2   | 3   | 3   |     | 3   | 2   | 1    | 3    | 3    | 2    | 3    | 3    | 2    | 4    | 3    | 4    | 5    | 4    | 3    | 3    | 4    | 5    | 5    |      | 1    | 2    |      |   |
| 143  | 1   | 3   |     | 2   | 3   | 3   |     | 3   | 3   | 3    | 4    | 3    | 4    | 3    | 3    | 3    | 3    | 5    | 4    |      |      |      | 2    |      | 2    | 1    | 4    | 3    | 3    | 3    |   |
| 144  | 5   | 4   | 2   | 2   | 1   | 3   |     | 4   | 2   |      |      |      |      | 3    |      |      | 4    | 3    | 2    | 5    | 5    | 4    | 3    | 2    | 4    | 3    | 4    | 4    | 4    | 3    |   |
| 145  | 3   | 1   | 1   | 1   | 1   | 1   |     | 2   | 2   | 3    | 3    | 3    | 4    | 3    | 3    | 3    | 4    | 5    | 4    |      |      |      | 3    | 3    | 3    | 3    | 4    | 3    | 5    | 5    |   |
| 146  | 4   | 3   | 3   | 3   | 3   | 3   |     | 4   | 2   |      |      |      |      |      |      |      | 4    | 4    | 5    | 3    | 4    | 4    | 4    | 3    | 3    | 4    | 2    | 3    | 1    | 5    | 5 |
| 147  | 3   | 4   | 3   | 3   | 3   | 2   |     | 3   | 2   | 3    |      | 2    |      |      |      |      | 3    | 4    | 3    |      |      | 4    | 5    | 2    | 4    | 4    | 5    | 5    | 2    | 5    | 3 |
| 148  | 3   | 2   | 3   | 2   | 3   | 2   | 1   | 4   | 3   | 4    | 4    | 4    | 3    | 3    | 3    | 3    | 3    | 5    | 5    | 3    | 3    | 3    | 3    | 5    | 3    | 4    | 5    | 3    | 4    | 2    |   |
| 149  | 2   | 4   | 3   | 4   | 2   | 4   | 4   | 3   | 2   | 4    | 4    | 4    | 3    | 4    | 4    | 4    | 3    | 2    | 4    | 4    | 4    | 3    | 3    | 3    | 4    | 1    | 2    | 4    | 2    | 3    | 3 |
| 150  | 2   | 3   | 2   | 2   | 3   | 4   | 4   | 3   | 2   | 3    | 3    | 4    | 4    | 5    | 3    | 3    | 3    | 2    | 2    | 4    | 4    | 4    | 3    | 3    | 3    | 2    | 2    | 2    | 2    | 4    |   |

| Resp | PQ1 | PQ2 | PQ3 | PQ4 | PQ5 | PQ6 | PQ7 | PQ8 | PQ9 | PQ10 | PQ11 | PQ12 | PQ13 | PQ14 | PQ15 | PQ16 | PQ17 | PQ18 | PQ19 | PQ20 | PQ21 | PQ22 | PQ23 | PQ24 | PQ25 | PQ26 | PQ27 | PQ28 | PQ29 | PQ30 |   |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|
| 151  | 1   | 3   | 2   | 2   | 2   | 2   |     | 2   | 2   | 3    |      |      |      |      |      |      | 5    | 4    | 4    |      | 3    | 4    | 4    | 4    | 3    | 4    | 4    | 2    | 3    | 4    |   |
| 152  | 2   | 2   | 1   | 2   | 2   | 3   | 4   |     | 2   | 1    |      |      |      |      |      |      | 5    | 5    | 4    |      | 3    | 5    | 5    | 5    | 5    | 4    | 4    | 3    | 5    | 3    |   |
| 153  | 5   | 3   | 2   | 4   | 4   | 2   |     |     | 3   | 3    | 1    | 1    | 1    | 2    | 2    | 3    | 3    | 4    | 2    | 3    | 4    | 4    | 3    | 3    | 4    | 4    | 4    | 4    | 3    | 3    |   |
| 154  | 3   | 3   | 2   | 2   | 2   | 3   | 3   | 4   | 2   | 2    | 2    |      |      |      |      |      | 5    | 2    | 3    |      | 3    | 5    | 4    | 4    | 4    | 4    | 1    | 1    | 3    | 5    |   |
| 155  | 3   | 4   | 2   | 4   | 1   | 3   | 4   | 4   | 2   | 3    | 4    |      |      | 3    | 2    | 3    | 4    | 4    | 4    | 3    | 4    | 4    | 3    | 4    | 4    | 4    | 4    | 5    | 3    | 4    |   |
| 156  | 5   | 1   | 4   | 1   | 1   | 2   |     | 3   | 2   | 4    | 4    | 3    | 2    | 4    | 4    | 4    | 3    | 3    | 3    | 3    | 2    | 4    | 5    | 4    | 4    | 4    | 4    | 4    | 3    | 3    |   |
| 157  | 4   | 3   |     | 4   | 4   | 3   |     | 3   | 3   |      |      |      |      |      |      |      | 3    |      |      | 1    |      | 4    |      | 4    | 3    |      | 2    |      | 3    | 3    |   |
| 158  | 5   | 2   | 4   | 3   | 2   | 2   |     | 4   | 3   | 3    | 2    | 4    | 4    | 4    | 3    | 1    |      | 4    | 3    |      | 4    | 3    | 3    | 3    | 2    | 2    | 2    | 1    | 4    | 4    |   |
| 159  | 4   | 3   | 4   | 3   | 5   | 5   |     | 4   | 4   | 4    |      |      |      |      |      |      | 4    | 2    | 4    | 4    | 3    | 3    | 3    | 4    | 3    | 3    | 3    | 3    | 3    | 3    |   |
| 160  | 1   | 5   | 1   | 3   | 2   | 2   |     | 4   | 4   | 4    |      |      |      | 3    |      | 3    | 1    | 3    | 3    | 3    | 4    | 3    | 3    | 3    | 3    | 5    | 2    | 2    | 2    | 3    |   |
| 161  | 3   | 2   |     | 2   | 3   | 3   |     |     | 1   | 3    |      |      |      | 3    |      | 3    | 5    | 5    | 5    | 5    | 3    | 5    | 2    | 3    | 4    | 1    | 5    | 5    | 4    | 3    |   |
| 162  | 3   | 4   | 2   | 2   | 2   | 3   | 4   | 4   | 3   | 3    | 3    | 1    | 3    | 2    | 2    | 2    | 1    | 3    | 4    | 4    | 4    | 4    | 3    | 3    | 3    | 4    | 3    | 4    | 3    | 3    |   |
| 163  | 2   | 4   | 2   | 2   | 1   | 4   | 4   | 3   | 2   | 5    | 2    | 2    | 2    | 4    | 4    | 3    | 3    | 3    | 3    | 3    | 4    | 3    | 3    | 4    | 4    | 4    | 1    | 3    | 4    | 5    | 4 |
| 164  | 3   | 4   | 2   | 3   | 5   | 4   |     | 3   | 2   | 3    |      |      |      | 3    |      |      | 4    | 3    | 4    | 5    | 5    | 3    | 5    | 5    | 4    | 3    | 4    | 2    | 3    | 3    |   |
| 165  | 2   | 3   |     | 2   | 3   | 2   |     | 3   | 2   | 2    |      |      |      |      |      | 2    | 2    | 3    | 5    | 3    | 3    | 2    | 3    | 5    | 5    | 5    | 5    | 3    | 3    | 3    |   |
| 166  | 4   | 5   | 1   | 1   | 1   | 2   |     |     |     | 3    | 2    | 3    | 2    | 3    | 2    | 1    | 3    | 3    | 3    | 4    | 4    | 3    | 3    | 4    | 3    | 3    | 2    | 1    | 4    | 3    |   |
| 167  | 2   | 1   | 2   | 1   | 3   | 3   |     |     |     | 3    |      |      |      |      |      | 2    | 3    | 3    | 4    | 3    | 5    | 3    | 3    | 4    | 5    | 3    | 4    | 3    | 3    | 3    |   |
| 168  | 5   | 5   | 3   | 2   | 3   | 3   | 3   | 1   | 3   | 3    | 3    | 3    | 2    | 2    | 4    | 3    | 3    | 5    | 3    | 2    | 3    | 4    | 2    | 3    | 2    | 3    | 5    | 2    | 3    | 3    |   |
| 169  | 1   | 5   | 3   | 1   | 3   |     |     | 1   | 1   | 3    |      |      |      |      |      | 3    | 3    | 2    | 4    | 3    | 3    | 3    | 4    | 4    | 5    | 2    | 2    | 3    | 4    | 3    |   |
| 170  | 3   | 2   | 3   | 2   | 4   | 4   | 3   | 3   | 4   | 3    | 1    | 5    | 1    | 2    | 3    | 3    | 1    | 2    | 4    | 3    | 3    | 4    | 3    | 3    | 4    | 4    | 4    | 4    | 2    | 3    |   |
| 171  | 3   | 3   | 1   | 2   | 3   | 4   |     | 3   | 4   | 4    | 1    | 4    | 3    | 4    | 3    | 4    | 3    | 4    | 1    | 3    | 5    | 3    | 3    | 2    | 3    | 5    | 3    | 3    | 3    | 5    |   |
| 172  | 2   | 4   | 4   | 4   | 3   |     |     | 4   | 3   | 3    |      |      |      |      |      |      | 2    | 2    | 4    | 3    | 4    | 4    | 4    | 4    | 5    | 1    | 4    | 3    | 3    | 3    |   |
| 173  | 5   | 4   | 4   | 3   | 3   | 3   | 1   | 3   | 3   | 3    | 2    | 2    | 2    | 2    | 2    | 3    | 3    | 4    | 2    | 3    | 4    | 3    | 3    | 4    | 5    | 4    | 5    | 5    | 4    | 4    |   |
| 174  | 1   | 4   | 4   | 1   | 1   | 3   |     | 2   | 5   | 3    |      |      |      |      |      |      | 2    | 4    | 4    | 3    | 3    | 4    | 2    | 3    | 3    | 3    | 4    | 4    | 4    | 3    |   |
| 175  | 5   | 1   | 2   | 1   | 2   | 3   |     | 2   | 5   | 3    |      | 1    |      | 3    |      |      | 4    | 5    | 5    | 4    | 4    | 4    | 3    | 4    | 4    | 4    | 4    | 4    | 4    | 3    |   |
| 176  | 2   | 4   | 2   | 3   | 2   | 3   |     | 4   | 3   | 3    |      | 3    |      | 3    | 3    | 1    | 1    | 2    | 2    | 4    | 5    | 3    | 4    | 3    | 4    | 5    | 4    | 1    | 4    | 4    |   |
| 177  | 5   | 4   | 2   | 2   | 5   | 4   | 4   | 4   |     |      |      |      |      |      |      |      | 3    | 4    |      |      |      |      | 3    | 4    | 3    | 3    | 4    | 3    | 5    | 3    |   |
| 178  | 3   | 2   | 2   | 2   | 2   | 3   | 4   | 3   | 1   | 3    | 2    | 2    | 2    | 4    | 3    | 4    | 2    | 4    | 5    | 5    | 3    | 3    | 3    | 3    | 2    | 3    | 4    | 3    | 3    | 2    |   |
| 179  | 4   | 5   | 2   | 3   | 3   | 4   | 1   | 4   | 4   | 3    | 2    | 3    | 3    | 3    | 2    | 3    | 3    | 3    | 3    | 3    | 3    | 4    | 4    | 5    | 5    | 5    | 2    | 5    | 4    | 3    |   |
| 180  | 3   | 4   | 1   | 3   | 2   | 2   |     | 4   | 3   | 3    |      |      |      |      |      |      | 4    | 2    |      |      | 4    | 4    | 3    | 4    | 4    | 1    | 4    |      | 5    | 4    |   |
| 181  | 4   | 3   | 3   | 2   | 3   | 2   |     | 3   | 5   | 5    | 1    | 1    |      | 4    | 3    | 3    | 3    | 2    | 4    | 3    | 4    | 4    | 3    | 3    | 3    | 4    | 4    | 5    | 3    | 3    |   |
| 182  | 2   | 3   | 3   | 2   | 2   | 2   |     | 2   | 4   | 3    |      |      |      |      |      |      | 5    | 4    | 4    | 5    | 4    | 3    | 3    | 5    | 5    | 4    | 5    | 2    | 3    | 3    |   |
| 183  | 3   | 4   | 3   | 2   | 3   | 3   |     | 2   | 3   | 3    |      |      |      | 3    | 3    | 3    | 3    | 3    |      |      |      | 4    | 5    |      | 4    | 4    | 4    | 2    | 3    |      |   |
| 184  | 3   | 3   | 2   | 3   | 3   | 3   |     | 2   | 3   | 3    |      | 3    |      | 3    |      |      | 3    | 2    |      | 3    |      | 3    | 3    | 3    | 4    | 4    | 5    | 2    | 5    | 2    |   |
| 185  | 2   | 4   | 4   | 3   | 4   | 4   | 4   | 3   | 5   | 5    | 2    | 2    | 2    | 4    | 2    | 3    | 2    | 4    | 2    | 2    | 3    | 4    | 3    | 4    | 4    | 4    | 5    | 3    | 3    | 3    |   |
| 186  | 3   | 1   | 2   | 1   | 3   | 3   | 1   | 3   | 1   | 3    | 2    | 3    | 5    | 5    | 3    | 3    | 3    | 1    | 4    | 5    | 5    | 3    | 2    | 3    | 2    | 4    | 5    | 2    | 3    | 3    |   |
| 187  | 4   | 5   | 2   | 3   | 3   | 4   |     | 3   | 4   | 4    |      | 4    |      | 4    |      |      | 3    | 3    | 4    |      | 4    | 5    | 4    | 3    | 5    | 4    | 2    | 2    | 3    | 4    |   |
| 188  | 2   | 4   | 1   | 1   | 3   | 4   |     | 1   |     |      |      |      |      | 3    |      | 3    | 4    | 3    |      |      | 4    | 4    | 4    | 3    | 4    | 4    | 4    |      | 4    | 3    |   |
| 189  | 2   | 2   | 2   | 2   | 4   | 4   | 3   | 1   | 1   | 3    | 2    | 2    | 3    | 5    | 2    | 1    | 3    | 2    | 4    | 3    | 4    | 3    | 3    | 3    | 5    | 4    | 5    | 3    | 3    | 4    |   |
| 190  | 2   | 4   | 4   | 3   | 2   | 5   | 3   | 1   | 1   | 3    | 1    | 1    | 1    | 2    | 3    | 1    | 1    | 4    | 2    | 3    | 3    | 3    | 3    | 4    | 3    | 2    | 4    | 3    | 3    | 3    |   |
| 191  | 4   | 4   | 2   | 3   | 2   | 2   |     | 2   |     |      |      |      |      |      |      | 3    | 5    | 5    | 2    | 5    | 4    | 4    | 4    | 3    | 1    | 5    | 5    | 3    | 3    | 3    |   |
| 192  | 3   | 3   | 2   | 3   | 4   | 3   | 2   | 4   | 3   | 4    |      | 4    | 4    | 3    | 5    | 2    | 2    | 4    | 5    | 4    | 3    | 5    | 5    | 3    | 4    | 3    | 4    | 5    | 4    | 5    |   |
| 193  | 4   | 3   | 2   | 2   | 3   | 4   | 4   | 5   | 3   | 4    | 4    | 3    |      | 4    |      |      | 5    | 2    | 1    | 3    | 4    | 3    | 4    | 2    | 1    | 4    | 4    | 4    | 3    | 3    |   |
| 194  | 2   | 4   | 5   | 2   | 3   | 4   | 4   | 5   | 1   | 3    | 1    | 5    | 3    | 3    | 2    | 4    | 3    | 4    | 4    | 5    | 4    | 4    | 2    | 4    | 3    | 4    | 4    | 2    | 3    | 3    |   |
| 195  | 5   | 1   | 4   | 1   | 4   | 4   | 3   | 5   | 3   | 3    | 3    | 4    | 3    | 4    | 2    | 3    | 3    | 2    | 4    | 4    | 5    | 3    | 3    | 3    | 5    | 2    | 2    | 1    | 5    | 4    |   |
| 196  | 4   | 3   | 1   | 1   | 1   | 2   |     | 1   |     |      |      |      |      |      |      |      | 4    | 5    | 1    | 4    |      | 3    | 5    | 3    | 4    | 4    | 5    | 4    | 4    | 3    |   |
| 197  | 5   | 5   | 4   | 2   | 3   | 3   |     | 1   |     |      |      |      |      | 3    |      |      |      | 4    |      | 3    |      | 4    | 3    | 3    | 5    | 3    | 5    | 5    | 3    | 3    |   |
| 198  | 2   | 5   | 3   | 2   | 3   | 2   |     | 4   | 3   | 3    |      |      |      |      |      |      | 1    | 4    | 3    | 3    | 3    | 3    | 3    | 4    | 4    | 4    | 3    | 4    | 3    | 3    |   |
| 199  | 3   | 2   | 3   | 5   | 3   | 5   |     | 2   | 4   | 3    |      |      |      |      |      |      | 3    | 3    | 4    | 3    | 4    | 3    | 4    | 5    | 4    | 5    | 4    | 3    | 3    | 4    |   |
| 200  | 5   | 2   | 2   | 2   | 1   | 3   | 2   | 5   | 4   | 3    | 4    | 4    | 5    | 5    | 4    | 3    | 2    | 4    | 2    | 4    | 3    | 3    | 4    | 4    | 3    | 3    | 4    | 4    | 4    | 4    |   |

| Resp | PQ1 | PQ2 | PQ3 | PQ4 | PQ5 | PQ6 | PQ7 | PQ8 | PQ9 | PQ10 | PQ11 | PQ12 | PQ13 | PQ14 | PQ15 | PQ16 | PQ17 | PQ18 | PQ19 | PQ20 | PQ21 | PQ22 | PQ23 | PQ24 | PQ25 | PQ26 | PQ27 | PQ28 | PQ29 | PQ30 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 201  | 3   | 3   | 2   | 3   | 1   | 3   | 4   | 2   | 3   | 3    | 1    | 1    | 2    | 3    | 4    | 2    | 3    | 4    | 2    | 4    | 3    | 3    | 3    | 3    | 2    | 2    | 2    | 3    | 3    | 4    |
| 202  | 3   | 3   | 1   | 5   | 5   | 4   |     | 1   | 3   | 2    |      | 3    |      | 4    |      | 3    | 3    | 4    | 3    | 3    | 5    | 3    | 3    | 4    | 3    | 1    | 2    | 2    | 3    | 3    |
| 203  | 3   | 2   | 3   | 1   | 1   | 3   |     | 1   | 1   | 4    |      |      |      |      |      |      |      | 4    |      |      |      |      | 3    | 4    | 4    | 4    | 4    | 4    | 4    | 4    |
| 204  | 5   | 1   | 2   | 5   | 3   | 5   |     | 3   | 2   | 3    |      | 3    |      | 3    |      |      | 4    | 2    | 4    | 3    | 3    | 3    | 5    | 5    | 3    | 3    | 4    | 3    | 3    | 4    |
| 205  |     | 3   | 3   | 2   | 5   | 3   | 2   | 4   | 3   | 3    |      |      |      | 3    |      | 2    | 2    | 2    | 4    | 1    |      | 4    | 3    | 4    | 5    | 2    | 3    | 3    | 3    | 3    |
| 206  |     | 5   | 2   | 2   | 2   | 3   |     | 3   | 3   |      |      |      |      | 3    |      | 2    | 4    | 5    | 1    |      |      | 4    |      | 2    | 3    |      | 2    | 2    | 4    | 2    |
| 207  | 5   | 4   | 2   | 2   | 2   | 2   | 3   | 1   | 1   | 3    |      |      |      | 4    |      | 3    | 2    | 3    |      |      |      | 3    | 3    |      | 3    | 3    | 4    | 2    | 3    | 3    |
| 208  |     | 5   | 2   | 2   | 2   | 3   |     | 5   | 5   | 3    | 4    | 2    | 3    | 2    | 3    | 3    | 1    | 2    | 4    | 2    | 5    | 3    | 3    | 3    | 3    | 4    | 4    | 3    | 3    | 4    |
| 209  | 2   | 3   | 1   | 1   | 1   | 2   | 1   | 2   | 3   | 4    | 2    | 4    | 2    | 4    | 4    | 3    | 3    | 4    | 4    | 3    | 4    | 3    | 2    | 3    | 5    | 1    | 4    | 2    | 4    | 3    |
| 210  | 4   | 1   | 3   | 4   |     | 3   |     | 2   | 3   | 3    | 2    | 2    | 3    | 5    | 4    | 3    | 5    | 2    | 3    | 5    | 4    | 4    | 4    | 4    | 3    | 4    | 2    |      | 3    | 4    |
| 211  | 4   | 4   | 5   | 5   | 5   | 3   | 2   | 3   | 3   | 3    |      |      |      |      |      | 2    | 3    | 4    | 3    | 5    | 4    | 4    | 5    | 5    | 3    | 2    | 4    | 5    | 4    | 3    |
| 212  | 3   | 3   | 3   | 2   | 2   | 3   | 2   | 2   | 3   | 3    | 3    | 4    | 4    | 5    | 3    | 3    | 2    | 3    | 4    | 3    | 4    | 4    | 4    | 4    | 3    | 3    | 2    | 3    | 3    | 3    |
| 213  | 3   | 2   | 2   | 2   | 2   | 3   | 2   | 3   | 5   | 5    | 4    | 4    | 3    | 4    | 3    | 2    | 3    | 2    | 3    | 3    | 5    | 5    | 4    | 3    | 2    | 3    | 4    | 4    | 3    | 4    |
| 214  | 3   | 5   | 2   |     |     | 3   |     | 2   | 3   | 3    | 3    | 4    | 3    | 4    | 3    | 2    | 2    | 2    | 4    | 4    | 3    | 4    | 3    | 4    | 3    | 4    | 5    | 4    | 4    | 4    |
| 215  | 4   | 5   | 1   | 2   | 2   |     |     | 2   | 3   | 3    | 3    | 4    | 4    | 4    | 3    | 5    | 5    | 4    | 3    | 3    |      | 3    | 5    | 3    | 2    | 4    | 5    | 2    | 2    | 2    |
| 216  | 4   | 3   | 2   | 2   | 2   | 3   | 3   | 2   | 1   | 3    |      |      |      |      |      | 2    | 3    | 5    | 4    | 4    | 3    | 4    | 4    | 3    | 4    | 4    | 3    | 4    | 3    | 3    |
| 217  | 4   | 2   | 4   | 3   | 3   | 3   | 3   | 2   | 1   | 3    | 2    | 1    | 1    | 1    | 3    | 1    | 1    | 2    | 4    | 3    | 3    | 3    | 4    | 3    | 5    | 4    | 4    | 3    | 3    | 4    |
| 218  | 2   | 2   | 4   | 3   | 3   | 3   |     | 4   | 3   | 2    |      |      |      | 4    |      | 2    | 4    | 3    | 4    | 4    | 3    | 3    | 3    | 4    | 5    | 4    | 5    | 4    | 4    | 3    |
| 219  | 3   | 2   | 2   | 1   | 3   | 3   |     | 3   | 3   | 3    |      |      |      |      | 3    |      | 5    | 1    |      |      |      | 3    | 4    | 4    | 4    | 4    | 5    | 5    | 3    | 5    |
| 220  | 3   | 2   | 2   | 3   | 4   | 4   | 5   | 2   | 5   | 3    |      |      |      |      |      |      | 4    | 2    | 2    | 2    | 4    | 4    | 3    | 5    | 4    | 2    | 2    | 3    | 3    | 4    |
| 221  | 4   | 2   | 4   | 2   | 2   |     |     | 2   | 1   |      |      |      |      |      |      |      | 3    | 3    | 4    | 5    | 3    | 3    | 3    | 3    | 2    | 4    | 4    | 4    | 4    | 3    |
| 222  | 4   | 3   | 1   | 2   | 2   | 3   | 4   | 3   | 3   | 3    | 3    | 2    | 3    | 4    | 3    | 4    | 3    | 5    | 5    | 3    | 4    | 3    | 4    | 4    | 3    | 5    | 4    | 3    | 3    | 2    |
| 223  | 3   | 3   | 4   | 2   | 4   | 3   |     | 3   | 2   | 3    |      |      |      |      | 2    | 3    | 2    | 4    | 5    | 5    | 5    | 3    | 3    | 5    | 3    | 2    | 2    | 4    | 4    | 4    |
| 224  | 4   | 4   | 4   | 3   | 4   | 4   | 4   | 2   | 2   | 3    | 4    | 2    | 4    | 3    | 2    | 2    | 3    | 5    | 4    | 3    | 4    | 3    | 3    | 5    | 4    | 4    | 5    | 4    | 4    | 3    |
| 225  | 3   | 5   | 4   | 5   | 3   | 3   | 2   | 2   | 1   | 3    | 4    | 3    | 3    | 3    | 2    | 2    | 1    | 4    | 3    | 4    | 4    | 4    | 4    | 3    | 3    | 3    | 2    | 4    | 4    | 5    |
| 226  | 4   | 3   | 5   |     | 2   | 3   | 2   | 2   | 2   | 3    |      |      |      |      | 3    | 2    | 1    | 1    | 1    | 2    | 4    | 4    | 3    | 3    | 3    | 4    | 5    | 5    | 3    | 3    |
| 227  | 2   | 4   | 2   | 1   | 2   | 3   | 2   | 4   | 4   | 4    | 3    | 3    | 3    | 2    | 4    | 4    | 5    | 4    | 4    | 4    | 4    | 3    | 4    | 2    | 1    | 4    | 2    | 1    | 3    | 4    |
| 228  |     | 4   | 3   | 2   | 2   |     |     | 4   | 4   | 4    |      |      |      | 4    |      | 3    | 3    | 2    | 5    | 3    | 3    | 3    | 3    | 4    | 3    | 3    | 4    | 4    | 5    | 2    |
| 229  |     | 2   | 3   | 2   | 2   |     |     | 3   | 3   | 4    |      | 2    |      | 4    |      | 2    | 5    | 5    | 3    | 4    | 3    | 3    | 3    | 4    | 3    | 4    | 2    | 4    | 3    | 5    |
| 230  | 4   | 3   | 5   | 4   | 3   | 5   |     | 2   | 2   | 3    |      |      |      |      |      | 3    | 3    | 1    | 1    |      |      | 4    | 2    | 3    | 4    | 5    | 4    | 3    | 3    | 2    |
| 231  | 2   | 2   | 1   | 1   | 3   | 3   | 2   | 3   | 5   | 3    | 2    | 3    | 4    | 2    | 3    | 3    | 5    | 3    | 3    | 3    | 3    | 3    | 3    | 2    | 3    | 4    | 5    | 3    | 3    | 3    |
| 232  | 3   | 3   | 2   | 3   | 2   | 3   | 2   | 2   | 2   | 3    | 1    | 3    | 4    | 1    | 3    | 3    | 4    | 2    | 3    | 3    | 4    | 3    | 4    | 4    | 4    | 1    | 2    | 4    | 4    | 5    |
| 233  |     | 3   | 2   | 3   | 2   | 3   |     | 2   | 2   |      |      |      |      | 3    |      | 2    | 3    | 4    | 3    | 5    | 3    | 3    | 3    | 4    | 4    | 2    | 4    | 3    | 3    | 3    |
| 234  | 4   | 2   | 2   | 2   | 2   | 3   | 3   | 2   | 1   | 3    |      |      |      |      |      |      | 2    | 5    | 4    | 3    | 5    | 3    | 3    | 5    | 5    | 5    | 5    | 3    | 3    | 3    |
| 235  | 4   | 3   | 4   | 3   | 3   | 5   | 3   | 4   | 2   | 3    |      |      |      | 3    |      | 2    | 4    | 3    | 3    | 3    | 4    | 4    | 4    | 4    | 4    | 4    | 5    | 4    | 4    | 5    |
| 236  |     | 4   | 4   | 3   | 3   | 5   | 2   | 3   | 5   | 4    |      |      | 4    | 4    | 3    | 3    | 2    | 4    | 4    | 3    | 3    | 3    | 4    | 3    | 5    | 4    | 4    | 4    | 3    | 3    |
| 237  | 4   | 3   | 4   | 3   | 3   | 3   | 3   | 3   | 3   | 2    | 3    | 2    | 4    | 4    | 4    | 5    | 4    | 4    | 5    | 3    | 4    | 3    | 5    | 3    | 3    | 4    | 3    | 3    | 3    | 3    |
| 238  | 3   | 4   | 2   | 2   | 4   | 3   | 2   | 2   | 2   | 3    | 2    | 3    | 4    | 3    | 3    | 3    | 1    | 2    | 2    | 4    | 5    | 4    | 4    | 3    | 2    | 3    | 3    | 3    | 4    | 2    |
| 239  | 3   | 2   | 4   | 3   | 3   | 3   | 2   | 2   | 2   | 3    |      |      |      | 3    |      | 3    | 4    | 4    | 4    | 4    | 3    | 3    | 4    | 3    | 4    | 2    | 4    | 4    | 5    | 3    |
| 240  | 4   | 3   | 3   | 1   | 3   | 3   | 4   | 2   | 4   | 3    | 1    | 2    | 2    | 2    | 3    | 3    | 1    | 1    | 4    | 2    | 3    | 4    | 3    | 2    | 2    | 4    | 2    | 1    | 2    | 2    |
| 241  |     | 3   | 2   | 2   | 4   | 5   | 4   | 2   | 2   | 3    |      |      |      |      |      |      | 2    | 5    |      | 4    | 4    | 3    | 3    | 4    | 5    | 1    | 2    | 4    | 3    | 3    |
| 242  | 3   | 3   | 3   | 2   | 3   | 3   |     | 3   | 2   | 3    |      |      |      |      |      |      | 3    | 4    |      | 3    | 3    | 4    | 4    | 4    | 5    | 2    | 3    | 4    | 3    | 3    |
| 243  | 4   | 3   | 1   | 2   | 4   | 5   | 5   | 2   | 4   | 5    | 3    | 2    | 2    | 2    | 1    | 1    | 1    | 3    | 2    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 3    | 3    |
| 244  |     | 2   |     | 1   | 4   | 3   |     | 3   | 3   |      |      |      |      | 3    |      |      | 4    | 5    |      | 4    | 3    | 3    | 4    | 5    | 4    | 3    | 4    | 3    | 3    | 4    |
| 245  | 2   | 3   | 2   | 2   | 2   | 3   | 3   | 1   | 2   | 3    |      |      |      |      |      |      | 3    | 5    | 5    | 3    | 4    | 3    | 2    | 4    | 4    | 4    | 4    | 4    | 4    | 5    |
| 246  |     | 3   | 1   | 2   | 2   | 3   |     | 3   | 5   |      | 2    | 4    |      |      |      |      |      | 4    | 3    | 4    | 5    | 4    | 3    |      | 1    |      | 4    | 5    | 3    |      |
| 247  |     | 2   | 5   |     | 3   | 3   | 3   | 1   | 3   | 3    |      |      |      | 4    |      | 3    | 3    | 2    | 3    | 2    | 4    | 3    | 4    | 3    | 5    | 4    | 4    | 4    | 3    | 4    |
| 248  | 4   | 2   | 2   | 2   | 3   | 3   | 3   | 2   | 2   | 3    | 3    | 2    | 4    | 3    | 4    | 5    | 4    | 4    | 5    | 3    | 3    | 4    | 3    | 5    | 4    | 2    | 4    | 2    | 4    | 3    |
| 249  |     | 2   | 5   | 4   | 3   | 5   |     | 2   | 2   | 3    |      |      |      | 3    |      |      | 1    | 4    | 3    | 3    | 4    | 3    | 3    | 4    | 2    | 4    | 2    | 3    | 3    | 3    |
| 250  | 3   | 2   | 2   | 2   | 2   | 3   | 2   | 3   | 4   | 4    | 3    |      |      | 3    |      | 3    | 4    | 4    | 3    | 3    | 3    | 4    | 4    |      | 3    | 4    | 5    | 3    | 5    | 4    |

| Resp | PQ1 | PQ2 | PQ3 | PQ4 | PQ5 | PQ6 | PQ7 | PQ8 | PQ9 | PQ10 | PQ11 | PQ12 | PQ13 | PQ14 | PQ15 | PQ16 | PQ17 | PQ18 | PQ19 | PQ20 | PQ21 | PQ22 | PQ23 | PQ24 | PQ25 | PQ26 | PQ27 | PQ28 | PQ29 | PQ30 |   |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|
| 251  | 3   | 4   | 2   | 2   | 2   | 3   | 2   | 3   | 2   | 3    | 2    | 2    | 2    | 2    | 1    | 1    | 1    | 2    | 3    | 4    | 4    | 3    | 2    | 2    | 3    | 1    | 3    | 3    | 4    | 4    |   |
| 252  | 4   | 4   | 5   | 4   | 2   | 3   |     | 3   | 2   | 4    |      | 3    | 2    | 3    | 3    | 5    | 3    | 4    | 2    | 1    | 1    | 4    | 1    | 4    | 5    | 4    | 4    | 4    | 4    | 3    |   |
| 253  | 4   | 4   | 5   | 3   | 5   | 5   | 5   | 2   | 2   | 3    | 3    | 3    | 2    | 3    | 3    | 2    | 3    | 1    | 2    | 3    | 4    | 3    | 3    | 3    | 3    | 4    | 5    | 1    | 4    | 5    |   |
| 254  |     | 2   | 5   |     | 3   | 3   | 3   | 2   | 2   | 3    | 3    | 3    | 4    | 4    | 3    | 3    | 3    | 4    | 4    | 4    | 2    | 3    | 3    | 4    | 4    | 3    | 5    | 4    | 3    | 3    |   |
| 255  | 3   | 2   | 5   | 5   | 2   | 3   | 3   | 2   | 3   |      |      |      |      | 3    |      |      |      |      |      | 4    | 3    | 4    | 4    | 4    | 4    | 4    | 5    | 4    | 4    | 3    |   |
| 256  | 2   | 4   | 5   | 3   | 3   | 3   |     | 3   | 3   | 3    |      |      |      | 4    |      |      | 2    | 2    | 3    | 3    | 4    | 4    | 4    | 4    | 3    | 5    | 5    | 4    | 3    | 5    |   |
| 257  | 4   | 4   | 2   | 3   | 2   | 3   |     | 2   | 2   |      |      |      |      | 3    |      |      |      | 5    | 3    | 3    | 4    | 3    |      | 4    | 3    | 4    | 4    | 3    | 3    | 3    |   |
| 258  | 4   | 4   | 1   | 1   | 2   | 3   | 3   | 4   | 2   | 3    | 2    | 3    | 2    | 4    | 3    | 2    | 2    | 4    | 3    | 4    | 4    | 3    | 5    | 5    | 5    | 2    | 4    | 4    | 5    | 3    |   |
| 259  | 3   | 2   | 2   | 3   | 2   | 3   | 3   | 4   | 4   | 3    | 3    | 3    | 4    | 2    | 3    | 2    | 4    | 5    | 5    | 5    | 5    | 5    | 3    | 4    | 5    | 4    | 4    | 3    | 3    | 4    |   |
| 260  |     | 5   | 4   |     | 3   | 3   |     | 2   | 4   | 4    |      |      |      | 4    | 5    | 4    | 3    | 5    | 4    | 2    | 3    | 5    | 3    | 3    | 4    | 4    | 4    | 3    | 4    | 4    | 3 |
| 261  | 3   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 2   | 3    | 3    | 3    | 3    | 3    | 1    | 1    | 1    | 1    | 4    | 3    | 2    | 3    | 4    | 3    | 2    | 2    | 4    | 5    | 4    | 3    |   |
| 262  | 4   |     | 4   | 3   | 3   | 3   |     | 2   | 4   | 3    | 2    |      |      | 2    | 4    |      |      |      | 4    | 4    | 4    | 3    | 3    | 3    | 4    | 4    | 2    | 2    | 3    | 4    |   |
| 263  | 4   | 4   | 4   | 4   |     | 5   |     | 3   | 4   | 4    |      | 3    |      | 3    |      |      | 5    | 3    | 3    | 4    | 3    | 4    | 3    | 3    | 2    | 5    | 4    | 4    | 3    | 2    |   |
| 264  | 2   | 4   | 2   | 2   | 3   | 5   | 2   | 4   | 2   | 3    |      | 3    |      | 3    |      |      |      | 5    | 4    | 2    | 4    | 3    | 4    | 4    | 4    | 1    | 3    | 1    | 5    | 3    |   |
| 265  | 4   | 2   | 2   | 2   | 2   | 3   | 2   | 4   | 5   | 5    | 3    | 2    | 3    | 2    | 1    | 1    | 5    | 2    | 3    | 5    | 3    | 3    | 5    | 5    | 4    | 4    | 5    | 4    | 3    | 3    |   |
| 266  | 4   | 4   | 2   | 2   | 2   | 3   | 2   | 3   | 4   | 4    | 3    | 3    | 3    | 3    | 3    | 2    | 1    | 2    | 1    | 4    | 4    | 3    | 4    | 4    | 3    | 2    | 2    | 4    | 3    | 4    |   |
| 267  | 3   | 3   | 2   | 2   | 3   | 3   | 3   | 1   | 2   | 3    | 3    | 2    | 3    | 2    | 4    | 2    | 5    | 2    | 4    | 4    | 3    | 4    | 3    | 3    | 5    | 4    | 5    | 2    | 3    | 4    |   |
| 268  |     | 3   | 5   |     | 3   | 5   | 3   | 1   | 3   |      |      |      |      | 4    |      |      | 1    | 4    | 4    | 4    | 3    | 5    | 4    | 3    | 3    | 4    | 5    | 4    | 3    | 2    |   |
| 269  |     | 2   | 5   | 3   | 2   | 3   | 3   | 5   | 5   |      |      | 2    | 4    | 4    |      |      | 4    | 3    | 3    | 3    | 3    | 3    | 4    | 4    | 3    | 4    | 3    | 4    | 3    | 3    |   |
| 270  | 3   | 2   | 5   | 3   | 2   | 3   |     | 3   | 4   | 4    |      |      |      | 4    |      |      | 5    | 3    | 3    | 4    | 3    | 3    | 3    | 3    | 3    | 4    | 4    | 4    | 3    | 5    |   |
| 271  | 4   | 2   | 2   | 2   | 2   | 3   |     | 1   | 3   |      | 3    |      |      | 3    |      |      | 3    | 3    | 5    | 3    | 3    | 3    | 4    | 4    | 5    | 4    | 4    | 3    | 4    | 3    |   |
| 272  | 2   | 2   | 5   |     | 3   | 5   |     | 1   | 2   |      |      |      |      | 3    |      |      | 4    | 3    | 4    | 3    | 4    | 4    | 4    | 3    | 4    | 2    | 4    | 4    | 3    | 2    |   |
| 273  | 4   | 2   | 3   | 3   | 3   | 3   |     | 3   | 3   | 3    |      | 2    | 2    | 2    | 3    | 3    | 4    | 5    | 3    | 5    | 4    | 3    | 3    | 5    | 4    | 2    | 2    | 4    | 4    | 3    |   |
| 274  |     | 4   | 3   | 2   | 2   | 3   | 3   | 2   | 3   | 3    |      | 3    | 4    | 3    | 3    | 2    | 4    | 4    | 3    | 3    | 3    | 4    | 4    | 3    | 3    | 4    | 4    | 1    | 3    | 3    |   |
| 275  | 4   | 5   | 1   | 2   | 3   | 3   | 3   | 2   | 2   | 2    | 2    | 2    | 4    | 5    | 3    | 2    | 5    | 3    | 2    | 3    | 4    | 3    | 3    | 3    | 3    | 4    | 4    | 4    | 3    | 5    |   |
| 276  | 4   | 3   | 4   | 2   | 4   | 3   |     | 1   | 3   | 3    |      | 4    | 4    |      |      |      | 4    | 5    | 4    | 5    | 4    | 4    | 2    | 3    | 2    | 5    | 2    | 2    | 4    | 3    |   |
| 277  | 3   |     | 1   | 2   | 3   | 3   | 2   | 3   | 3   | 3    |      |      |      |      |      |      | 4    | 2    | 3    | 4    | 3    | 3    | 4    | 5    | 3    | 4    | 5    | 4    | 4    |      |   |
| 278  | 3   | 2   | 3   | 3   | 4   | 3   |     | 2   | 2   | 3    |      |      |      |      |      |      | 3    | 4    | 5    | 3    | 5    | 4    | 4    | 5    | 3    | 4    | 4    | 3    | 3    | 5    |   |
| 279  | 3   | 2   | 3   | 3   | 3   | 3   | 2   | 5   | 2   | 4    | 1    | 1    | 1    | 1    | 1    | 1    | 2    | 2    | 3    | 4    | 4    | 4    | 4    | 4    | 4    | 4    | 5    | 3    | 4    | 3    |   |
| 280  | 3   | 2   | 2   | 2   | 3   | 3   |     | 3   | 2   | 3    |      |      |      | 3    |      |      | 3    | 5    | 3    | 4    |      | 3    |      | 3    | 5    | 2    | 3    | 4    | 3    | 2    |   |
| 281  | 4   | 4   | 2   | 2   | 2   | 5   | 4   | 4   | 3   | 4    |      |      |      | 4    |      |      | 3    | 3    | 3    | 3    | 2    | 4    | 4    | 4    | 3    | 4    | 4    | 3    | 4    |      |   |
| 282  | 3   | 5   | 4   | 2   | 4   | 3   | 3   | 2   | 2   | 3    | 2    | 2    | 2    | 2    | 3    | 3    | 4    | 1    | 1    | 4    | 4    | 3    | 3    | 5    | 4    | 4    | 2    | 3    | 3    | 3    |   |
| 283  | 4   | 4   | 3   | 2   | 3   | 3   |     | 3   | 2   | 3    |      | 4    | 2    | 4    | 1    | 1    | 1    | 3    | 2    | 3    | 4    | 4    | 3    | 4    | 4    | 3    | 4    | 4    | 4    | 3    |   |
| 284  |     | 2   | 4   | 3   |     |     |     | 3   | 3   |      |      |      |      | 3    |      |      | 4    | 3    | 5    | 4    | 2    | 3    | 4    | 3    | 3    | 5    | 3    | 1    | 5    | 3    |   |
| 285  | 4   | 4   | 2   | 2   | 3   | 3   |     | 2   | 3   | 3    | 2    | 3    | 2    | 2    |      | 3    | 2    | 4    | 4    | 5    |      | 3    |      | 3    | 2    | 5    | 4    | 4    | 3    |      |   |
| 286  | 2   | 5   | 2   | 2   | 2   | 3   |     |     | 5   | 5    |      |      |      | 3    |      | 3    | 3    | 2    | 3    | 5    | 5    | 5    | 5    | 4    | 3    | 3    | 2    | 2    | 5    | 3    |   |
| 287  | 4   | 4   | 1   | 2   | 2   | 3   |     | 2   | 2   |      |      |      |      | 3    |      | 2    | 4    | 5    | 3    | 4    | 3    | 4    | 3    |      | 2    |      |      |      | 3    |      |   |
| 288  | 3   | 2   | 2   | 2   | 4   | 5   | 5   | 3   | 4   | 4    | 3    | 3    | 2    | 4    | 3    | 2    | 2    | 2    | 3    | 3    | 3    | 4    | 3    | 4    | 3    | 3    | 2    | 3    | 3    | 2    | 2 |
| 289  | 3   | 2   | 4   |     | 2   | 3   |     | 3   | 3   | 3    |      | 3    | 4    | 5    | 1    | 2    | 2    | 3    | 2    | 5    | 3    | 3    | 4    | 5    | 3    | 4    | 4    | 4    | 3    | 4    |   |
| 290  | 3   | 5   | 3   |     | 2   | 3   |     | 5   | 3   | 3    | 1    | 1    | 1    | 3    | 3    | 3    | 4    | 4    | 4    | 3    | 4    | 4    | 4    | 4    | 5    | 4    | 5    | 5    | 5    | 5    |   |
| 291  | 3   | 4   | 2   | 3   | 2   | 3   |     | 2   | 2   | 2    |      |      |      |      |      |      | 3    | 2    | 4    | 3    | 2    | 2    | 3    | 5    | 5    | 4    | 4    | 4    | 3    | 4    |   |
| 292  | 3   | 4   | 2   | 3   | 2   | 3   |     | 4   |     |      |      |      |      | 4    |      | 2    | 5    | 3    | 3    | 4    | 4    | 3    | 3    | 5    | 5    | 2    | 3    | 2    | 3    | 3    |   |
| 293  | 4   | 4   | 4   | 3   | 3   | 3   | 3   | 2   | 3   | 3    | 3    | 2    | 2    | 3    | 3    | 3    | 3    | 4    | 4    | 2    | 3    | 3    | 5    | 3    | 3    | 5    | 3    | 4    | 3    | 2    |   |
| 294  | 4   | 4   | 3   | 3   | 3   | 3   | 3   | 4   | 4   | 4    | 2    | 3    | 3    | 3    | 1    | 1    | 1    | 3    | 3    | 2    | 5    | 4    | 3    | 5    | 5    | 2    | 5    | 4    | 5    | 3    |   |
| 295  | 4   | 2   | 2   | 2   | 3   | 5   |     | 2   | 5   | 4    | 4    | 2    | 3    | 2    |      | 2    | 2    | 5    | 2    | 3    | 2    | 4    | 4    | 4    | 4    | 3    | 5    | 4    | 3    | 4    |   |
| 296  | 2   | 2   | 2   | 2   | 2   | 3   | 3   | 3   | 2   |      |      |      |      | 4    |      |      |      | 4    | 5    | 4    | 3    | 3    | 3    | 5    | 2    | 4    | 1    | 3    | 5    |      |   |
| 297  | 3   | 4   | 2   | 4   | 4   | 5   |     | 3   | 5   | 4    | 3    | 3    | 3    | 5    | 4    | 2    | 1    | 1    | 3    | 3    | 3    | 3    | 5    | 3    | 3    | 4    | 5    | 3    | 5    | 5    |   |
| 298  | 4   | 2   | 3   |     | 2   | 3   |     |     | 5   |      |      |      |      |      |      | 3    | 5    | 3    | 4    | 3    | 5    | 5    | 5    | 5    | 5    | 5    | 3    | 2    | 2    | 3    | 4 |
| 299  | 3   | 3   | 1   | 2   | 3   | 3   | 3   | 3   | 3   | 5    | 1    | 2    | 1    | 1    | 1    | 1    | 2    | 2    | 1    | 3    | 4    | 4    | 3    | 3    | 4    | 5    | 3    | 3    | 2    | 2    |   |
| 300  | 3   | 3   | 2   | 2   | 3   | 3   | 4   | 3   | 3   | 3    | 3    | 4    | 2    | 2    | 2    | 1    | 2    | 2    | 5    | 4    | 2    | 5    | 4    | 4    | 3    | 2    | 2    | 5    | 5    | 3    | 2 |

Bagian 1: Data *Switching Cost*

| Resp | SC1 | SC2 | SC3 | SC4 | SC5 | SC6 | SC7 | SC8 | SC9 | SC10 | SC11 | SC12 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| 1    | 3   | 2   | 2   | 2   | 2   | 2   | 2   | 3   | 4   | 2    | 2    | 3    |
| 2    | 4   | 3   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 1    | 3    | 1    |
| 3    | 4   | 4   | 3   | 3   | 4   | 2   | 2   | 2   | 3   | 3    | 4    | 2    |
| 4    | 4   | 4   | 3   | 3   | 3   | 2   | 3   | 4   | 2   | 2    | 4    | 3    |
| 5    | 3   | 4   | 4   | 4   | 3   | 2   | 2   | 2   | 2   | 1    | 5    | 1    |
| 6    | 5   | 2   | 1   | 5   | 2   | 4   | 1   | 2   | 3   | 1    | 4    | 1    |
| 7    | 2   | 4   | 5   | 1   | 3   | 1   | 5   | 1   | 2   | 4    | 5    | 5    |
| 8    | 2   | 2   | 2   | 3   | 2   | 4   | 3   | 4   | 5   | 4    | 1    | 4    |
| 9    | 4   | 5   | 3   | 3   | 2   | 2   | 3   | 1   | 1   | 1    | 2    | 1    |
| 10   | 3   | 3   | 2   | 2   | 4   | 3   | 3   | 4   | 4   | 3    | 2    | 2    |
| 11   | 3   | 4   | 3   | 4   | 2   | 4   | 3   | 4   | 3   | 1    | 4    | 3    |
| 12   | 1   | 1   | 1   | 2   | 3   | 1   | 1   | 2   | 2   | 3    | 1    | 5    |
| 13   | 4   | 4   | 3   | 2   | 2   | 2   | 2   | 2   | 2   | 2    | 2    | 2    |
| 14   | 3   | 3   | 3   | 3   | 4   | 2   | 2   | 3   | 2   | 3    | 4    | 3    |
| 15   | 3   | 3   | 4   | 4   | 3   | 4   | 3   | 2   | 2   | 3    | 4    | 3    |
| 16   | 3   | 4   | 2   | 3   | 4   | 3   | 3   | 3   | 3   | 3    | 2    | 3    |
| 17   | 4   | 3   | 2   | 2   | 2   | 2   | 4   | 4   | 4   | 4    | 4    | 4    |
| 18   | 4   | 4   | 4   | 3   | 4   | 3   | 2   | 2   | 2   | 2    | 3    | 3    |
| 19   | 4   | 2   | 1   | 3   | 2   | 3   | 4   | 3   | 4   | 2    | 3    | 4    |
| 20   | 3   | 3   | 2   | 2   | 3   | 3   | 3   | 3   | 3   | 2    | 2    | 3    |
| 21   | 4   | 4   | 3   | 3   | 3   | 1   | 1   | 1   | 1   | 2    | 3    | 3    |
| 22   | 3   | 3   | 3   | 3   | 3   | 2   | 2   | 2   | 2   | 3    | 3    | 3    |
| 23   | 4   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2    | 4    | 2    |
| 24   | 3   | 3   | 2   | 3   | 3   | 2   | 2   | 2   | 2   | 2    | 2    | 2    |
| 25   | 1   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 1   | 1    | 1    | 1    |
| 26   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3    | 3    | 3    |
| 27   | 3   | 3   | 3   | 3   | 4   | 3   | 2   | 3   | 3   | 3    | 3    | 3    |
| 28   | 2   | 3   | 2   | 3   | 3   | 3   | 3   | 3   | 3   | 3    | 2    | 3    |
| 29   | 2   | 2   | 2   | 2   | 1   | 4   | 4   | 5   | 4   | 5    | 2    | 5    |
| 30   | 3   | 3   | 3   | 4   | 2   | 2   | 2   | 3   | 3   | 2    | 2    | 3    |
| 31   | 5   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 2    | 4    | 2    |
| 32   | 3   | 3   | 3   | 4   | 3   | 3   | 3   | 3   | 3   | 3    | 3    | 3    |
| 33   | 1   | 5   | 5   | 5   | 2   | 5   | 5   | 4   | 5   | 2    | 1    | 3    |
| 34   | 3   | 2   | 1   | 3   | 2   | 2   | 3   | 3   | 2   | 2    | 2    | 2    |
| 35   | 3   | 3   | 4   | 3   | 2   | 4   | 3   | 2   | 3   | 3    | 3    | 4    |
| 36   | 3   | 3   | 2   | 2   | 3   | 2   | 3   | 3   | 2   | 3    | 4    | 2    |
| 37   | 2   | 3   | 4   | 4   | 3   | 5   | 5   | 4   | 3   | 4    | 4    | 3    |
| 38   | 2   | 3   | 3   | 4   | 5   | 4   | 4   | 4   | 3   | 5    | 5    | 4    |
| 39   | 4   | 3   | 4   | 3   | 3   | 2   | 2   | 2   | 2   | 2    | 2    | 2    |
| 40   | 1   | 3   | 4   | 4   | 4   | 3   | 3   | 3   | 3   | 2    | 2    | 2    |
| 41   | 2   | 3   | 4   | 4   | 4   | 3   | 3   | 3   | 3   | 2    | 2    | 2    |
| 42   | 3   | 4   | 4   | 3   | 3   | 3   | 3   | 3   | 3   | 4    | 4    | 4    |
| 43   | 3   | 3   | 1   | 1   | 3   | 2   | 2   | 3   | 2   | 2    | 2    | 3    |
| 44   | 4   | 3   | 3   | 3   | 2   | 3   | 3   | 3   | 3   | 2    | 4    | 4    |
| 45   | 3   | 4   | 4   | 3   | 3   | 4   | 4   | 3   | 3   | 3    | 4    | 3    |
| 46   | 4   | 4   | 2   | 3   | 2   | 3   | 3   | 3   | 3   | 2    | 2    | 2    |
| 47   | 4   | 4   | 3   | 4   | 2   | 3   | 3   | 3   | 3   | 3    | 3    | 3    |
| 48   | 4   | 4   | 4   | 2   | 3   | 2   | 2   | 3   | 3   | 1    | 2    | 3    |
| 49   | 3   | 4   | 3   | 3   | 2   | 3   | 2   | 4   | 2   | 3    | 2    | 1    |
| 50   | 1   | 3   | 2   | 3   | 3   | 3   | 3   | 3   | 2   | 2    | 2    | 4    |

| Resp | SC1 | SC2 | SC3 | SC4 | SC5 | SC6 | SC7 | SC8 | SC9 | SC10 | SC11 | SC12 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| 51   | 4   | 5   | 5   | 4   | 5   | 2   | 1   | 1   | 1   | 1    | 5    | 1    |
| 52   | 3   | 3   | 3   | 4   | 4   | 4   | 4   | 4   | 3   | 3    | 3    | 4    |
| 53   | 3   | 4   | 4   | 3   | 4   | 4   | 4   | 4   | 4   | 2    | 3    | 3    |
| 54   | 2   | 2   | 3   | 4   | 2   | 2   | 2   | 2   | 2   | 2    | 2    | 2    |
| 55   | 4   | 5   | 3   | 4   | 5   | 4   | 5   | 5   | 4   | 4    | 4    | 4    |
| 56   | 5   | 4   | 1   | 3   | 3   | 1   | 3   | 3   | 3   | 2    | 1    | 1    |
| 57   | 3   | 4   | 2   | 3   | 2   | 3   | 3   | 3   | 2   | 2    | 2    | 4    |
| 58   | 3   | 3   | 4   | 3   | 2   | 3   | 2   | 2   | 2   | 1    | 5    | 1    |
| 59   | 2   | 4   | 2   | 2   | 2   | 4   | 4   | 4   | 3   | 3    | 4    | 4    |
| 60   | 5   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 2   | 1    | 2    | 1    |
| 61   | 3   | 3   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2    | 3    | 2    |
| 62   | 4   | 3   | 4   | 3   | 3   | 2   | 2   | 2   | 3   | 2    | 3    | 2    |
| 63   | 3   | 2   | 2   | 2   | 3   | 3   | 3   | 4   | 4   | 3    | 2    | 4    |
| 64   | 4   | 3   | 2   | 2   | 2   | 2   | 3   | 2   | 2   | 2    | 4    | 2    |
| 65   | 3   | 4   | 3   | 3   | 2   | 2   | 2   | 2   | 3   | 2    | 3    | 2    |
| 66   | 3   | 3   | 3   | 3   | 3   | 2   | 2   | 2   | 2   | 2    | 4    | 3    |
| 67   | 2   | 2   | 1   | 3   | 3   | 2   | 2   | 3   | 3   | 1    | 3    | 2    |
| 68   | 3   | 4   | 5   | 5   | 5   | 4   | 5   | 4   | 4   | 4    | 2    | 2    |
| 69   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 2   | 3   | 2    | 4    | 2    |
| 70   | 4   | 4   | 4   | 2   | 2   | 2   | 2   | 2   | 2   | 3    | 3    | 3    |
| 71   | 5   | 3   | 2   | 2   | 3   | 3   | 2   | 2   | 2   | 2    | 2    | 2    |
| 72   | 2   | 4   | 2   | 3   | 3   | 2   | 2   | 4   | 1   | 2    | 4    | 2    |
| 73   | 4   | 4   | 3   | 2   | 2   | 2   | 2   | 2   | 2   | 4    | 4    | 2    |
| 74   | 4   | 3   | 3   | 4   | 4   | 4   | 4   | 4   | 4   | 5    | 3    | 3    |
| 75   | 3   | 3   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 2    | 2    | 3    |
| 76   | 3   | 3   | 4   | 3   | 2   | 4   | 4   | 4   | 3   | 4    | 4    | 3    |
| 77   | 3   | 2   | 2   | 3   | 2   | 3   | 3   | 3   | 2   | 2    | 2    | 3    |
| 78   | 3   | 4   | 5   | 4   | 4   | 3   | 4   | 4   | 4   | 4    | 3    | 4    |
| 79   | 3   | 4   | 4   | 4   | 4   | 3   | 4   | 3   | 3   | 3    | 2    | 4    |
| 80   | 4   | 3   | 2   | 2   | 2   | 2   | 2   | 2   | 3   | 1    | 4    | 2    |
| 81   | 3   | 4   | 4   | 2   | 2   | 3   | 3   | 3   | 2   | 3    | 3    | 3    |
| 82   | 5   | 5   | 5   | 5   | 5   | 5   | 3   | 4   | 4   | 5    | 3    | 2    |
| 83   | 2   | 4   | 3   | 2   | 4   | 4   | 3   | 4   | 4   | 3    | 3    | 3    |
| 84   | 5   | 3   | 4   | 3   | 3   | 3   | 3   | 3   | 2   | 2    | 4    | 2    |
| 85   | 1   | 3   | 3   | 2   | 1   | 3   | 3   | 3   | 3   | 1    | 3    | 3    |
| 86   | 3   | 3   | 3   | 4   | 2   | 3   | 3   | 3   | 3   | 3    | 3    | 3    |
| 87   | 4   | 4   | 3   | 1   | 1   | 1   | 1   | 1   | 1   | 1    | 1    | 1    |
| 88   | 4   | 2   | 2   | 2   | 4   | 2   | 2   | 2   | 1   | 1    | 4    | 2    |
| 89   | 5   | 5   | 4   | 2   | 4   | 1   | 1   | 2   | 2   | 2    | 2    | 1    |
| 90   | 3   | 4   | 3   | 2   | 3   | 3   | 4   | 3   | 4   | 3    | 3    | 3    |
| 91   | 2   | 4   | 3   | 4   | 4   | 2   | 1   | 2   | 2   | 1    | 4    | 2    |
| 92   | 3   | 2   | 2   | 4   | 2   | 3   | 3   | 3   | 3   | 3    | 2    | 3    |
| 93   | 5   | 3   | 2   | 3   | 2   | 3   | 4   | 4   | 3   | 1    | 2    | 1    |
| 94   | 3   | 3   | 3   | 3   | 4   | 3   | 3   | 3   | 3   | 2    | 2    | 3    |
| 95   | 4   | 4   | 4   | 3   | 3   | 2   | 3   | 2   | 2   | 1    | 3    | 3    |
| 96   | 1   | 1   | 1   | 1   | 1   | 2   | 2   | 2   | 2   | 1    | 1    | 3    |
| 97   | 4   | 4   | 4   | 4   | 4   | 2   | 2   | 2   | 2   | 2    | 4    | 2    |
| 98   | 3   | 3   | 3   | 4   | 3   | 4   | 4   | 4   | 3   | 3    | 3    | 3    |
| 99   | 4   | 3   | 2   | 3   | 3   | 3   | 4   | 3   | 2   | 2    | 2    | 2    |
| 100  | 3   | 2   | 1   | 2   | 3   | 2   | 2   | 2   | 2   | 2    | 4    | 2    |

| Resp | SC1 | SC2 | SC3 | SC4 | SC5 | SC6 | SC7 | SC8 | SC9 | SC10 | SC11 | SC12 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| 101  | 1   | 5   | 5   | 1   | 4   | 1   | 5   | 5   | 4   | 2    | 1    | 2    |
| 102  | 5   | 1   | 4   | 4   | 1   | 4   | 4   | 2   | 2   | 1    | 1    | 1    |
| 103  | 3   | 4   | 1   | 4   | 2   | 4   | 1   | 1   | 2   | 1    | 1    | 1    |
| 104  | 4   | 3   | 2   | 2   | 3   | 3   | 1   | 2   | 3   | 3    | 2    | 3    |
| 105  | 2   | 2   | 2   | 3   | 5   | 3   | 2   | 2   | 2   | 3    | 5    | 5    |
| 106  | 3   | 3   | 4   | 2   | 4   | 2   | 2   | 4   | 5   | 5    | 5    | 5    |
| 107  | 3   | 4   | 3   | 3   | 3   | 5   | 3   | 3   | 4   | 2    | 2    | 2    |
| 108  | 4   | 3   | 3   | 4   | 2   | 3   | 4   | 4   | 4   | 2    | 2    | 2    |
| 109  | 3   | 3   | 1   | 3   | 2   | 2   | 4   | 4   | 3   | 1    | 4    | 4    |
| 110  | 3   | 4   | 3   | 5   | 5   | 3   | 2   | 4   | 5   | 3    | 2    | 2    |
| 111  | 3   | 2   | 2   | 3   | 3   | 3   | 3   | 2   | 2   | 3    | 3    | 1    |
| 112  | 4   | 3   | 3   | 3   | 2   | 1   | 2   | 3   | 3   | 3    | 2    | 1    |
| 113  | 5   | 3   | 4   | 2   | 4   | 2   | 1   | 2   | 2   | 2    | 3    | 2    |
| 114  | 3   | 4   | 4   | 2   | 4   | 2   | 2   | 2   | 2   | 2    | 2    | 2    |
| 115  | 4   | 4   | 3   | 2   | 3   | 3   | 3   | 1   | 3   | 4    | 4    | 4    |
| 116  | 3   | 4   | 3   | 3   | 2   | 3   | 3   | 3   | 3   | 4    | 4    | 4    |
| 117  | 4   | 3   | 5   | 3   | 1   | 3   | 4   | 5   | 3   | 3    | 3    | 3    |
| 118  | 2   | 1   | 3   | 4   | 3   | 2   | 3   | 4   | 3   | 2    | 2    | 3    |
| 119  | 3   | 2   | 2   | 2   | 3   | 2   | 4   | 2   | 2   | 2    | 4    | 4    |
| 120  | 3   | 3   | 2   | 3   | 4   | 4   | 5   | 2   | 3   | 3    | 2    | 2    |
| 121  | 1   | 4   | 4   | 2   | 3   | 4   | 2   | 4   | 5   | 5    | 4    | 5    |
| 122  | 4   | 5   | 3   | 3   | 4   | 2   | 1   | 1   | 3   | 3    | 2    | 4    |
| 123  | 5   | 4   | 3   | 3   | 2   | 2   | 3   | 3   | 2   | 3    | 4    | 3    |
| 124  | 3   | 2   | 1   | 2   | 3   | 3   | 2   | 2   | 3   | 1    | 3    | 4    |
| 125  | 3   | 3   | 3   | 2   | 4   | 2   | 3   | 4   | 3   | 2    | 3    | 2    |
| 126  | 4   | 3   | 4   | 3   | 2   | 3   | 3   | 2   | 2   | 3    | 4    | 3    |
| 127  | 3   | 4   | 4   | 1   | 3   | 2   | 2   | 3   | 2   | 2    | 3    | 1    |
| 128  | 2   | 3   | 2   | 1   | 4   | 4   | 4   | 3   | 3   | 2    | 2    | 1    |
| 129  | 3   | 4   | 5   | 4   | 2   | 2   | 3   | 4   | 3   | 1    | 1    | 1    |
| 130  | 3   | 3   | 2   | 3   | 2   | 2   | 3   | 3   | 2   | 3    | 2    | 3    |
| 131  | 4   | 1   | 2   | 3   | 2   | 3   | 2   | 3   | 3   | 3    | 4    | 4    |
| 132  | 3   | 3   | 2   | 2   | 3   | 3   | 2   | 2   | 3   | 2    | 1    | 1    |
| 133  | 3   | 4   | 4   | 4   | 3   | 2   | 2   | 4   | 3   | 4    | 2    | 3    |
| 134  | 4   | 5   | 3   | 5   | 2   | 2   | 3   | 2   | 2   | 3    | 4    | 3    |
| 135  | 5   | 4   | 3   | 4   | 3   | 2   | 4   | 3   | 3   | 3    | 3    | 4    |
| 136  | 4   | 4   | 3   | 3   | 4   | 3   | 2   | 3   | 2   | 2    | 2    | 2    |
| 137  | 3   | 2   | 4   | 3   | 3   | 4   | 3   | 3   | 3   | 3    | 4    | 3    |
| 138  | 2   | 2   | 4   | 4   | 2   | 3   | 3   | 2   | 2   | 2    | 3    | 3    |
| 139  | 3   | 4   | 2   | 1   | 3   | 3   | 2   | 1   | 2   | 3    | 3    | 4    |
| 140  | 3   | 4   | 4   | 3   | 4   | 2   | 5   | 4   | 3   | 3    | 2    | 2    |
| 141  | 4   | 5   | 3   | 3   | 2   | 3   | 4   | 2   | 2   | 1    | 4    | 3    |
| 142  | 4   | 3   | 1   | 2   | 2   | 3   | 2   | 3   | 2   | 2    | 4    | 3    |
| 143  | 3   | 4   | 4   | 3   | 1   | 2   | 3   | 4   | 4   | 3    | 3    | 2    |
| 144  | 3   | 1   | 3   | 2   | 3   | 2   | 2   | 4   | 3   | 2    | 4    | 3    |
| 145  | 4   | 3   | 3   | 4   | 2   | 3   | 3   | 2   | 4   | 3    | 4    | 1    |
| 146  | 1   | 4   | 1   | 3   | 2   | 2   | 1   | 1   | 2   | 2    | 2    | 1    |
| 147  | 3   | 3   | 3   | 1   | 3   | 3   | 2   | 3   | 3   | 1    | 3    | 1    |
| 148  | 4   | 3   | 2   | 3   | 2   | 2   | 2   | 4   | 3   | 3    | 3    | 3    |
| 149  | 2   | 3   | 4   | 2   | 4   | 2   | 4   | 4   | 3   | 2    | 2    | 3    |
| 150  | 3   | 2   | 3   | 2   | 4   | 4   | 4   | 2   | 2   | 1    | 1    | 3    |

| Resp | SC1 | SC2 | SC3 | SC4 | SC5 | SC6 | SC7 | SC8 | SC9 | SC10 | SC11 | SC12 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| 151  | 3   | 4   | 3   | 4   | 2   | 5   | 2   | 2   | 2   | 2    | 2    | 2    |
| 152  | 5   | 2   | 5   | 3   | 3   | 4   | 3   | 4   | 3   | 2    | 2    | 1    |
| 153  | 3   | 3   | 2   | 3   | 2   | 3   | 3   | 3   | 3   | 3    | 3    | 1    |
| 154  | 3   | 4   | 3   | 1   | 2   | 3   | 2   | 4   | 2   | 2    | 2    | 2    |
| 155  | 4   | 3   | 4   | 3   | 2   | 2   | 2   | 3   | 3   | 2    | 2    | 2    |
| 156  | 3   | 4   | 4   | 2   | 2   | 3   | 4   | 4   | 3   | 3    | 2    | 1    |
| 157  | 2   | 3   | 4   | 2   | 5   | 4   | 3   | 2   | 2   | 4    | 3    | 3    |
| 158  | 4   | 3   | 2   | 2   | 3   | 4   | 3   | 2   | 2   | 1    | 3    | 3    |
| 159  | 1   | 4   | 2   | 4   | 2   | 4   | 2   | 3   | 3   | 3    | 3    | 1    |
| 160  | 3   | 4   | 1   | 3   | 2   | 3   | 5   | 5   | 4   | 3    | 2    | 2    |
| 161  | 3   | 3   | 3   | 1   | 3   | 2   | 4   | 3   | 3   | 3    | 3    | 2    |
| 162  | 4   | 2   | 2   | 3   | 2   | 1   | 2   | 1   | 2   | 2    | 3    | 1    |
| 163  | 4   | 4   | 4   | 2   | 1   | 2   | 2   | 3   | 3   | 2    | 3    | 2    |
| 164  | 3   | 3   | 3   | 3   | 4   | 2   | 2   | 2   | 2   | 1    | 1    | 3    |
| 165  | 5   | 4   | 2   | 3   | 3   | 2   | 4   | 2   | 2   | 2    | 2    | 3    |
| 166  | 4   | 5   | 4   | 3   | 2   | 3   | 1   | 1   | 3   | 2    | 2    | 2    |
| 167  | 3   | 4   | 3   | 3   | 2   | 4   | 1   | 1   | 2   | 2    | 2    | 3    |
| 168  | 3   | 4   | 2   | 4   | 4   | 3   | 4   | 3   | 2   | 5    | 5    | 3    |
| 169  | 3   | 4   | 3   | 3   | 2   | 3   | 3   | 4   | 3   | 2    | 2    | 1    |
| 170  | 1   | 3   | 2   | 3   | 3   | 2   | 3   | 2   | 2   | 2    | 4    | 3    |
| 171  | 4   | 2   | 5   | 3   | 2   | 2   | 3   | 2   | 3   | 3    | 4    | 4    |
| 172  | 5   | 3   | 5   | 5   | 3   | 3   | 2   | 5   | 2   | 3    | 4    | 4    |
| 173  | 2   | 2   | 3   | 1   | 4   | 1   | 4   | 3   | 3   | 2    | 4    | 1    |
| 174  | 4   | 3   | 2   | 3   | 3   | 3   | 3   | 2   | 3   | 1    | 4    | 3    |
| 175  | 4   | 4   | 3   | 4   | 2   | 3   | 3   | 2   | 2   | 3    | 2    | 3    |
| 176  | 3   | 5   | 2   | 3   | 5   | 4   | 2   | 3   | 4   | 4    | 4    | 3    |
| 177  | 3   | 3   | 3   | 3   | 2   | 3   | 3   | 3   | 3   | 3    | 3    | 3    |
| 178  | 3   | 3   | 4   | 3   | 3   | 2   | 3   | 4   | 4   | 3    | 2    | 1    |
| 179  | 2   | 4   | 2   | 2   | 4   | 5   | 5   | 3   | 3   | 2    | 3    | 3    |
| 180  | 3   | 4   | 3   | 2   | 2   | 2   | 3   | 2   | 3   | 1    | 4    | 3    |
| 181  | 3   | 3   | 2   | 3   | 3   | 3   | 3   | 2   | 2   | 2    | 3    | 2    |
| 182  | 4   | 3   | 2   | 4   | 1   | 3   | 1   | 1   | 4   | 2    | 3    | 2    |
| 183  | 5   | 4   | 1   | 2   | 2   | 4   | 2   | 4   | 4   | 1    | 1    | 1    |
| 184  | 3   | 3   | 3   | 3   | 2   | 2   | 3   | 2   | 3   | 2    | 4    | 3    |
| 185  | 3   | 2   | 3   | 3   | 3   | 3   | 4   | 4   | 1   | 3    | 2    | 3    |
| 186  | 1   | 3   | 4   | 3   | 3   | 2   | 3   | 2   | 3   | 2    | 2    | 3    |
| 187  | 4   | 4   | 3   | 2   | 4   | 2   | 3   | 2   | 3   | 4    | 4    | 3    |
| 188  | 2   | 4   | 3   | 3   | 4   | 2   | 3   | 3   | 2   | 2    | 4    | 1    |
| 189  | 3   | 1   | 4   | 2   | 2   | 4   | 2   | 3   | 3   | 2    | 1    | 1    |
| 190  | 3   | 3   | 2   | 4   | 3   | 3   | 3   | 4   | 2   | 3    | 2    | 3    |
| 191  | 4   | 3   | 3   | 3   | 3   | 3   | 4   | 4   | 3   | 3    | 3    | 3    |
| 192  | 4   | 5   | 2   | 2   | 3   | 3   | 3   | 2   | 2   | 1    | 1    | 1    |
| 193  | 4   | 2   | 4   | 3   | 2   | 2   | 1   | 1   | 2   | 1    | 2    | 3    |
| 194  | 3   | 4   | 2   | 3   | 2   | 2   | 3   | 3   | 4   | 3    | 3    | 3    |
| 195  | 5   | 3   | 5   | 4   | 4   | 3   | 3   | 2   | 3   | 3    | 3    | 3    |
| 196  | 3   | 4   | 3   | 2   | 2   | 3   | 2   | 4   | 3   | 2    | 2    | 2    |
| 197  | 4   | 3   | 4   | 3   | 3   | 3   | 2   | 4   | 4   | 4    | 3    | 2    |
| 198  | 3   | 3   | 4   | 3   | 5   | 4   | 5   | 2   | 2   | 2    | 3    | 2    |
| 199  | 1   | 3   | 2   | 3   | 5   | 1   | 3   | 1   | 2   | 3    | 3    | 3    |
| 200  | 4   | 3   | 1   | 2   | 3   | 1   | 3   | 4   | 4   | 3    | 4    | 3    |

| Resp | SC1 | SC2 | SC3 | SC4 | SC5 | SC6 | SC7 | SC8 | SC9 | SC10 | SC11 | SC12 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| 201  | 3   | 2   | 3   | 3   | 3   | 4   | 2   | 2   | 3   | 2    | 1    | 2    |
| 202  | 3   | 3   | 2   | 3   | 4   | 3   | 4   | 4   | 3   | 4    | 4    | 5    |
| 203  | 4   | 4   | 4   | 1   | 1   | 3   | 3   | 2   | 2   | 2    | 2    | 4    |
| 204  | 2   | 5   | 3   | 2   | 2   | 2   | 3   | 3   | 2   | 2    | 4    | 3    |
| 205  | 3   | 3   | 4   | 3   | 2   | 4   | 2   | 4   | 3   | 4    | 4    | 3    |
| 206  | 3   | 3   | 2   | 4   | 4   | 2   | 3   | 3   | 2   | 2    | 3    | 2    |
| 207  | 5   | 4   | 2   | 4   | 3   | 1   | 3   | 1   | 2   | 1    | 1    | 2    |
| 208  | 4   | 3   | 5   | 4   | 3   | 3   | 4   | 4   | 4   | 5    | 5    | 2    |
| 209  | 3   | 1   | 3   | 2   | 3   | 2   | 3   | 2   | 2   | 2    | 2    | 2    |
| 210  | 2   | 3   | 3   | 5   | 3   | 3   | 2   | 4   | 2   | 4    | 4    | 4    |
| 211  | 4   | 3   | 3   | 3   | 4   | 3   | 2   | 4   | 2   | 2    | 2    | 3    |
| 212  | 1   | 2   | 4   | 3   | 3   | 2   | 2   | 4   | 3   | 2    | 2    | 2    |
| 213  | 3   | 3   | 1   | 4   | 1   | 5   | 3   | 2   | 2   | 2    | 4    | 2    |
| 214  | 3   | 3   | 2   | 2   | 3   | 3   | 5   | 2   | 1   | 1    | 2    | 3    |
| 215  | 4   | 3   | 3   | 4   | 3   | 4   | 3   | 4   | 3   | 2    | 4    | 2    |
| 216  | 3   | 5   | 3   | 4   | 2   | 4   | 4   | 4   | 3   | 2    | 4    | 2    |
| 217  | 3   | 3   | 2   | 3   | 2   | 2   | 3   | 2   | 2   | 2    | 4    | 1    |
| 218  | 3   | 3   | 4   | 2   | 2   | 3   | 2   | 2   | 1   | 1    | 1    | 3    |
| 219  | 2   | 4   | 3   | 3   | 3   | 3   | 4   | 3   | 4   | 2    | 2    | 2    |
| 220  | 3   | 2   | 3   | 4   | 3   | 4   | 3   | 4   | 2   | 2    | 2    | 2    |
| 221  | 4   | 3   | 2   | 1   | 4   | 3   | 2   | 2   | 3   | 2    | 3    | 2    |
| 222  | 2   | 3   | 1   | 4   | 3   | 4   | 1   | 2   | 3   | 3    | 3    | 3    |
| 223  | 3   | 4   | 1   | 3   | 3   | 2   | 3   | 4   | 4   | 3    | 3    | 4    |
| 224  | 5   | 4   | 2   | 3   | 3   | 2   | 3   | 3   | 2   | 3    | 4    | 3    |
| 225  | 1   | 4   | 3   | 2   | 2   | 3   | 3   | 3   | 4   | 4    | 4    | 1    |
| 226  | 3   | 4   | 5   | 4   | 4   | 2   | 2   | 2   | 3   | 4    | 4    | 3    |
| 227  | 4   | 3   | 3   | 3   | 2   | 4   | 3   | 4   | 2   | 5    | 2    | 4    |
| 228  | 4   | 3   | 2   | 2   | 1   | 3   | 4   | 4   | 3   | 3    | 2    | 3    |
| 229  | 3   | 2   | 1   | 4   | 3   | 1   | 1   | 2   | 2   | 3    | 3    | 3    |
| 230  | 1   | 4   | 2   | 3   | 3   | 3   | 2   | 3   | 2   | 2    | 3    | 2    |
| 231  | 4   | 4   | 3   | 3   | 4   | 3   | 3   | 3   | 2   | 2    | 4    | 2    |
| 232  | 2   | 2   | 4   | 2   | 2   | 2   | 3   | 4   | 2   | 5    | 2    | 3    |
| 233  | 4   | 3   | 2   | 3   | 3   | 2   | 3   | 4   | 3   | 1    | 4    | 2    |
| 234  | 3   | 3   | 2   | 2   | 2   | 4   | 2   | 2   | 2   | 1    | 1    | 4    |
| 235  | 3   | 3   | 5   | 3   | 3   | 3   | 2   | 4   | 4   | 4    | 4    | 2    |
| 236  | 2   | 4   | 1   | 4   | 3   | 2   | 2   | 3   | 3   | 3    | 3    | 2    |
| 237  | 3   | 5   | 2   | 4   | 4   | 4   | 5   | 4   | 4   | 4    | 3    | 3    |
| 238  | 1   | 4   | 3   | 4   | 2   | 2   | 3   | 3   | 2   | 2    | 3    | 2    |
| 239  | 2   | 3   | 3   | 4   | 2   | 2   | 2   | 2   | 3   | 2    | 2    | 2    |
| 240  | 4   | 1   | 3   | 2   | 5   | 3   | 2   | 2   | 3   | 1    | 4    | 4    |
| 241  | 5   | 3   | 4   | 3   | 3   | 3   | 4   | 4   | 2   | 1    | 4    | 2    |
| 242  | 5   | 2   | 2   | 2   | 2   | 2   | 4   | 3   | 4   | 2    | 3    | 2    |
| 243  | 2   | 3   | 4   | 1   | 3   | 1   | 3   | 2   | 2   | 2    | 3    | 3    |
| 244  | 3   | 3   | 3   | 2   | 3   | 4   | 2   | 2   | 3   | 2    | 3    | 3    |
| 245  | 1   | 3   | 2   | 4   | 3   | 4   | 1   | 4   | 2   | 1    | 2    | 2    |
| 246  | 4   | 4   | 4   | 3   | 2   | 2   | 1   | 3   | 4   | 3    | 3    | 2    |
| 247  | 4   | 4   | 1   | 2   | 4   | 5   | 2   | 2   | 2   | 4    | 2    | 2    |
| 248  | 2   | 4   | 2   | 4   | 1   | 2   | 3   | 3   | 3   | 4    | 4    | 4    |
| 249  | 3   | 2   | 4   | 2   | 4   | 2   | 2   | 2   | 1   | 1    | 4    | 3    |
| 250  | 3   | 3   | 4   | 3   | 2   | 2   | 4   | 3   | 2   | 2    | 2    | 3    |

| Resp | SC1 | SC2 | SC3 | SC4 | SC5 | SC6 | SC7 | SC8 | SC9 | SC10 | SC11 | SC12 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| 251  | 5   | 3   | 3   | 2   | 3   | 3   | 3   | 3   | 3   | 3    | 4    | 4    |
| 252  | 3   | 4   | 1   | 4   | 3   | 4   | 3   | 2   | 2   | 2    | 4    | 4    |
| 253  | 3   | 4   | 3   | 5   | 2   | 2   | 4   | 2   | 2   | 1    | 4    | 3    |
| 254  | 1   | 4   | 5   | 2   | 3   | 3   | 3   | 3   | 3   | 1    | 2    | 2    |
| 255  | 3   | 3   | 2   | 3   | 3   | 4   | 2   | 2   | 1   | 1    | 2    | 3    |
| 256  | 4   | 3   | 3   | 4   | 1   | 3   | 4   | 2   | 4   | 2    | 4    | 3    |
| 257  | 2   | 4   | 3   | 2   | 3   | 2   | 3   | 3   | 1   | 2    | 4    | 3    |
| 258  | 3   | 3   | 2   | 3   | 4   | 3   | 2   | 3   | 1   | 2    | 2    | 2    |
| 259  | 4   | 2   | 4   | 1   | 4   | 2   | 2   | 3   | 3   | 3    | 3    | 2    |
| 260  | 3   | 3   | 2   | 2   | 4   | 4   | 3   | 2   | 4   | 2    | 2    | 4    |
| 261  | 5   | 3   | 1   | 3   | 2   | 3   | 2   | 3   | 2   | 2    | 2    | 4    |
| 262  | 4   | 3   | 1   | 4   | 3   | 2   | 1   | 3   | 1   | 2    | 3    | 3    |
| 263  | 2   | 4   | 1   | 2   | 2   | 2   | 4   | 2   | 3   | 1    | 2    | 2    |
| 264  | 3   | 4   | 2   | 3   | 1   | 1   | 2   | 2   | 1   | 2    | 2    | 2    |
| 265  | 4   | 3   | 4   | 4   | 2   | 4   | 3   | 3   | 4   | 1    | 2    | 4    |
| 266  | 4   | 5   | 3   | 2   | 3   | 3   | 2   | 2   | 4   | 1    | 2    | 3    |
| 267  | 2   | 3   | 3   | 3   | 3   | 2   | 3   | 3   | 4   | 2    | 2    | 2    |
| 268  | 3   | 3   | 4   | 3   | 4   | 2   | 3   | 3   | 3   | 2    | 2    | 3    |
| 269  | 4   | 4   | 3   | 2   | 2   | 3   | 2   | 2   | 1   | 2    | 2    | 2    |
| 270  | 3   | 2   | 3   | 2   | 3   | 3   | 4   | 2   | 3   | 2    | 2    | 3    |
| 271  | 4   | 3   | 2   | 4   | 2   | 3   | 2   | 2   | 2   | 3    | 2    | 3    |
| 272  | 2   | 3   | 3   | 3   | 5   | 2   | 4   | 2   | 2   | 4    | 4    | 4    |
| 273  | 3   | 4   | 1   | 1   | 3   | 2   | 3   | 3   | 2   | 1    | 4    | 4    |
| 274  | 3   | 4   | 2   | 4   | 4   | 1   | 3   | 3   | 2   | 2    | 4    | 3    |
| 275  | 3   | 4   | 4   | 3   | 2   | 3   | 2   | 2   | 1   | 3    | 5    | 3    |
| 276  | 4   | 3   | 5   | 4   | 3   | 4   | 5   | 3   | 3   | 3    | 2    | 3    |
| 277  | 4   | 2   | 1   | 5   | 4   | 2   | 2   | 3   | 2   | 3    | 4    | 3    |
| 278  | 3   | 3   | 2   | 2   | 3   | 2   | 3   | 3   | 2   | 2    | 2    | 2    |
| 279  | 5   | 3   | 4   | 3   | 2   | 3   | 2   | 2   | 1   | 2    | 5    | 5    |
| 280  | 3   | 4   | 3   | 2   | 1   | 3   | 3   | 2   | 2   | 2    | 3    | 3    |
| 281  | 4   | 4   | 3   | 3   | 1   | 2   | 2   | 3   | 2   | 1    | 3    | 3    |
| 282  | 2   | 4   | 4   | 4   | 2   | 2   | 1   | 3   | 1   | 1    | 3    | 3    |
| 283  | 3   | 4   | 3   | 3   | 3   | 4   | 2   | 3   | 3   | 2    | 3    | 4    |
| 284  | 3   | 1   | 2   | 2   | 2   | 2   | 4   | 3   | 3   | 5    | 5    | 2    |
| 285  | 2   | 2   | 3   | 4   | 2   | 3   | 3   | 3   | 3   | 4    | 5    | 2    |
| 286  | 4   | 3   | 4   | 3   | 5   | 2   | 3   | 3   | 4   | 1    | 2    | 2    |
| 287  | 1   | 2   | 1   | 3   | 3   | 3   | 3   | 3   | 4   | 3    | 3    | 2    |
| 288  | 3   | 2   | 4   | 5   | 5   | 2   | 3   | 3   | 5   | 1    | 3    | 3    |
| 289  | 5   | 3   | 2   | 3   | 4   | 1   | 3   | 3   | 2   | 2    | 3    | 2    |
| 290  | 4   | 4   | 1   | 2   | 2   | 2   | 4   | 3   | 3   | 2    | 4    | 4    |
| 291  | 3   | 5   | 1   | 3   | 3   | 3   | 1   | 3   | 1   | 1    | 4    | 4    |
| 292  | 4   | 3   | 3   | 1   | 2   | 1   | 2   | 3   | 3   | 1    | 2    | 2    |
| 293  | 5   | 4   | 2   | 4   | 2   | 2   | 2   | 3   | 2   | 3    | 3    | 3    |
| 294  | 2   | 3   | 1   | 4   | 1   | 2   | 3   | 3   | 2   | 3    | 4    | 4    |
| 295  | 3   | 2   | 3   | 3   | 2   | 3   | 2   | 3   | 3   | 4    | 5    | 3    |
| 296  | 4   | 3   | 3   | 3   | 4   | 4   | 3   | 3   | 3   | 3    | 2    | 2    |
| 297  | 3   | 3   | 2   | 3   | 4   | 3   | 2   | 3   | 3   | 2    | 3    | 3    |
| 298  | 4   | 2   | 2   | 2   | 3   | 2   | 2   | 3   | 3   | 4    | 4    | 4    |
| 299  | 2   | 3   | 4   | 4   | 4   | 1   | 2   | 3   | 4   | 1    | 3    | 1    |
| 300  | 3   | 4   | 4   | 5   | 2   | 5   | 5   | 3   | 3   | 5    | 5    | 5    |

LAMPIRAN 3.1  
VALIDITAS DAN RELIABILITAS

| <i>Perceived Quality Correlations</i> |                                                          |         |         |          |            |
|---------------------------------------|----------------------------------------------------------|---------|---------|----------|------------|
|                                       |                                                          | TOTALPQ | GENAPPQ | GANJILPQ | Kesimpulan |
| PQ18                                  | Pearson Correlation                                      | 0.505   | 0.493   | 0.488    | Valid      |
|                                       | Sig. (2-tailed)                                          | 0.004   | 0.006   | 0.006    |            |
|                                       | N                                                        | 30      | 30      | 30       |            |
| PQ19                                  | Pearson Correlation                                      | 0.478   | 0.462   | 0.465    | Valid      |
|                                       | Sig. (2-tailed)                                          | 0.008   | 0.01    | 0.01     |            |
|                                       | N                                                        | 30      | 30      | 30       |            |
| PQ20                                  | Pearson Correlation                                      | 0.559   | 0.541   | 0.543    | Valid      |
|                                       | Sig. (2-tailed)                                          | 0.001   | 0.002   | 0.002    |            |
|                                       | N                                                        | 30      | 30      | 30       |            |
| PQ21                                  | Pearson Correlation                                      | 0.395   | 0.371   | 0.394    | Valid      |
|                                       | Sig. (2-tailed)                                          | 0.031   | 0.043   | 0.031    |            |
|                                       | N                                                        | 30      | 30      | 30       |            |
| PQ22                                  | Pearson Correlation                                      | 0.317   | 0.363   | 0.255    | Valid      |
|                                       | Sig. (2-tailed)                                          | 0.088   | 0.048   | 0.173    |            |
|                                       | N                                                        | 30      | 30      | 30       |            |
| PQ23                                  | Pearson Correlation                                      | 0.535   | 0.549   | 0.491    | Valid      |
|                                       | Sig. (2-tailed)                                          | 0.002   | 0.002   | 0.006    |            |
|                                       | N                                                        | 30      | 30      | 30       |            |
| PQ24                                  | Pearson Correlation                                      | 0.466   | 0.483   | 0.423    | Valid      |
|                                       | Sig. (2-tailed)                                          | 0.01    | 0.007   | 0.02     |            |
|                                       | N                                                        | 30      | 30      | 30       |            |
| PQ25                                  | Pearson Correlation                                      | 0.43    | 0.45    | 0.387    | Valid      |
|                                       | Sig. (2-tailed)                                          | 0.018   | 0.013   | 0.035    |            |
|                                       | N                                                        | 30      | 30      | 30       |            |
| PQ26                                  | Pearson Correlation                                      | 0.376   | 0.31    | 0.414    | Valid      |
|                                       | Sig. (2-tailed)                                          | 0.041   | 0.095   | 0.023    |            |
|                                       | N                                                        | 30      | 30      | 30       |            |
| PQ27                                  | Pearson Correlation                                      | 0.404   | 0.297   | 0.479    | Valid      |
|                                       | Sig. (2-tailed)                                          | 0.027   | 0.111   | 0.007    |            |
|                                       | N                                                        | 30      | 30      | 30       |            |
| PQ28                                  | Pearson Correlation                                      | 0.376   | 0.453   | 0.283    | Valid      |
|                                       | Sig. (2-tailed)                                          | 0.041   | 0.012   | 0.129    |            |
|                                       | N                                                        | 30      | 30      | 30       |            |
| PQ29                                  | Pearson Correlation                                      | 0.645   | 0.648   | 0.605    | Valid      |
|                                       | Sig. (2-tailed)                                          | 0       | 0       | 0        |            |
|                                       | N                                                        | 30      | 30      | 30       |            |
| PQ30                                  | Pearson Correlation                                      | 0.508   | 0.503   | 0.482    | Valid      |
|                                       | Sig. (2-tailed)                                          | 0.004   | 0.005   | 0.007    |            |
|                                       | N                                                        | 30      | 30      | 30       |            |
| TOTALPQ                               | Pearson Correlation                                      | 1       | 0.967   | 0.972    |            |
|                                       | Sig. (2-tailed)                                          | .       | 0       | 0        |            |
|                                       | N                                                        | 30      | 30      | 30       |            |
| GENAPPQ                               | Pearson Correlation                                      | 0.967   | 1       | 0.881    |            |
|                                       | Sig. (2-tailed)                                          | 0       | .       | 0        |            |
|                                       | N                                                        | 30      | 30      | 30       |            |
| GANJILPQ                              | Pearson Correlation                                      | 0.972   | 0.881   | 1        |            |
|                                       | Sig. (2-tailed)                                          | 0       | 0       | .        |            |
|                                       | N                                                        | 30      | 30      | 30       |            |
| *                                     | Correlation is significant at the 0.05 level (2-tailed). |         |         |          |            |
| **                                    | Correlation is significant at the 0.01 level (2-tailed). |         |         |          |            |

| Switching Cost Correlations |                                                          |         |         |          |            |
|-----------------------------|----------------------------------------------------------|---------|---------|----------|------------|
|                             |                                                          | TOTALSC | GENAPSC | GANJILSC | Kesimpulan |
| SC1                         | Pearson Correlation                                      | 0.56    | 0.496   | 0.536    | Valid      |
|                             | Sig. (2-tailed)                                          | 0.001   | 0.005   | 0.002    |            |
|                             | N                                                        | 30      | 30      | 30       |            |
| SC2                         | Pearson Correlation                                      | 0.635   | 0.544   | 0.627    | Valid      |
|                             | Sig. (2-tailed)                                          | 0       | 0.002   | 0        |            |
|                             | N                                                        | 30      | 30      | 30       |            |
| SC3                         | Pearson Correlation                                      | 0.492   | 0.267   | 0.651    | Valid      |
|                             | Sig. (2-tailed)                                          | 0.006   | 0.154   | 0        |            |
|                             | N                                                        | 30      | 30      | 30       |            |
| SC4                         | Pearson Correlation                                      | 0.383   | 0.328   | 0.38     | Valid      |
|                             | Sig. (2-tailed)                                          | 0.036   | 0.077   | 0.038    |            |
|                             | N                                                        | 30      | 30      | 30       |            |
| SC5                         | Pearson Correlation                                      | 0.356   | 0.125   | 0.545    | Valid      |
|                             | Sig. (2-tailed)                                          | 0.053   | 0.51    | 0.002    |            |
|                             | N                                                        | 30      | 30      | 30       |            |
| SC6                         | Pearson Correlation                                      | 0.371   | 0.374   | 0.308    | Valid      |
|                             | Sig. (2-tailed)                                          | 0.043   | 0.042   | 0.098    |            |
|                             | N                                                        | 30      | 30      | 30       |            |
| SC7                         | Pearson Correlation                                      | 0.462   | 0.496   | 0.35     | Valid      |
|                             | Sig. (2-tailed)                                          | 0.01    | 0.005   | 0.058    |            |
|                             | N                                                        | 30      | 30      | 30       |            |
| SC8                         | Pearson Correlation                                      | 0.688   | 0.717   | 0.544    | Valid      |
|                             | Sig. (2-tailed)                                          | 0       | 0       | 0.002    |            |
|                             | N                                                        | 30      | 30      | 30       |            |
| SC9                         | Pearson Correlation                                      | 0.693   | 0.689   | 0.585    | Valid      |
|                             | Sig. (2-tailed)                                          | 0       | 0       | 0.001    |            |
|                             | N                                                        | 30      | 30      | 30       |            |
| SC10                        | Pearson Correlation                                      | 0.602   | 0.787   | 0.306    | Valid      |
|                             | Sig. (2-tailed)                                          | 0       | 0       | 0.101    |            |
|                             | N                                                        | 30      | 30      | 30       |            |
| SC11                        | Pearson Correlation                                      | 0.529   | 0.293   | 0.695    | Valid      |
|                             | Sig. (2-tailed)                                          | 0.003   | 0.117   | 0        |            |
|                             | N                                                        | 30      | 30      | 30       |            |
| SC12                        | Pearson Correlation                                      | 0.604   | 0.761   | 0.337    | Valid      |
|                             | Sig. (2-tailed)                                          | 0       | 0       | 0.069    |            |
|                             | N                                                        | 30      | 30      | 30       |            |
| TOTALSC                     | Pearson Correlation                                      | 1       | 0.926   | 0.915    |            |
|                             | Sig. (2-tailed)                                          | .       | 0       | 0        |            |
|                             | N                                                        | 30      | 30      | 30       |            |
| GENAPSC                     | Pearson Correlation                                      | 0.926   | 1       | 0.695    |            |
|                             | Sig. (2-tailed)                                          | 0       | .       | 0        |            |
|                             | N                                                        | 30      | 30      | 30       |            |
| GANJILSC                    | Pearson Correlation                                      | 0.915   | 0.695   | 1        |            |
|                             | Sig. (2-tailed)                                          | 0       | 0       | .        |            |
|                             | N                                                        | 30      | 30      | 30       |            |
| *                           | Correlation is significant at the 0.05 level (2-tailed). |         |         |          |            |
| **                          | Correlation is significant at the 0.01 level (2-tailed). |         |         |          |            |

LAMPIRAN 3.2  
UJI KESAMAAN KELOMPOK RESPONDEN

| ANOVA |                |             |     |             |          |          |                     |
|-------|----------------|-------------|-----|-------------|----------|----------|---------------------|
| PQ16  | Between Groups | 5.84444076  | 9   | 0.649382307 | 0.802232 | 0.614665 | Tidak Ada Perbedaan |
|       | Within Groups  | 152.9897301 | 189 | 0.809469471 |          |          |                     |
|       | Total          | 158.8341709 | 198 |             |          |          |                     |
| PQ17  | Between Groups | 3.928682818 | 9   | 0.436520313 | 0.317532 | 0.968897 | Tidak Ada Perbedaan |
|       | Within Groups  | 378.0502646 | 275 | 1.374728235 |          |          |                     |
|       | Total          | 381.9789474 | 284 |             |          |          |                     |
| PQ18  | Between Groups | 4.022753929 | 9   | 0.446972659 | 0.335235 | 0.962768 | Tidak Ada Perbedaan |
|       | Within Groups  | 378.6609195 | 284 | 1.333313097 |          |          |                     |
|       | Total          | 382.6836735 | 293 |             |          |          |                     |
| PQ19  | Between Groups | 5.016266785 | 9   | 0.557362976 | 0.513669 | 0.864239 | Tidak Ada Perbedaan |
|       | Within Groups  | 290.7966829 | 268 | 1.085062249 |          |          |                     |
|       | Total          | 295.8129496 | 277 |             |          |          |                     |
| PQ20  | Between Groups | 4.474574965 | 9   | 0.497174996 | 0.536401 | 0.847421 | Tidak Ada Perbedaan |
|       | Within Groups  | 243.7671833 | 263 | 0.926871419 |          |          |                     |
|       | Total          | 248.2417582 | 272 |             |          |          |                     |
| PQ21  | Between Groups | 5.804449637 | 9   | 0.644938849 | 0.896683 | 0.528718 | Tidak Ada Perbedaan |
|       | Within Groups  | 189.1625833 | 263 | 0.719249366 |          |          |                     |
|       | Total          | 194.967033  | 272 |             |          |          |                     |
| PQ22  | Between Groups | 7.051716332 | 9   | 0.783524037 | 1.683739 | 0.092553 | Tidak Ada Perbedaan |
|       | Within Groups  | 130.7627167 | 281 | 0.465347746 |          |          |                     |
|       | Total          | 137.814433  | 290 |             |          |          |                     |
| PQ23  | Between Groups | 4.467996041 | 9   | 0.496444005 | 0.665239 | 0.740154 | Tidak Ada Perbedaan |
|       | Within Groups  | 210.4463875 | 282 | 0.746263786 |          |          |                     |
|       | Total          | 214.9143836 | 291 |             |          |          |                     |
| PQ24  | Between Groups | 6.030425067 | 9   | 0.67004723  | 1.016159 | 0.427074 | Tidak Ada Perbedaan |
|       | Within Groups  | 185.2891626 | 281 | 0.659392038 |          |          |                     |
|       | Total          | 191.3195876 | 290 |             |          |          |                     |
| PQ25  | Between Groups | 6.283333333 | 9   | 0.698148148 | 0.632763 | 0.768807 | Tidak Ada Perbedaan |
|       | Within Groups  | 319.9666667 | 290 | 1.103333333 |          |          |                     |
|       | Total          | 326.25      | 299 |             |          |          |                     |
| PQ26  | Between Groups | 8.907432875 | 9   | 0.989714764 | 0.711157 | 0.698595 | Tidak Ada Perbedaan |
|       | Within Groups  | 393.8502463 | 283 | 1.391696983 |          |          |                     |
|       | Total          | 402.7576792 | 292 |             |          |          |                     |
| PQ27  | Between Groups | 2.83        | 9   | 0.314444444 | 0.260317 | 0.984379 | Tidak Ada Perbedaan |
|       | Within Groups  | 350.3       | 290 | 1.207931034 |          |          |                     |
|       | Total          | 353.13      | 299 |             |          |          |                     |
| PQ28  | Between Groups | 16.85438355 | 9   | 1.872709283 | 1.656114 | 0.099538 | Tidak Ada Perbedaan |
|       | Within Groups  | 312.0966654 | 276 | 1.13078502  |          |          |                     |
|       | Total          | 328.951049  | 285 |             |          |          |                     |
| PQ29  | Between Groups | 4.403333333 | 9   | 0.489259259 | 0.721817 | 0.688832 | Tidak Ada Perbedaan |
|       | Within Groups  | 196.5666667 | 290 | 0.677816092 |          |          |                     |
|       | Total          | 200.97      | 299 |             |          |          |                     |
| PQ30  | Between Groups | 1.195266515 | 9   | 0.132807391 | 0.179505 | 0.996053 | Tidak Ada Perbedaan |
|       | Within Groups  | 205.6797335 | 278 | 0.739855156 |          |          |                     |
|       | Total          | 206.875     | 287 |             |          |          |                     |

| ANOVA |                |             |     |             |          |          |                     |
|-------|----------------|-------------|-----|-------------|----------|----------|---------------------|
| SC1   | Between Groups | 4.536666667 | 9   | 0.504074074 | 0.487868 | 0.882398 | Tidak Ada Perbedaan |
|       | Within Groups  | 299.6333333 | 290 | 1.033218391 |          |          |                     |
|       | Total          | 304.17      | 299 |             |          |          |                     |
| SC2   | Between Groups | 6.163333333 | 9   | 0.684814815 | 0.831063 | 0.587957 | Tidak Ada Perbedaan |
|       | Within Groups  | 238.9666667 | 290 | 0.824022989 |          |          |                     |
|       | Total          | 245.13      | 299 |             |          |          |                     |
| SC3   | Between Groups | 10.83       | 9   | 1.203333333 | 1.015915 | 0.427176 | Tidak Ada Perbedaan |
|       | Within Groups  | 343.5       | 290 | 1.184482759 |          |          |                     |
|       | Total          | 354.33      | 299 |             |          |          |                     |
| SC4   | Between Groups | 9.266666667 | 9   | 1.02962963  | 1.132176 | 0.339683 | Tidak Ada Perbedaan |
|       | Within Groups  | 263.7333333 | 290 | 0.909425287 |          |          |                     |
|       | Total          | 273         | 299 |             |          |          |                     |
| SC5   | Between Groups | 2.47        | 9   | 0.274444444 | 0.274729 | 0.981106 | Tidak Ada Perbedaan |
|       | Within Groups  | 289.7       | 290 | 0.998965517 |          |          |                     |
|       | Total          | 292.17      | 299 |             |          |          |                     |
| SC6   | Between Groups | 8.013333333 | 9   | 0.89037037  | 1.030905 | 0.415206 | Tidak Ada Perbedaan |
|       | Within Groups  | 250.4666667 | 290 | 0.863678161 |          |          |                     |
|       | Total          | 258.48      | 299 |             |          |          |                     |
| SC7   | Between Groups | 4.963333333 | 9   | 0.551481481 | 0.566791 | 0.823945 | Tidak Ada Perbedaan |
|       | Within Groups  | 282.1666667 | 290 | 0.972988506 |          |          |                     |
|       | Total          | 287.13      | 299 |             |          |          |                     |
| SC8   | Between Groups | 5.403333333 | 9   | 0.60037037  | 0.71132  | 0.698461 | Tidak Ada Perbedaan |
|       | Within Groups  | 244.7666667 | 290 | 0.844022989 |          |          |                     |
|       | Total          | 250.17      | 299 |             |          |          |                     |
| SC9   | Between Groups | 2.333333333 | 9   | 0.259259259 | 0.329278 | 0.96493  | Tidak Ada Perbedaan |
|       | Within Groups  | 228.3333333 | 290 | 0.787356322 |          |          |                     |
|       | Total          | 230.6666667 | 299 |             |          |          |                     |
| SC10  | Between Groups | 8.466666667 | 9   | 0.940740741 | 0.881375 | 0.542252 | Tidak Ada Perbedaan |
|       | Within Groups  | 309.5333333 | 290 | 1.067356322 |          |          |                     |
|       | Total          | 318         | 299 |             |          |          |                     |
| SC11  | Between Groups | 12.73666667 | 9   | 1.415185185 | 1.3161   | 0.227856 | Tidak Ada Perbedaan |
|       | Within Groups  | 311.8333333 | 290 | 1.075287356 |          |          |                     |
|       | Total          | 324.57      | 299 |             |          |          |                     |
| SC12  | Between Groups | 11.18666667 | 9   | 1.242962963 | 1.287661 | 0.243008 | Tidak Ada Perbedaan |
|       | Within Groups  | 279.9333333 | 290 | 0.965287356 |          |          |                     |
|       | Total          | 291.12      | 299 |             |          |          |                     |

### LAMPIRAN 3.3

#### ANALISIS DESKRIPTIF

| PQ 1    |           |             |               |                    | PQ 2    |           |             |               |                    |
|---------|-----------|-------------|---------------|--------------------|---------|-----------|-------------|---------------|--------------------|
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent     | Valid Percent | Cumulative Percent |
| 1       | 12        | 4           | 4.395604396   | 4.395604396        | 1       | 18        | 6           | 6.060606061   | 6.060606061        |
| 2       | 54        | 18          | 19.78021978   | 24.17582418        | 2       | 81        | 27          | 27.27272727   | 33.33333333        |
| 3       | 105       | 35          | 38.46153846   | 62.63736264        | 3       | 87        | 29          | 29.29292929   | 62.62626263        |
| 4       | 75        | 25          | 27.47252747   | 90.10989011        | 4       | 84        | 28          | 28.28282828   | 90.90909091        |
| 5       | 27        | 9           | 9.89010989    | 100                | 5       | 27        | 9           | 9.090909091   | 100                |
| Total   | 273       | 91          | 100           |                    | Total   | 297       | 99          | 100           |                    |
| Missing | 27        | 9           |               |                    | Missing | 3         | 1           |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100         |               |                    |
| PQ3     |           |             |               |                    | PQ4     |           |             |               |                    |
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent     | Valid Percent | Cumulative Percent |
| 1       | 41        | 13.66666667 | 14.04109589   | 14.04109589        | 1       | 37        | 12.33333333 | 12.98245614   | 12.98245614        |
| 2       | 119       | 39.66666667 | 40.75342466   | 54.79452055        | 2       | 128       | 42.66666667 | 44.9122807    | 57.89473684        |
| 3       | 54        | 18          | 18.49315068   | 73.28767123        | 3       | 81        | 27          | 28.42105263   | 86.31578947        |
| 4       | 51        | 17          | 17.46575342   | 90.75342466        | 4       | 30        | 10          | 10.52631579   | 96.84210526        |
| 5       | 27        | 9           | 9.246575342   | 100                | 5       | 9         | 3           | 3.157894737   | 100                |
| Total   | 292       | 97.33333333 | 100           |                    | Total   | 285       | 95          | 100           |                    |
| Missing | 8         | 2.666666667 |               |                    | Missing | 15        | 5           |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100         |               |                    |
| PQ5     |           |             |               |                    | PQ6     |           |             |               |                    |
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent     | Valid Percent | Cumulative Percent |
| 1       | 30        | 10          | 10.20408163   | 10.20408163        | 1       | 9         | 3           | 3.272727273   | 3.272727273        |
| 2       | 84        | 28          | 28.57142857   | 38.7755102         | 2       | 30        | 10          | 10.90909091   | 14.18181818        |
| 3       | 123       | 41          | 41.83673469   | 80.6122449         | 3       | 156       | 52          | 56.72727273   | 70.90909091        |
| 4       | 36        | 12          | 12.24489796   | 92.85714286        | 4       | 48        | 16          | 17.45454545   | 88.36363636        |
| 5       | 21        | 7           | 7.142857143   | 100                | 5       | 32        | 10.66666667 | 11.63636364   | 100                |
| Total   | 294       | 98          | 100           |                    | Total   | 275       | 91.66666667 | 100           |                    |
| Missing | 6         | 2           |               |                    | Missing | 25        | 8.333333333 |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100         |               |                    |
| PQ7     |           |             |               |                    | PQ8     |           |             |               |                    |
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent     | Valid Percent | Cumulative Percent |
| 1       | 18        | 6           | 11.11111111   | 11.11111111        | 1       | 34        | 11.33333333 | 11.64383562   | 11.64383562        |
| 2       | 42        | 14          | 25.92592593   | 37.03703704        | 2       | 96        | 32          | 32.87671233   | 44.52054795        |
| 3       | 63        | 21          | 38.88888889   | 75.92592593        | 3       | 102       | 34          | 34.93150685   | 79.45205479        |
| 4       | 33        | 11          | 20.37037037   | 96.2962963         | 4       | 39        | 13          | 13.35616438   | 92.80821918        |
| 5       | 6         | 2           | 3.703703704   | 100                | 5       | 21        | 7           | 7.191780822   | 100                |
| Total   | 162       | 54          | 100           |                    | Total   | 292       | 97.33333333 | 100           |                    |
| Missing | 138       | 46          |               |                    | Missing | 8         | 2.666666667 |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100         |               |                    |
| PQ9     |           |             |               |                    | PQ10    |           |             |               |                    |
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent     | Valid Percent | Cumulative Percent |
| 1       | 27        | 9           | 9.375         | 9.375              | 1       | 3         | 1           | 1.162790698   | 1.162790698        |
| 2       | 93        | 31          | 32.29166667   | 41.66666667        | 2       | 12        | 4           | 4.651162791   | 5.813953488        |
| 3       | 99        | 33          | 34.375        | 76.04166667        | 3       | 174       | 58          | 67.44186047   | 73.25581395        |
| 4       | 45        | 15          | 15.625        | 91.66666667        | 4       | 57        | 19          | 22.09302326   | 95.34883721        |
| 5       | 24        | 8           | 8.333333333   | 100                | 5       | 12        | 4           | 4.651162791   | 100                |
| Total   | 288       | 96          | 100           |                    | Total   | 258       | 86          | 100           |                    |
| Missing | 12        | 4           |               |                    | Missing | 42        | 14          |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100         |               |                    |
| P11     |           |             |               |                    | PQ12    |           |             |               |                    |
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent     | Valid Percent | Cumulative Percent |
| 1       | 24        | 8           | 16.66666667   | 16.66666667        | 1       | 15        | 5           | 8.928571429   | 8.928571429        |
| 2       | 39        | 13          | 27.08333333   | 43.75              | 2       | 48        | 16          | 28.57142857   | 37.5               |
| 3       | 51        | 17          | 35.41666667   | 79.16666667        | 3       | 66        | 22          | 39.28571429   | 76.78571429        |
| 4       | 27        | 9           | 18.75         | 97.91666667        | 4       | 36        | 12          | 21.42857143   | 98.21428571        |
| 5       | 3         | 1           | 2.083333333   | 100                | 5       | 3         | 1           | 1.785714286   | 100                |
| Total   | 144       | 48          | 100           |                    | Total   | 168       | 56          | 100           |                    |
| Missing | 156       | 52          |               |                    | Missing | 132       | 44          |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100         |               |                    |
| PQ13    |           |             |               |                    | PQ14    |           |             |               |                    |
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent     | Valid Percent | Cumulative Percent |
| 1       | 15        | 5           | 10.20408163   | 10.20408163        | 1       | 6         | 2           | 2.631578947   | 2.631578947        |
| 2       | 45        | 15          | 30.6122449    | 40.81632653        | 2       | 45        | 15          | 19.73684211   | 22.36842105        |
| 3       | 42        | 14          | 28.57142857   | 69.3877551         | 3       | 102       | 34          | 44.73684211   | 67.10526316        |
| 4       | 39        | 13          | 26.53061224   | 95.91836735        | 4       | 57        | 19          | 25            | 92.10526316        |
| 5       | 6         | 2           | 4.081632653   | 100                | 5       | 18        | 6           | 7.894736842   | 100                |
| Total   | 147       | 49          | 100           |                    | Total   | 228       | 76          | 100           |                    |
| Missing | 153       | 51          |               |                    | Missing | 72        | 24          |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100         |               |                    |
| PQ15    |           |             |               |                    | PQ16    |           |             |               |                    |
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent     | Valid Percent | Cumulative Percent |
| 1       | 15        | 5           | 9.803921569   | 9.803921569        | 1       | 25        | 8.333333333 | 12.56281407   | 12.56281407        |
| 2       | 30        | 10          | 19.60784314   | 29.41176471        | 2       | 60        | 20          | 30.15075377   | 42.71356784        |
| 3       | 81        | 27          | 52.94117647   | 82.35294118        | 3       | 96        | 32          | 48.24120603   | 90.95477387        |
| 4       | 24        | 8           | 15.68627451   | 98.03921569        | 4       | 12        | 4           | 6.030150754   | 96.98492462        |
| 5       | 3         | 1           | 1.960784314   | 100                | 5       | 6         | 2           | 3.015075377   | 100                |
| Total   | 153       | 51          | 100           |                    | Total   | 199       | 66.33333333 | 100           |                    |
| Missing | 147       | 49          |               |                    | Missing | 101       | 33.66666667 |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100         |               |                    |

| PQ17    |           |             |               |                    | PQ18    |           |             |               |                    |
|---------|-----------|-------------|---------------|--------------------|---------|-----------|-------------|---------------|--------------------|
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent     | Valid Percent | Cumulative Percent |
| 1       | 33        | 11          | 11.57894737   | 11.57894737        | 1       | 18        | 6           | 6.12244898    | 6.12244898         |
| 2       | 45        | 15          | 15.78947368   | 27.36842105        | 2       | 66        | 22          | 22.44897959   | 28.57142857        |
| 3       | 108       | 36          | 37.89473684   | 65.26315789        | 3       | 69        | 23          | 23.46938776   | 52.04081633        |
| 4       | 63        | 21          | 22.10526316   | 87.36842105        | 4       | 99        | 33          | 33.67346939   | 85.71428571        |
| 5       | 36        | 12          | 12.63157895   | 100                | 5       | 42        | 14          | 14.28571429   | 100                |
| Total   | 285       | 95          | 100           |                    | Total   | 294       | 98          | 100           |                    |
| Missing | 15        | 5           |               |                    | Missing | 6         | 2           |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100         |               |                    |
| PQ19    |           |             |               |                    | PQ20    |           |             |               |                    |
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent     | Valid Percent | Cumulative Percent |
| 1       | 15        | 5           | 5.395683453   | 5.395683453        | 1       | 9         | 3           | 3.296703297   | 3.296703297        |
| 2       | 44        | 14.66666667 | 15.82733813   | 21.22302158        | 2       | 18        | 6           | 6.593406593   | 9.89010989         |
| 3       | 93        | 31          | 33.45323741   | 54.67625899        | 3       | 120       | 40          | 43.95604396   | 53.84615385        |
| 4       | 96        | 32          | 34.5323741    | 89.20863309        | 4       | 81        | 27          | 29.67032967   | 83.51648352        |
| 5       | 30        | 10          | 10.79136691   | 100                | 5       | 45        | 15          | 16.48351648   | 100                |
| Total   | 278       | 92.66666667 | 100           |                    | Total   | 273       | 91          | 100           |                    |
| Missing | 22        | 7.333333333 |               |                    | Missing | 27        | 9           |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100         |               |                    |
| P21     |           |             |               |                    | PQ22    |           |             |               |                    |
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent     | Valid Percent | Cumulative Percent |
| 1       | 3         | 1           | 1.098901099   | 1.098901099        | 1       | 0         | 0           | 0             | 0                  |
| 2       | 14        | 4.666666667 | 5.128205128   | 6.227106227        | 2       | 6         | 2           | 2.06185567    | 2.06185567         |
| 3       | 90        | 30          | 32.96703297   | 39.19413919        | 3       | 144       | 48          | 49.48453608   | 51.54639175        |
| 4       | 120       | 40          | 43.95604396   | 83.15018315        | 4       | 114       | 38          | 39.17525773   | 90.72164948        |
| 5       | 46        | 15.33333333 | 16.84981685   | 100                | 5       | 27        | 9           | 9.278350515   | 100                |
| Total   | 273       | 91          | 100           |                    | Total   | 291       | 97          | 100           |                    |
| Missing | 27        | 9           |               |                    | Missing | 9         | 3           |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100         |               |                    |
| P23     |           |             |               |                    | PQ24    |           |             |               |                    |
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent     | Valid Percent | Cumulative Percent |
| 1       | 3         | 1           | 1.02739726    | 1.02739726         | 1       | 0         | 0           | 0             | 0                  |
| 2       | 24        | 8           | 8.219178082   | 9.246575342        | 2       | 15        | 5           | 5.154639175   | 5.154639175        |
| 3       | 132       | 44          | 45.20547945   | 54.45205479        | 3       | 117       | 39          | 40.20618557   | 45.36082474        |
| 4       | 95        | 31.66666667 | 32.53424658   | 86.98630137        | 4       | 111       | 37          | 38.1443299    | 83.50515464        |
| 5       | 38        | 12.66666667 | 13.01369863   | 100                | 5       | 48        | 16          | 16.49484536   | 100                |
| Total   | 292       | 97.33333333 | 100           |                    | Total   | 291       | 97          | 100           |                    |
| Missing | 8         | 2.666666667 |               |                    | Missing | 9         | 3           |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100         |               |                    |
| P25     |           |             |               |                    | PQ26    |           |             |               |                    |
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent     | Valid Percent | Cumulative Percent |
| 1       | 9         | 3           | 3             | 3                  | 1       | 23        | 7.666666667 | 7.849829352   | 7.849829352        |
| 2       | 36        | 12          | 12            | 15                 | 2       | 63        | 21          | 21.50170648   | 29.35153584        |
| 3       | 99        | 33          | 33            | 48                 | 3       | 51        | 17          | 17.40614334   | 46.75767918        |
| 4       | 93        | 31          | 31            | 79                 | 4       | 117       | 39          | 39.93174061   | 86.6894198         |
| 5       | 63        | 21          | 21            | 100                | 5       | 39        | 13          | 13.3105802    | 100                |
| Total   | 300       | 100         | 100           |                    | Total   | 293       | 97.66666667 | 100           |                    |
| Missing | 27        | 9           |               |                    | Missing | 7         | 2.333333333 |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100         |               |                    |
| P27     |           |             |               |                    | PQ28    |           |             |               |                    |
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent     | Valid Percent | Cumulative Percent |
| 1       | 3         | 1           | 1             | 1                  | 1       | 24        | 8           | 8.391608392   | 8.391608392        |
| 2       | 54        | 18          | 18            | 19                 | 2       | 51        | 17          | 17.83216783   | 26.22377622        |
| 3       | 39        | 13          | 13            | 32                 | 3       | 99        | 33          | 34.61538462   | 60.83916084        |
| 4       | 117       | 39          | 39            | 71                 | 4       | 87        | 29          | 30.41958042   | 91.25874126        |
| 5       | 87        | 29          | 29            | 100                | 5       | 25        | 8.333333333 | 8.741258741   | 100                |
| Total   | 300       | 100         | 100           |                    | Total   | 286       | 95.33333333 | 100           |                    |
| Missing | 8         | 2.666666667 |               |                    | Missing | 14        | 4.666666667 |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100         |               |                    |
| P29     |           |             |               |                    | PQ30    |           |             |               |                    |
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent     | Valid Percent | Cumulative Percent |
| 1       | 3         | 1           | 1             | 1                  | 1       | 0         | 0           | 0             | 0                  |
| 2       | 9         | 3           | 3             | 4                  | 2       | 33        | 11          | 11.45833333   | 11.45833333        |
| 3       | 165       | 55          | 55            | 59                 | 3       | 144       | 48          | 50            | 61.45833333        |
| 4       | 78        | 26          | 26            | 85                 | 4       | 75        | 25          | 26.04166667   | 87.5               |
| 5       | 45        | 15          | 15            | 100                | 5       | 36        | 12          | 12.5          | 100                |
| Total   | 300       | 100         | 100           |                    | Total   | 288       | 96          | 100           |                    |
| Missing | 0         | 0           |               |                    | Missing | 12        | 4           |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100         |               |                    |

| SC1     |           |             |               |                    | SC2     |           |         |               |                    |
|---------|-----------|-------------|---------------|--------------------|---------|-----------|---------|---------------|--------------------|
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent | Valid Percent | Cumulative Percent |
| 1       | 21        | 7           | 7             | 7                  | 1       | 12        | 4       | 4             | 4                  |
| 2       | 39        | 13          | 13            | 20                 | 2       | 42        | 14      | 14            | 18                 |
| 3       | 129       | 43          | 43            | 63                 | 3       | 129       | 43      | 43            | 61                 |
| 4       | 84        | 28          | 28            | 91                 | 4       | 99        | 33      | 33            | 94                 |
| 5       | 27        | 9           | 9             | 100                | 5       | 18        | 6       | 6             | 100                |
| Total   | 300       | 100         | 100           |                    | Total   | 300       | 100     | 100           |                    |
| Missing | 0         | 0           |               |                    | Missing | 0         | 0       |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100     |               |                    |
| SC3     |           |             |               |                    | SC4     |           |         |               |                    |
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent | Valid Percent | Cumulative Percent |
| 1       | 36        | 12          | 12            | 12                 | 1       | 21        | 7       | 7             | 7                  |
| 2       | 81        | 27          | 27            | 39                 | 2       | 78        | 26      | 26            | 33                 |
| 3       | 99        | 33          | 33            | 72                 | 3       | 123       | 41      | 41            | 74                 |
| 4       | 66        | 22          | 22            | 94                 | 4       | 66        | 22      | 22            | 96                 |
| 5       | 18        | 6           | 6             | 100                | 5       | 12        | 4       | 4             | 100                |
| Total   | 300       | 100         | 100           |                    | Total   | 300       | 100     | 100           |                    |
| Missing | 0         | 0           |               |                    | Missing | 0         | 0       |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100     |               |                    |
| SC5     |           |             |               |                    | SC6     |           |         |               |                    |
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent | Valid Percent | Cumulative Percent |
| 1       | 21        | 7           | 7             | 7                  | 1       | 21        | 7       | 7             | 7                  |
| 2       | 102       | 34          | 34            | 41                 | 2       | 111       | 37      | 37            | 44                 |
| 3       | 105       | 35          | 35            | 76                 | 3       | 108       | 36      | 36            | 80                 |
| 4       | 57        | 19          | 19            | 95                 | 4       | 51        | 17      | 17            | 97                 |
| 5       | 15        | 5           | 5             | 100                | 5       | 9         | 3       | 3             | 100                |
| Total   | 300       | 100         | 100           |                    | Total   | 300       | 100     | 100           |                    |
| Missing | 0         | 0           |               |                    | Missing | 0         | 0       |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100     |               |                    |
| SC7     |           |             |               |                    | SC8     |           |         |               |                    |
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent | Valid Percent | Cumulative Percent |
| 1       | 24        | 8           | 8             | 8                  | 1       | 18        | 6       | 6             | 6                  |
| 2       | 99        | 33          | 33            | 41                 | 2       | 99        | 33      | 33            | 39                 |
| 3       | 114       | 38          | 38            | 79                 | 3       | 111       | 37      | 37            | 76                 |
| 4       | 48        | 16          | 16            | 95                 | 4       | 66        | 22      | 22            | 98                 |
| 5       | 15        | 5           | 5             | 100                | 5       | 6         | 2       | 2             | 100                |
| Total   | 300       | 100         | 100           |                    | Total   | 300       | 100     | 100           |                    |
| Missing | 0         | 0           |               |                    | Missing | 0         | 0       |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100     |               |                    |
| SC9     |           |             |               |                    | SC10    |           |         |               |                    |
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent | Valid Percent | Cumulative Percent |
| 1       | 21        | 7           | 7             | 7                  | 1       | 57        | 19      | 19            | 19                 |
| 2       | 113       | 37.66666667 | 37.66666667   | 44.66666667        | 2       | 120       | 40      | 40            | 59                 |
| 3       | 117       | 39          | 39            | 83.66666667        | 3       | 81        | 27      | 27            | 86                 |
| 4       | 43        | 14.33333333 | 14.33333333   | 98                 | 4       | 30        | 10      | 10            | 96                 |
| 5       | 6         | 2           | 2             | 100                | 5       | 12        | 4       | 4             | 100                |
| Total   | 300       | 100         | 100           |                    | Total   | 300       | 100     | 100           |                    |
| Missing | 0         | 0           |               |                    | Missing | 0         | 0       |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100     |               |                    |
| SC11    |           |             |               |                    | SC12    |           |         |               |                    |
|         | Frequency | Percent     | Valid Percent | Cumulative Percent |         | Frequency | Percent | Valid Percent | Cumulative Percent |
| 1       | 21        | 7           | 7             | 7                  | 1       | 39        | 13      | 13            | 13                 |
| 2       | 99        | 33          | 33            | 40                 | 2       | 93        | 31      | 31            | 44                 |
| 3       | 81        | 27          | 27            | 67                 | 3       | 114       | 38      | 38            | 82                 |
| 4       | 84        | 28          | 28            | 95                 | 4       | 45        | 15      | 15            | 97                 |
| 5       | 15        | 5           | 5             | 100                | 5       | 9         | 3       | 3             | 100                |
| Total   | 300       | 100         | 100           |                    | Total   | 300       | 100     | 100           |                    |
| Missing | 0         | 0           |               |                    | Missing | 0         | 0       |               |                    |
| Total   | 300       | 100         |               |                    | Total   | 300       | 100     |               |                    |

## LAMPIRAN 3.4

### REGRESI

| Descriptive Statistics (Regression) |          |                |     |
|-------------------------------------|----------|----------------|-----|
|                                     | Mean     | Std. Deviation | N   |
| TOTALSC                             | 32.91346 | 5.837792136    | 104 |
| PQ1                                 | 3.153846 | 1.02179388     | 104 |
| PQ2                                 | 3.096154 | 1.056824615    | 104 |
| PQ3                                 | 2.673077 | 1.127264131    | 104 |
| PQ4                                 | 2.471154 | 0.913296927    | 104 |
| PQ5                                 | 2.894231 | 1.078638743    | 104 |
| PQ6                                 | 3.278846 | 0.841366558    | 104 |
| PQ7                                 | 2.817308 | 1.031206505    | 104 |
| PQ8                                 | 2.836538 | 1.089317743    | 104 |
| PQ9                                 | 2.836538 | 1.11573544     | 104 |
| PQ10                                | 3.336538 | 0.705189872    | 104 |
| PQ11                                | 2.615385 | 1.017399047    | 104 |
| PQ12                                | 2.788462 | 0.920880509    | 104 |
| PQ13                                | 2.807692 | 1.024713297    | 104 |
| PQ14                                | 2.980769 | 1.014274519    | 104 |
| PQ15                                | 2.778846 | 0.913296927    | 104 |
| PQ16                                | 2.528846 | 0.994711558    | 104 |
| PQ17                                | 2.836538 | 1.158426929    | 104 |
| PQ18                                | 3.173077 | 1.177806977    | 104 |
| PQ19                                | 3.211538 | 1.049022448    | 104 |
| PQ20                                | 3.519231 | 0.847391992    | 104 |
| PQ21                                | 3.759615 | 0.743844544    | 104 |
| PQ22                                | 3.596154 | 0.703931136    | 104 |
| PQ23                                | 3.548077 | 0.846234466    | 104 |
| PQ24                                | 3.605769 | 0.829296921    | 104 |
| PQ25                                | 3.528846 | 1.096833313    | 104 |
| PQ26                                | 3.211538 | 1.171448998    | 104 |
| PQ27                                | 3.75     | 1.077123101    | 104 |
| PQ28                                | 3.105769 | 1.114060789    | 104 |
| PQ29                                | 3.576923 | 0.855505389    | 104 |
| PQ30                                | 3.394231 | 0.874873297    | 104 |

| Variables Entered/Removed |                             |           |                                                                                             |
|---------------------------|-----------------------------|-----------|---------------------------------------------------------------------------------------------|
| Model                     | Variables                   | Variables | Method                                                                                      |
| 1                         | PQ3                         | .         | Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .050). |
| 2                         | PQ5                         | .         | Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .050). |
| 3                         | PQ6                         | .         | Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .050). |
| a                         | Dependent Variable: TOTALSC |           |                                                                                             |

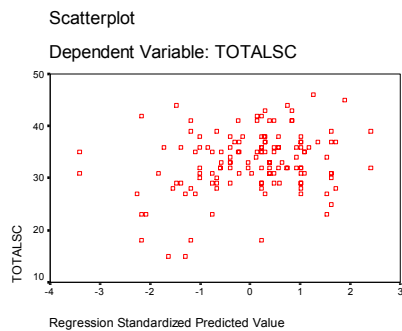
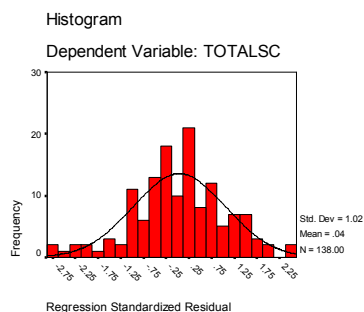
| Model Summary |                                       |             |                   |                            |                   |            |     |     |               |
|---------------|---------------------------------------|-------------|-------------------|----------------------------|-------------------|------------|-----|-----|---------------|
| Model         | R                                     | R Square    | Adjusted R Square | Std. Error of the Estimate | Change Statistics |            | df1 | df2 | Sig. F Change |
|               |                                       |             |                   |                            | R Square          | F Change   |     |     |               |
| 1             | 0.196900711                           | 0.03876989  | 0.029346066       | 5.751496195                | 0.03876989        | 4.11402926 | 1   | 102 | 0.045135456   |
| 2             | 0.280339649                           | 0.078590319 | 0.060344583       | 5.658911971                | 0.039820429       | 4.36490237 | 1   | 101 | 0.03919978    |
| 3             | 0.349292682                           | 0.122005378 | 0.095665539       | 5.55153609                 | 0.043415059       | 4.94479781 | 1   | 100 | 0.028419219   |
| a             | Predictors: (Constant), PQ3           |             |                   |                            |                   |            |     |     |               |
| b             | Predictors: (Constant), PQ3, PQ5      |             |                   |                            |                   |            |     |     |               |
| c             | Predictors: (Constant), PQ3, PQ5, PQ6 |             |                   |                            |                   |            |     |     |               |
| d             | Dependent Variable: TOTALSC           |             |                   |                            |                   |            |     |     |               |

| ANOVA |                                       |                |     |             |          |          |
|-------|---------------------------------------|----------------|-----|-------------|----------|----------|
| Model |                                       | Sum of Squares | df  | Mean Square | F        | Sig.     |
| 1     | Regression                            | 136.0908886    | 1   | 136.0908886 | 4.114029 | 0.045135 |
|       | Residual                              | 3374.130265    | 102 | 33.07970848 |          |          |
|       | Total                                 | 3510.221154    | 103 |             |          |          |
| 2     | Regression                            | 275.8693999    | 2   | 137.9347    | 4.307325 | 0.016027 |
|       | Residual                              | 3234.351754    | 101 | 32.02328469 |          |          |
|       | Total                                 | 3510.221154    | 103 |             |          |          |
| 3     | Regression                            | 428.2658578    | 3   | 142.7552859 | 4.631971 | 0.004476 |
|       | Residual                              | 3081.955296    | 100 | 30.81955296 |          |          |
|       | Total                                 | 3510.221154    | 103 |             |          |          |
| a     | Predictors: (Constant), PQ3           |                |     |             |          |          |
| b     | Predictors: (Constant), PQ3, PQ5      |                |     |             |          |          |
| c     | Predictors: (Constant), PQ3, PQ5, PQ6 |                |     |             |          |          |
| d     | Dependent Variable: TOTALSC           |                |     |             |          |          |

| Coefficients |                             |              |              |              |              |                               |              |              |              |             |                         |             |          |
|--------------|-----------------------------|--------------|--------------|--------------|--------------|-------------------------------|--------------|--------------|--------------|-------------|-------------------------|-------------|----------|
| Model        | Unstandardized Coefficients |              | Standardized | t            | Sig.         | 95% Confidence Interval for B |              | Correlations |              |             | Collinearity Statistics |             |          |
|              | B                           | Std. Error   | Beta         |              |              | Lower Bound                   | Upper Bound  | Zero-order   | Partial      | Part        | Tolerance               | VIF         |          |
| 1 (Constant) | 37.68720749                 | 2.42019162   |              | 15.57199322  | 1.03246E-28  | 32.88676889                   | 42.48764609  |              |              |             |                         |             |          |
|              | PQ3                         | -1.356474259 | 0.668771672  | -0.196900711 | -2.028306994 | 0.045135456                   | -2.682979699 | -0.029968819 | -0.196900711 | -0.19690071 | -0.19690071             | 1           | 1        |
| 2 (Constant) | 35.05369671                 | 2.694284007  |              | 13.01039408  | 2.57183E-23  | 29.70896199                   | 40.39843142  |              |              |             |                         |             |          |
|              | PQ3                         | -1.461575823 | 0.659926395  | -0.21215686  | -2.214575823 | 0.029023911                   | -1.770692272 | -0.152459374 | -0.196900711 | -0.21521242 | -0.21153954             | 0.994188974 | 1.005845 |
| 3 (Constant) | 1.148354021                 | 0.549652906  | 0.200132903  | 2.089234877  | 0.039199878  | 0.057990511                   | 2.23871753   | 0.183960167  | 0.203535085  | 0.199550567 | 0.994188974             | 1.005845    |          |
|              | PQ5                         | 38.19375401  | 2.996715913  |              | 12.74520345  | 1.1244E-22                    | 32.24835499  | 44.13915303  |              |             |                         |             |          |
| 4 (Constant) | -1.609263431                | 0.650802305  | -0.233594639 | -2.472737756 | 0.015095097  | -2.900436668                  | -0.318090194 | -0.196900711 | -0.24004399  | -0.23169891 | 0.983834922             | 1.016431    |          |
|              | PQ5                         | -1.259047629 | 0.541516282  | -0.219424369 | -2.325041131 | 0.022090779                   | -2.33340051  | -0.184694748 | -0.183960167 | -0.22646357 | -0.21785953             | 0.985787752 | 1.014417 |
| 5 (Constant) | -1.088564591                | 0.489530702  | -0.210199299 | -2.223690133 | 0.028419219  | -2.05977956                   | -0.117349621 | -0.169577556 | -0.217067    | -0.20836281 | 0.982602501             | 1.017706    |          |
|              | PQ6                         |              |              |              |              |                               |              |              |              |             |                         |             |          |
| a            | Dependent Variable: TOTALSC |              |              |              |              |                               |              |              |              |             |                         |             |          |

| Collinearity Diagnostics |           |                             |                 |                      |          |          |          |
|--------------------------|-----------|-----------------------------|-----------------|----------------------|----------|----------|----------|
| Model                    | Dimension | Eigen value                 | Condition Index | Variance Proportions |          |          |          |
|                          |           |                             |                 | (Constant)           | PQ3      | PQ5      | PQ6      |
| 1                        | 1         | 1.972469                    | 1               | 0.013765             | 0.013765 |          |          |
|                          | 2         | 0.027531                    | 8.464393        | 0.986235             | 0.986235 |          |          |
| 2                        | 1         | 2.879099                    | 1               | 0.005002             | 0.006282 | 0.014648 |          |
|                          | 2         | 0.095239                    | 5.498215        | 0.035682             | 0.149466 | 0.892832 |          |
|                          | 3         | 0.025662                    | 10.59207        | 0.959316             | 0.844251 | 0.09252  |          |
| 3                        | 1         | 3.750924                    | 1               | 0.002291             | 0.003608 | 0.008412 | 0.009441 |
|                          | 2         | 0.133919                    | 5.292347        | 0.001535             | 0.026483 | 0.223109 | 0.763481 |
|                          | 3         | 0.092991                    | 6.351112        | 0.029889             | 0.209614 | 0.706262 | 0.062935 |
|                          | 4         | 0.022167                    | 13.00825        | 0.966284             | 0.760295 | 0.062217 | 0.164143 |
| a                        |           | Dependent Variable: TOTALSC |                 |                      |          |          |          |

| Residuals Statistics |          |                             |          |                |     |
|----------------------|----------|-----------------------------|----------|----------------|-----|
|                      | Minimum  | Maximum                     | Mean     | Std. Deviation | N   |
| Predicted Value      | 25.96366 | 37.83429                    | 32.99434 | 2.242852943    | 138 |
| Residual             | -15.3567 | 14.07946                    | 0.230296 | 5.63593992     | 138 |
| Std. Predicted Value | -3.40827 | 2.413237                    | 0.039665 | 1.099924017    | 138 |
| Std. Residual        | -2.76621 | 2.536138                    | 0.041483 | 1.015203689    | 138 |
| a                    |          | Dependent Variable: TOTALSC |          |                |     |



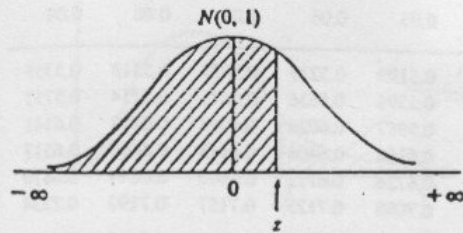
LAMPIRAN 3.5  
UJI PERBEDAAN KINERJA ANTARA  
FLEXI DENGAN ESIA

| <i>One-Sample Statistics (T-Test)</i> |          |             |                       |                        |
|---------------------------------------|----------|-------------|-----------------------|------------------------|
|                                       | <i>N</i> | <i>Mean</i> | <i>Std. Deviation</i> | <i>Std. Error Mean</i> |
| PQ1                                   | 273      | 3.186813187 | 1.006363078           | 0.060907864            |
| PQ2                                   | 297      | 3.070707071 | 1.077276269           | 0.062509909            |
| PQ3                                   | 292      | 2.879733474 | 1.187619925           | 0.069500199            |
| PQ4                                   | 285      | 2.459649123 | 0.954577491           | 0.056544291            |
| PQ5                                   | 294      | 2.925285715 | 1.027246017           | 0.059910204            |
| PQ6                                   | 275      | 3.232727273 | 0.910413106           | 0.054899976            |
| PQ7                                   | 162      | 2.796296296 | 1.010128144           | 0.079363162            |
| PQ8                                   | 292      | 2.715753425 | 1.067172669           | 0.062451557            |
| PQ9                                   | 288      | 2.8125      | 1.075341288           | 0.063365093            |
| PQ10                                  | 258      | 3.244186047 | 0.664895999           | 0.041394617            |
| PQ11                                  | 144      | 2.625       | 1.036906372           | 0.086408864            |
| PQ12                                  | 168      | 2.785714286 | 0.942304839           | 0.072700397            |
| PQ13                                  | 147      | 2.836734694 | 1.060116408           | 0.087436928            |
| PQ14                                  | 228      | 3.157894737 | 0.920438005           | 0.060957496            |
| PQ15                                  | 153      | 2.803921569 | 0.888958761           | 0.071868056            |
| PQ16                                  | 199      | 2.567839196 | 0.895652155           | 0.063491098            |
| PQ17                                  | 285      | 3.084210526 | 1.159739753           | 0.068697054            |
| PQ18                                  | 294      | 3.275510204 | 1.142841906           | 0.066651894            |
| PQ19                                  | 278      | 3.294964029 | 1.033400593           | 0.061979249            |
| PQ20                                  | 273      | 3.494505495 | 0.955329013           | 0.057819142            |
| PQ21                                  | 273      | 3.703296703 | 0.846634846           | 0.051240672            |
| PQ22                                  | 291      | 3.556701031 | 0.689363607           | 0.04041121             |
| PQ23                                  | 292      | 3.482876712 | 0.859381988           | 0.050291527            |
| PQ24                                  | 291      | 3.659793814 | 0.812233166           | 0.047613951            |
| PQ25                                  | 300      | 3.55        | 1.044575092           | 0.060308571            |
| PQ26                                  | 293      | 3.293515358 | 1.174439066           | 0.068611463            |
| PQ27                                  | 300      | 3.77        | 1.086755165           | 0.062743839            |
| PQ28                                  | 286      | 3.132867133 | 1.074343617           | 0.06352727             |
| PQ29                                  | 300      | 3.51        | 0.819841734           | 0.047333585            |
| PQ30                                  | 288      | 3.395833333 | 0.849010492           | 0.050028423            |

| One-Sample Test |                |     |                 |                 |                         |              |            |
|-----------------|----------------|-----|-----------------|-----------------|-------------------------|--------------|------------|
| Var             | Test Value = 3 |     |                 |                 |                         |              | Kesimpulan |
|                 | t              | df  | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval |              |            |
|                 |                |     |                 |                 | Lower                   | Upper        |            |
| PQ1             | 3.0671439      | 272 | 0.002379        | 0.186813187     | 0.066902422             | 0.306723952  | Tertinggal |
| PQ2             | 1.1311338      | 296 | 0.258914        | 0.070707071     | -0.052313101            | 0.193727243  | Bersaing   |
| PQ3             | -1.730449      | 291 | 3.5E-06         | -0.32876712     | -0.465553909            | -0.191980337 | Bersaing   |
| PQ4             | -9.556241      | 284 | 6.07E-19        | -0.54035088     | -0.651649954            | -0.429051801 | Unggul     |
| PQ5             | -1.247104      | 293 | 0.000215        | -0.2244898      | -0.342398677            | -0.106580915 | Bersaing   |
| PQ6             | 4.2391143      | 274 | 3.07E-05        | 0.232727273     | 0.124647906             | 0.340806639  | Tertinggal |
| PQ7             | -2.566729      | 161 | 0.011177        | -0.2037037      | -0.360430719            | -0.046976689 | Unggul     |
| PQ8             | -4.551473      | 291 | 7.84E-06        | -0.28424658     | -0.407160579            | -0.161332572 | Unggul     |
| PQ9             | -2.959042      | 287 | 0.003343        | -0.1875         | -0.312219239            | -0.062780761 | Unggul     |
| PQ10            | 5.8989807      | 257 | 1.15E-08        | 0.244186047     | 0.162670215             | 0.325701878  | Tertinggal |
| PQ11            | -4.339833      | 143 | 2.68E-05        | -0.375          | -0.545803728            | -0.204196272 | Unggul     |
| PQ12            | -2.947518      | 167 | 0.003662        | -0.21428571     | -0.357815996            | -0.070755433 | Unggul     |
| PQ13            | -1.867235      | 146 | 0.063874        | -0.16326531     | -0.336070898            | 0.009540286  | Bersaing   |
| PQ14            | 2.5902432      | 227 | 0.010212        | 0.157894737     | 0.037779849             | 0.278009624  | Tertinggal |
| PQ15            | -2.728311      | 152 | 0.007116        | -0.19607843     | -0.338067714            | -0.054089149 | Unggul     |
| PQ16            | -6.806636      | 198 | 1.16E-10        | -0.4321608      | -0.557366359            | -0.306955249 | Unggul     |
| PQ17            | 1.2258244      | 284 | 0.22128         | 0.084210526     | -0.051009468            | 0.219430521  | Bersaing   |
| PQ18            | 4.133569       | 293 | 4.67E-05        | 0.275510204     | 0.144333049             | 0.406687359  | Tertinggal |
| PQ19            | 4.7590772      | 277 | 3.14E-06        | 0.294964029     | 0.172953846             | 0.416974212  | Tertinggal |
| PQ20            | 8.5526259      | 272 | 8.88E-16        | 0.494505495     | 0.380675571             | 0.608335418  | Tertinggal |
| PQ21            | 13.725361      | 272 | 6.21E-33        | 0.703296703     | 0.602417971             | 0.804175436  | Tertinggal |
| PQ22            | 13.775906      | 290 | 1.47E-33        | 0.556701031     | 0.47716458              | 0.636237482  | Tertinggal |
| PQ23            | 9.601552       | 291 | 3.84E-19        | 0.482876712     | 0.383895466             | 0.581857958  | Tertinggal |
| PQ24            | 13.857153      | 290 | 7.43E-34        | 0.659793814     | 0.566081088             | 0.753506541  | Tertinggal |
| PQ25            | 9.1197651      | 299 | 1.14E-17        | 0.55            | 0.431316974             | 0.668683026  | Tertinggal |
| PQ26            | 4.2779347      | 292 | 2.56E-05        | 0.293515358     | 0.15847967              | 0.428551047  | Tertinggal |
| PQ27            | 12.272121      | 299 | 2.59E-28        | 0.77            | 0.646524538             | 0.893475462  | Tertinggal |
| PQ28            | 2.0914976      | 285 | 0.037369        | 0.132867133     | 0.007824972             | 0.257909294  | Tertinggal |
| PQ29            | 10.774591      | 299 | 4.34E-23        | 0.51            | 0.416850835             | 0.603149165  | Tertinggal |
| PQ30            | 7.9121689      | 287 | 5.53E-14        | 0.395833333     | 0.297364184             | 0.494302483  | Tertinggal |

LAMPIRAN 4.1  
TABEL-TABEL STATISTIK

Table B-3 Cumulative distribution function for the standard normal distribution(SND)



For the SND, the table gives the cdf value at  $z$ , that is,

$$\int_{-\infty}^z N(0, 1) dz$$

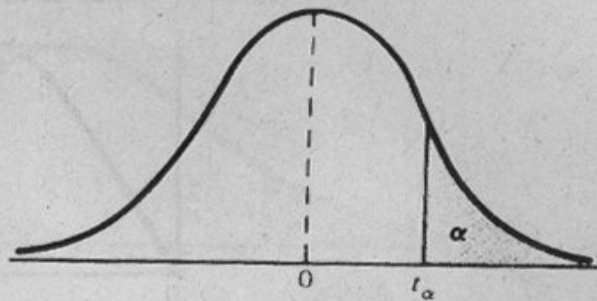
| $z$  | 0.00    | 0.01    | 0.02    | 0.03    | 0.04    | 0.05    | 0.06    | 0.07    | 0.08    | 0.09 →  |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| -3.5 | 0.00023 | 0.00022 | 0.00022 | 0.00021 | 0.00020 | 0.00019 | 0.00019 | 0.00018 | 0.00017 | 0.00017 |
| -3.4 | 0.00034 | 0.00033 | 0.00031 | 0.00030 | 0.00029 | 0.00028 | 0.00027 | 0.00026 | 0.00025 | 0.00024 |
| -3.3 | 0.00048 | 0.00047 | 0.00045 | 0.00043 | 0.00042 | 0.00040 | 0.00039 | 0.00038 | 0.00036 | 0.00035 |
| -3.2 | 0.00069 | 0.00066 | 0.00064 | 0.00062 | 0.00060 | 0.00058 | 0.00056 | 0.00054 | 0.00052 | 0.00050 |
| -3.1 | 0.00097 | 0.00094 | 0.00090 | 0.00087 | 0.00085 | 0.00082 | 0.00079 | 0.00076 | 0.00074 | 0.00071 |
| -3.0 | 0.00135 | 0.00131 | 0.00126 | 0.00122 | 0.00118 | 0.00114 | 0.00111 | 0.00107 | 0.00104 | 0.00100 |
| -2.9 | 0.0019  | 0.0018  | 0.0017  | 0.0017  | 0.0016  | 0.0016  | 0.0015  | 0.0015  | 0.0014  | 0.0014  |
| -2.8 | 0.0026  | 0.0025  | 0.0024  | 0.0023  | 0.0023  | 0.0022  | 0.0021  | 0.0021  | 0.0020  | 0.0019  |
| -2.7 | 0.0035  | 0.0034  | 0.0033  | 0.0032  | 0.0031  | 0.0030  | 0.0029  | 0.0028  | 0.0027  | 0.0026  |
| -2.6 | 0.0047  | 0.0045  | 0.0044  | 0.0043  | 0.0041  | 0.0040  | 0.0039  | 0.0038  | 0.0037  | 0.0036  |
| -2.5 | 0.0062  | 0.0060  | 0.0059  | 0.0057  | 0.0055  | 0.0054  | 0.0052  | 0.0051  | 0.0049  | 0.0048  |
| -2.4 | 0.0082  | 0.0080  | 0.0078  | 0.0075  | 0.0073  | 0.0071  | 0.0069  | 0.0068  | 0.0066  | 0.0064  |
| -2.3 | 0.0107  | 0.0104  | 0.0102  | 0.0099  | 0.0096  | 0.0094  | 0.0091  | 0.0089  | 0.0087  | 0.0084  |
| -2.2 | 0.0139  | 0.0136  | 0.0132  | 0.0129  | 0.0125  | 0.0122  | 0.0119  | 0.0116  | 0.0113  | 0.0110  |
| -2.1 | 0.0179  | 0.0174  | 0.0170  | 0.0166  | 0.0162  | 0.0158  | 0.0154  | 0.0150  | 0.0146  | 0.0143  |
| -2.0 | 0.0228  | 0.0222  | 0.0217  | 0.0212  | 0.0207  | 0.0202  | 0.0197  | 0.0192  | 0.0188  | 0.0183  |
| -1.9 | 0.0287  | 0.0281  | 0.0274  | 0.0268  | 0.0262  | 0.0256  | 0.0250  | 0.0244  | 0.0239  | 0.0233  |
| -1.8 | 0.0359  | 0.0351  | 0.0344  | 0.0336  | 0.0329  | 0.0322  | 0.0314  | 0.0307  | 0.0301  | 0.0294  |
| -1.7 | 0.0446  | 0.0436  | 0.0427  | 0.0418  | 0.0409  | 0.0401  | 0.0392  | 0.0384  | 0.0375  | 0.0367  |
| -1.6 | 0.0548  | 0.0537  | 0.0526  | 0.0516  | 0.0505  | 0.0495  | 0.0485  | 0.0475  | 0.0465  | 0.0455  |
| -1.5 | 0.0668  | 0.0655  | 0.0643  | 0.0630  | 0.0618  | 0.0606  | 0.0594  | 0.0582  | 0.0571  | 0.0559  |
| -1.4 | 0.0808  | 0.0793  | 0.0778  | 0.0764  | 0.0749  | 0.0735  | 0.0721  | 0.0706  | 0.0694  | 0.0681  |
| -1.3 | 0.0968  | 0.0951  | 0.0934  | 0.0916  | 0.0901  | 0.0885  | 0.0869  | 0.0853  | 0.0838  | 0.0823  |
| -1.2 | 0.1151  | 0.1131  | 0.1112  | 0.1093  | 0.1075  | 0.1057  | 0.1038  | 0.1020  | 0.1003  | 0.0985  |
| -1.1 | 0.1357  | 0.1335  | 0.1314  | 0.1292  | 0.1271  | 0.1251  | 0.1230  | 0.1210  | 0.1190  | 0.1170  |
| -1.0 | 0.1587  | 0.1562  | 0.1539  | 0.1515  | 0.1492  | 0.1469  | 0.1446  | 0.1423  | 0.1401  | 0.1379  |
| -0.9 | 0.1841  | 0.1814  | 0.1788  | 0.1762  | 0.1736  | 0.1711  | 0.1685  | 0.1660  | 0.1635  | 0.1611  |
| -0.8 | 0.2119  | 0.2090  | 0.2061  | 0.2033  | 0.2005  | 0.1977  | 0.1949  | 0.1922  | 0.1894  | 0.1867  |
| -0.7 | 0.2420  | 0.2389  | 0.2358  | 0.2327  | 0.2297  | 0.2266  | 0.2236  | 0.2207  | 0.2177  | 0.2148  |
| -0.6 | 0.2743  | 0.2709  | 0.2676  | 0.2643  | 0.2611  | 0.2578  | 0.2546  | 0.2514  | 0.2483  | 0.2451  |
| -0.5 | 0.3085  | 0.3050  | 0.3015  | 0.2981  | 0.2946  | 0.2912  | 0.2877  | 0.2843  | 0.2810  | 0.2776  |
| -0.4 | 0.3446  | 0.3409  | 0.3372  | 0.3336  | 0.3300  | 0.3264  | 0.3228  | 0.3192  | 0.3156  | 0.3121  |
| -0.3 | 0.3821  | 0.3783  | 0.3745  | 0.3707  | 0.3669  | 0.3632  | 0.3594  | 0.3557  | 0.3520  | 0.3483  |
| -0.2 | 0.4207  | 0.4168  | 0.4129  | 0.4090  | 0.4052  | 0.4013  | 0.3974  | 0.3936  | 0.3897  | 0.3859  |
| -0.1 | 0.4602  | 0.4562  | 0.4522  | 0.4483  | 0.4443  | 0.4404  | 0.4364  | 0.4325  | 0.4286  | 0.4247  |
| -0.0 | 0.5000  | 0.4960  | 0.4920  | 0.4880  | 0.4840  | 0.4801  | 0.4761  | 0.4721  | 0.4681  | 0.4641  |

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**Table B-3 Cumulative distribution function for the standard normal distribution(SND)**

| $z$  | 0.00    | 0.01    | 0.02    | 0.03    | 0.04    | 0.05    | 0.06    | 0.07    | 0.08    | 0.09    |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| +0.0 | 0.5000  | 0.5040  | 0.5080  | 0.5120  | 0.5160  | 0.5199  | 0.5239  | 0.5279  | 0.5319  | 0.5359  |
| +0.1 | 0.5398  | 0.5438  | 0.5478  | 0.5517  | 0.5557  | 0.5596  | 0.5636  | 0.5675  | 0.5714  | 0.5753  |
| +0.2 | 0.5793  | 0.5832  | 0.5871  | 0.5910  | 0.5948  | 0.5987  | 0.6026  | 0.6064  | 0.6103  | 0.6141  |
| +0.3 | 0.6179  | 0.6217  | 0.6255  | 0.6293  | 0.6331  | 0.6368  | 0.6406  | 0.6443  | 0.6480  | 0.6517  |
| +0.4 | 0.6554  | 0.6591  | 0.6628  | 0.6664  | 0.6700  | 0.6736  | 0.6772  | 0.6808  | 0.6844  | 0.6870  |
| +0.5 | 0.6915  | 0.6950  | 0.6985  | 0.7019  | 0.7054  | 0.7088  | 0.7123  | 0.7157  | 0.7190  | 0.7224  |
| +0.6 | 0.7257  | 0.7291  | 0.7324  | 0.7357  | 0.7389  | 0.7422  | 0.7454  | 0.7486  | 0.7517  | 0.7549  |
| +0.7 | 0.7580  | 0.7611  | 0.7642  | 0.7673  | 0.7704  | 0.7734  | 0.7764  | 0.7794  | 0.7823  | 0.7852  |
| +0.8 | 0.7881  | 0.7910  | 0.7939  | 0.7967  | 0.7995  | 0.8023  | 0.8051  | 0.8079  | 0.8106  | 0.8133  |
| +0.9 | 0.8159  | 0.8186  | 0.8212  | 0.8238  | 0.8264  | 0.8289  | 0.8315  | 0.8340  | 0.8365  | 0.8389  |
| +1.0 | 0.8413  | 0.8438  | 0.8461  | 0.8485  | 0.8508  | 0.8531  | 0.8554  | 0.8577  | 0.8599  | 0.8621  |
| +1.1 | 0.8643  | 0.8665  | 0.8686  | 0.8708  | 0.8729  | 0.8749  | 0.8770  | 0.8790  | 0.8810  | 0.8830  |
| +1.2 | 0.8849  | 0.8869  | 0.8888  | 0.8907  | 0.8925  | 0.8944  | 0.8962  | 0.8980  | 0.8997  | 0.9015  |
| +1.3 | 0.9032  | 0.9049  | 0.9066  | 0.9082  | 0.9099  | 0.9115  | 0.9131  | 0.9147  | 0.9162  | 0.9177  |
| +1.4 | 0.9192  | 0.9207  | 0.9222  | 0.9236  | 0.9251  | 0.9265  | 0.9279  | 0.9292  | 0.9306  | 0.9319  |
| +1.5 | 0.9332  | 0.9345  | 0.9357  | 0.9370  | 0.9382  | 0.9394  | 0.9406  | 0.9418  | 0.9429  | 0.9441  |
| +1.6 | 0.9452  | 0.9463  | 0.9474  | 0.9484  | 0.9495  | 0.9505  | 0.9515  | 0.9525  | 0.9535  | 0.9545  |
| +1.7 | 0.9554  | 0.9564  | 0.9573  | 0.9582  | 0.9591  | 0.9599  | 0.9608  | 0.9616  | 0.9625  | 0.9633  |
| +1.8 | 0.9641  | 0.9649  | 0.9656  | 0.9664  | 0.9671  | 0.9678  | 0.9686  | 0.9693  | 0.9699  | 0.9706  |
| +1.9 | 0.9713  | 0.9719  | 0.9726  | 0.9732  | 0.9738  | 0.9744  | 0.9750  | 0.9756  | 0.9761  | 0.9767  |
| +2.0 | 0.9773  | 0.9778  | 0.9783  | 0.9788  | 0.9793  | 0.9798  | 0.9803  | 0.9808  | 0.9812  | 0.9817  |
| +2.1 | 0.9821  | 0.9826  | 0.9830  | 0.9834  | 0.9838  | 0.9842  | 0.9846  | 0.9850  | 0.9854  | 0.9857  |
| +2.2 | 0.9861  | 0.9864  | 0.9868  | 0.9871  | 0.9875  | 0.9878  | 0.9881  | 0.9884  | 0.9887  | 0.9890  |
| +2.3 | 0.9893  | 0.9896  | 0.9898  | 0.9901  | 0.9904  | 0.9906  | 0.9909  | 0.9911  | 0.9913  | 0.9916  |
| +2.4 | 0.9918  | 0.9920  | 0.9922  | 0.9925  | 0.9927  | 0.9929  | 0.9931  | 0.9932  | 0.9934  | 0.9936  |
| +2.5 | 0.9938  | 0.9940  | 0.9941  | 0.9943  | 0.9945  | 0.9946  | 0.9948  | 0.9949  | 0.9951  | 0.9952  |
| +2.6 | 0.9953  | 0.9955  | 0.9956  | 0.9957  | 0.9959  | 0.9960  | 0.9961  | 0.9962  | 0.9963  | 0.9964  |
| +2.7 | 0.9965  | 0.9966  | 0.9967  | 0.9968  | 0.9969  | 0.9970  | 0.9971  | 0.9972  | 0.9973  | 0.9974  |
| +2.8 | 0.9974  | 0.9975  | 0.9976  | 0.9977  | 0.9977  | 0.9978  | 0.9979  | 0.9979  | 0.9980  | 0.9981  |
| +2.9 | 0.9981  | 0.9982  | 0.9983  | 0.9983  | 0.9984  | 0.9984  | 0.9985  | 0.9985  | 0.9986  | 0.9986  |
| +3.0 | 0.99865 | 0.99869 | 0.99874 | 0.99878 | 0.99882 | 0.99886 | 0.99889 | 0.99893 | 0.99896 | 0.99900 |
| +3.1 | 0.99903 | 0.99906 | 0.99910 | 0.99913 | 0.99915 | 0.99918 | 0.99921 | 0.99924 | 0.99926 | 0.99929 |
| +3.2 | 0.99931 | 0.99934 | 0.99936 | 0.99938 | 0.99940 | 0.99942 | 0.99944 | 0.99946 | 0.99948 | 0.99950 |
| +3.3 | 0.99952 | 0.99953 | 0.99955 | 0.99957 | 0.99958 | 0.99960 | 0.99961 | 0.99962 | 0.99964 | 0.99965 |
| +3.4 | 0.99966 | 0.99967 | 0.99969 | 0.99970 | 0.99971 | 0.99972 | 0.99973 | 0.99974 | 0.99975 | 0.99976 |
| +3.5 | 0.99977 | 0.99978 | 0.99978 | 0.99979 | 0.99980 | 0.99981 | 0.99981 | 0.99982 | 0.99983 | 0.99983 |

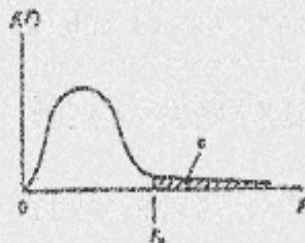
**TABEL A.5\***  
 Nilai Kritik Sebaran  $t$



| $\nu$ | $\alpha$ |       |        |        |        |
|-------|----------|-------|--------|--------|--------|
|       | 0.10     | 0.05  | 0.025  | 0.01   | 0.005  |
| 1     | 3.078    | 6.314 | 12.706 | 31.821 | 63.657 |
| 2     | 1.886    | 2.920 | 4.303  | 6.965  | 9.925  |
| 3     | 1.638    | 2.353 | 3.182  | 4.541  | 5.841  |
| 4     | 1.533    | 2.132 | 2.776  | 3.747  | 4.604  |
| 5     | 1.476    | 2.015 | 2.571  | 3.365  | 4.032  |
| 6     | 1.440    | 1.943 | 2.447  | 3.143  | 3.707  |
| 7     | 1.415    | 1.895 | 2.365  | 2.998  | 3.499  |
| 8     | 1.397    | 1.860 | 2.306  | 2.896  | 3.355  |
| 9     | 1.383    | 1.833 | 2.262  | 2.821  | 3.250  |
| 10    | 1.372    | 1.812 | 2.228  | 2.764  | 3.169  |
| 11    | 1.363    | 1.796 | 2.201  | 2.718  | 3.106  |
| 12    | 1.356    | 1.782 | 2.179  | 2.681  | 3.055  |
| 13    | 1.350    | 1.771 | 2.160  | 2.650  | 3.012  |
| 14    | 1.345    | 1.761 | 2.145  | 2.624  | 2.977  |
| 15    | 1.341    | 1.753 | 2.131  | 2.602  | 2.947  |
| 16    | 1.337    | 1.746 | 2.120  | 2.583  | 2.921  |
| 17    | 1.333    | 1.740 | 2.110  | 2.567  | 2.898  |
| 18    | 1.330    | 1.734 | 2.101  | 2.552  | 2.878  |
| 19    | 1.328    | 1.729 | 2.093  | 2.539  | 2.861  |
| 20    | 1.325    | 1.725 | 2.086  | 2.528  | 2.845  |
| 21    | 1.323    | 1.721 | 2.080  | 2.518  | 2.831  |
| 22    | 1.321    | 1.717 | 2.074  | 2.508  | 2.819  |
| 23    | 1.319    | 1.714 | 2.069  | 2.500  | 2.807  |
| 24    | 1.318    | 1.711 | 2.064  | 2.492  | 2.797  |
| 25    | 1.316    | 1.708 | 2.060  | 2.485  | 2.787  |
| 26    | 1.315    | 1.706 | 2.056  | 2.479  | 2.779  |
| 27    | 1.314    | 1.703 | 2.052  | 2.473  | 2.771  |
| 28    | 1.313    | 1.701 | 2.048  | 2.467  | 2.763  |
| 29    | 1.311    | 1.699 | 2.045  | 2.462  | 2.756  |
| inf.  | 1.282    | 1.645 | 1.960  | 2.326  | 2.576  |

**PENENTUAN JUMLAH SAMPEL DARI POPULASI TERTENTU  
DENGAN TARAF KESALAHAN 1%, 5%, DAN 10%**

| N   | s   |     |     | N    | s   |     |     | N       | s   |     |     |
|-----|-----|-----|-----|------|-----|-----|-----|---------|-----|-----|-----|
|     | 1%  | 5%  | 10% |      | 1%  | 5%  | 10% |         | 1%  | 5%  | 10% |
| 10  | 10  | 10  | 10  | 280  | 197 | 155 | 138 | 2800    | 537 | 310 | 247 |
| 15  | 15  | 14  | 14  | 290  | 202 | 158 | 140 | 3000    | 543 | 312 | 248 |
| 20  | 19  | 19  | 19  | 300  | 207 | 161 | 143 | 3500    | 558 | 317 | 251 |
| 25  | 24  | 23  | 23  | 320  | 216 | 167 | 147 | 4000    | 569 | 320 | 254 |
| 30  | 29  | 28  | 27  | 340  | 225 | 172 | 151 | 4500    | 578 | 323 | 255 |
| 35  | 33  | 32  | 31  | 360  | 234 | 177 | 155 | 5000    | 586 | 326 | 257 |
| 40  | 38  | 36  | 35  | 380  | 242 | 182 | 158 | 6000    | 598 | 329 | 259 |
| 45  | 42  | 40  | 39  | 400  | 250 | 186 | 162 | 7000    | 606 | 332 | 261 |
| 50  | 47  | 44  | 42  | 420  | 257 | 191 | 165 | 8000    | 613 | 334 | 263 |
| 55  | 51  | 48  | 46  | 440  | 265 | 195 | 168 | 9000    | 618 | 335 | 263 |
| 60  | 55  | 51  | 49  | 460  | 272 | 198 | 171 | 10000   | 622 | 336 | 263 |
| 65  | 59  | 55  | 53  | 480  | 279 | 202 | 173 | 15000   | 635 | 340 | 266 |
| 70  | 63  | 58  | 56  | 500  | 285 | 205 | 176 | 20000   | 642 | 342 | 267 |
| 75  | 67  | 62  | 59  | 550  | 301 | 213 | 182 | 30000   | 649 | 344 | 268 |
| 80  | 71  | 65  | 62  | 600  | 315 | 221 | 187 | 40000   | 653 | 345 | 269 |
| 85  | 75  | 68  | 65  | 650  | 329 | 227 | 191 | 50000   | 655 | 346 | 269 |
| 90  | 79  | 72  | 68  | 700  | 341 | 233 | 195 | 75000   | 658 | 346 | 270 |
| 95  | 83  | 75  | 71  | 750  | 352 | 238 | 199 | 100000  | 659 | 347 | 270 |
| 100 | 87  | 78  | 73  | 800  | 363 | 243 | 202 | 150000  | 661 | 347 | 270 |
| 110 | 94  | 84  | 78  | 850  | 373 | 247 | 205 | 200000  | 661 | 347 | 270 |
| 120 | 102 | 89  | 83  | 900  | 382 | 251 | 208 | 250000  | 662 | 348 | 270 |
| 130 | 109 | 95  | 88  | 950  | 391 | 255 | 211 | 300000  | 662 | 348 | 270 |
| 140 | 116 | 100 | 92  | 1000 | 399 | 258 | 213 | 350000  | 662 | 348 | 270 |
| 150 | 122 | 105 | 97  | 1100 | 414 | 265 | 217 | 400000  | 662 | 348 | 270 |
| 160 | 129 | 110 | 101 | 1200 | 427 | 270 | 221 | 450000  | 663 | 348 | 270 |
| 170 | 135 | 114 | 105 | 1300 | 440 | 275 | 224 | 500000  | 663 | 348 | 270 |
| 180 | 142 | 119 | 108 | 1400 | 450 | 279 | 227 | 550000  | 663 | 348 | 270 |
| 190 | 148 | 123 | 112 | 1500 | 460 | 283 | 229 | 600000  | 663 | 348 | 270 |
| 200 | 154 | 127 | 115 | 1600 | 469 | 286 | 232 | 650000  | 663 | 348 | 270 |
| 210 | 160 | 131 | 118 | 1700 | 477 | 289 | 234 | 700000  | 663 | 348 | 270 |
| 220 | 165 | 135 | 122 | 1800 | 485 | 292 | 235 | 750000  | 663 | 348 | 270 |
| 230 | 171 | 139 | 125 | 1900 | 492 | 294 | 237 | 800000  | 663 | 348 | 271 |
| 240 | 176 | 142 | 127 | 2000 | 498 | 297 | 238 | 850000  | 663 | 348 | 271 |
| 250 | 182 | 146 | 130 | 2200 | 510 | 301 | 241 | 900000  | 663 | 348 | 271 |
| 260 | 187 | 149 | 133 | 2400 | 520 | 304 | 243 | 950000  | 663 | 348 | 271 |
| 270 | 192 | 152 | 135 | 2600 | 529 | 307 | 245 | 1000000 | 663 | 348 | 271 |
|     |     |     |     |      |     |     |     | ∞       | 664 | 349 | 272 |

Table B-6 The F distribution ( $\alpha = 0.10, 0.05, \text{ and } 0.01$ )

Given  $\alpha_1$  and  $\alpha_2$ , the table gives the  $F_0$  value with  $\alpha$  of the area above it, that is,

$$P(F \geq F_0) = \alpha$$

|            |          | $\alpha_2$ (numerator) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |      |      |      |      |      |      |      |      |      |      |
|------------|----------|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|------|------|------|------|------|------|------|------|------|------|------|
| $\alpha_1$ | $\alpha$ | 1                      | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 14   | 15   | 16   | 18   | 20   | 24   | 30   | 40   | 60   | 100  | 200  | $\infty$ |      |      |      |      |      |      |      |      |      |      |      |
| 1          | .10      | 1.70                   | 1.58 | 1.51 | 1.46 | 1.42 | 1.39 | 1.37 | 1.35 | 1.34 | 1.33 | 1.32 | 1.31 | 1.30 | 1.29 | 1.28 | 1.27 | 1.26 | 1.25 | 1.24 | 1.23 | 1.22 | 1.21 | 1.20 | 1.19     | 1.18 | 1.17 | 1.16 | 1.15 | 1.14 | 1.13 | 1.12 | 1.11 | 1.10 | 1.09 | 1.08 |
|            | .05      | 1.85                   | 1.73 | 1.66 | 1.61 | 1.57 | 1.54 | 1.51 | 1.49 | 1.47 | 1.46 | 1.45 | 1.44 | 1.43 | 1.42 | 1.41 | 1.40 | 1.39 | 1.38 | 1.37 | 1.36 | 1.35 | 1.34 | 1.33 | 1.32     | 1.31 | 1.30 | 1.29 | 1.28 | 1.27 | 1.26 | 1.25 | 1.24 | 1.23 | 1.22 | 1.21 |
|            | .01      | 2.16                   | 2.02 | 1.94 | 1.88 | 1.84 | 1.81 | 1.78 | 1.76 | 1.74 | 1.73 | 1.72 | 1.71 | 1.70 | 1.69 | 1.68 | 1.67 | 1.66 | 1.65 | 1.64 | 1.63 | 1.62 | 1.61 | 1.60 | 1.59     | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 |
| 2          | .10      | 1.98                   | 1.85 | 1.78 | 1.73 | 1.69 | 1.66 | 1.63 | 1.61 | 1.59 | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 | 1.47 | 1.46 | 1.45 | 1.44     | 1.43 | 1.42 | 1.41 | 1.40 | 1.39 | 1.38 | 1.37 | 1.36 | 1.35 | 1.34 | 1.33 |
|            | .05      | 2.15                   | 2.01 | 1.94 | 1.88 | 1.84 | 1.81 | 1.78 | 1.76 | 1.74 | 1.73 | 1.72 | 1.71 | 1.70 | 1.69 | 1.68 | 1.67 | 1.66 | 1.65 | 1.64 | 1.63 | 1.62 | 1.61 | 1.60 | 1.59     | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 |
|            | .01      | 2.49                   | 2.33 | 2.25 | 2.19 | 2.15 | 2.12 | 2.09 | 2.07 | 2.05 | 2.04 | 2.03 | 2.02 | 2.01 | 2.00 | 1.99 | 1.98 | 1.97 | 1.96 | 1.95 | 1.94 | 1.93 | 1.92 | 1.91 | 1.90     | 1.89 | 1.88 | 1.87 | 1.86 | 1.85 | 1.84 | 1.83 | 1.82 | 1.81 | 1.80 | 1.79 |
| 3          | .10      | 2.00                   | 1.87 | 1.80 | 1.75 | 1.71 | 1.68 | 1.65 | 1.63 | 1.61 | 1.59 | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 | 1.47 | 1.46 | 1.45     | 1.44 | 1.43 | 1.42 | 1.41 | 1.40 | 1.39 | 1.38 | 1.37 | 1.36 | 1.35 |      |
|            | .05      | 2.17                   | 2.02 | 1.95 | 1.89 | 1.85 | 1.82 | 1.79 | 1.77 | 1.75 | 1.73 | 1.72 | 1.71 | 1.70 | 1.69 | 1.68 | 1.67 | 1.66 | 1.65 | 1.64 | 1.63 | 1.62 | 1.61 | 1.60 | 1.59     | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 |
|            | .01      | 2.51                   | 2.34 | 2.26 | 2.20 | 2.16 | 2.13 | 2.10 | 2.08 | 2.06 | 2.04 | 2.03 | 2.02 | 2.01 | 2.00 | 1.99 | 1.98 | 1.97 | 1.96 | 1.95 | 1.94 | 1.93 | 1.92 | 1.91 | 1.90     | 1.89 | 1.88 | 1.87 | 1.86 | 1.85 | 1.84 | 1.83 | 1.82 | 1.81 | 1.80 | 1.79 |
| 4          | .10      | 2.01                   | 1.88 | 1.81 | 1.76 | 1.72 | 1.69 | 1.66 | 1.64 | 1.62 | 1.60 | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 | 1.47 | 1.46 | 1.45     | 1.44 | 1.43 | 1.42 | 1.41 | 1.40 | 1.39 | 1.38 | 1.37 | 1.36 | 1.35 |      |
|            | .05      | 2.18                   | 2.03 | 1.96 | 1.90 | 1.86 | 1.83 | 1.80 | 1.78 | 1.76 | 1.74 | 1.72 | 1.71 | 1.70 | 1.69 | 1.68 | 1.67 | 1.66 | 1.65 | 1.64 | 1.63 | 1.62 | 1.61 | 1.60 | 1.59     | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 |
|            | .01      | 2.52                   | 2.35 | 2.27 | 2.21 | 2.17 | 2.14 | 2.11 | 2.09 | 2.07 | 2.05 | 2.03 | 2.02 | 2.01 | 2.00 | 1.99 | 1.98 | 1.97 | 1.96 | 1.95 | 1.94 | 1.93 | 1.92 | 1.91 | 1.90     | 1.89 | 1.88 | 1.87 | 1.86 | 1.85 | 1.84 | 1.83 | 1.82 | 1.81 | 1.80 | 1.79 |
| 5          | .10      | 2.02                   | 1.89 | 1.82 | 1.77 | 1.73 | 1.70 | 1.67 | 1.65 | 1.63 | 1.61 | 1.59 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 | 1.47 | 1.46 | 1.45     | 1.44 | 1.43 | 1.42 | 1.41 | 1.40 | 1.39 | 1.38 | 1.37 | 1.36 | 1.35 |      |
|            | .05      | 2.19                   | 2.04 | 1.97 | 1.91 | 1.87 | 1.84 | 1.81 | 1.79 | 1.77 | 1.75 | 1.73 | 1.71 | 1.70 | 1.69 | 1.68 | 1.67 | 1.66 | 1.65 | 1.64 | 1.63 | 1.62 | 1.61 | 1.60 | 1.59     | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 |
|            | .01      | 2.53                   | 2.36 | 2.28 | 2.22 | 2.18 | 2.15 | 2.12 | 2.10 | 2.08 | 2.06 | 2.04 | 2.02 | 2.01 | 2.00 | 1.99 | 1.98 | 1.97 | 1.96 | 1.95 | 1.94 | 1.93 | 1.92 | 1.91 | 1.90     | 1.89 | 1.88 | 1.87 | 1.86 | 1.85 | 1.84 | 1.83 | 1.82 | 1.81 | 1.80 | 1.79 |

The degrees of freedom are  $\alpha_1$  for the numerator and  $\alpha_2$  for the denominator.

Table B-6 The F distribution ( $\alpha = 0.10, 0.05, \text{ and } 0.01$ )

|            |          | $\alpha_2$ (denominator) |      |      |      |      |      |      |      |      |        |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------------|----------|--------------------------|------|------|------|------|------|------|------|------|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| $\alpha_1$ | $\alpha$ | 1                        | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10     | 11   | 12   | 14   | 15   | 16   | 18   | 20   | 24   | 30   | 40   | 60   | 100  | 200  | $\infty$ |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 1          | .10      | 1.70                     | 1.58 | 1.51 | 1.46 | 1.42 | 1.39 | 1.37 | 1.35 | 1.34 | 1.33   | 1.32 | 1.31 | 1.30 | 1.29 | 1.28 | 1.27 | 1.26 | 1.25 | 1.24 | 1.23 | 1.22 | 1.21 | 1.20 | 1.19     | 1.18 | 1.17 | 1.16 | 1.15 | 1.14 | 1.13 | 1.12 | 1.11 | 1.10 | 1.09 | 1.08 |      |      |      |
|            | .05      | 1.85                     | 1.73 | 1.66 | 1.61 | 1.57 | 1.54 | 1.51 | 1.49 | 1.47 | 1.46   | 1.45 | 1.44 | 1.43 | 1.42 | 1.41 | 1.40 | 1.39 | 1.38 | 1.37 | 1.36 | 1.35 | 1.34 | 1.33 | 1.32     | 1.31 | 1.30 | 1.29 | 1.28 | 1.27 | 1.26 | 1.25 | 1.24 | 1.23 | 1.22 | 1.21 |      |      |      |
|            | .01      | 2.16                     | 2.02 | 1.94 | 1.88 | 1.84 | 1.81 | 1.78 | 1.76 | 1.74 | 1.73   | 1.72 | 1.71 | 1.70 | 1.69 | 1.68 | 1.67 | 1.66 | 1.65 | 1.64 | 1.63 | 1.62 | 1.61 | 1.60 | 1.59     | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 |      |      |      |
| 2          | .10      | 1.98                     | 1.85 | 1.78 | 1.73 | 1.69 | 1.66 | 1.63 | 1.61 | 1.59 | 1.58   | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 | 1.47 | 1.46 | 1.45 | 1.44     | 1.43 | 1.42 | 1.41 | 1.40 | 1.39 | 1.38 | 1.37 | 1.36 | 1.35 | 1.34 | 1.33 |      |      |      |
|            | .05      | 2.15                     | 2.01 | 1.94 | 1.88 | 1.84 | 1.81 | 1.78 | 1.76 | 1.74 | 1.73   | 1.72 | 1.71 | 1.70 | 1.69 | 1.68 | 1.67 | 1.66 | 1.65 | 1.64 | 1.63 | 1.62 | 1.61 | 1.60 | 1.59     | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 |      |      |      |
|            | .01      | 2.49                     | 2.33 | 2.25 | 2.19 | 2.15 | 2.12 | 2.09 | 2.07 | 2.05 | 2.04   | 2.03 | 2.02 | 2.01 | 2.00 | 1.99 | 1.98 | 1.97 | 1.96 | 1.95 | 1.94 | 1.93 | 1.92 | 1.91 | 1.90     | 1.89 | 1.88 | 1.87 | 1.86 | 1.85 | 1.84 | 1.83 | 1.82 | 1.81 | 1.80 | 1.79 |      |      |      |
| 3          | .10      | 2.00                     | 1.87 | 1.80 | 1.75 | 1.71 | 1.68 | 1.65 | 1.63 | 1.61 | 1.59   | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 | 1.47 | 1.46 | 1.45     | 1.44 | 1.43 | 1.42 | 1.41 | 1.40 | 1.39 | 1.38 | 1.37 | 1.36 | 1.35 |      |      |      |      |
|            | .05      | 2.17                     | 2.02 | 1.95 | 1.89 | 1.85 | 1.82 | 1.79 | 1.77 | 1.75 | 1.73   | 1.72 | 1.71 | 1.70 | 1.69 | 1.68 | 1.67 | 1.66 | 1.65 | 1.64 | 1.63 | 1.62 | 1.61 | 1.60 | 1.59     | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 |      |      |      |
|            | .01      | 2.51                     | 2.34 | 2.26 | 2.20 | 2.16 | 2.13 | 2.10 | 2.08 | 2.06 | 2.04   | 2.03 | 2.02 | 2.01 | 2.00 | 1.99 | 1.98 | 1.97 | 1.96 | 1.95 | 1.94 | 1.93 | 1.92 | 1.91 | 1.90     | 1.89 | 1.88 | 1.87 | 1.86 | 1.85 | 1.84 | 1.83 | 1.82 | 1.81 | 1.80 | 1.79 |      |      |      |
| 4          | .10      | 2.01                     | 1.88 | 1.81 | 1.76 | 1.72 | 1.69 | 1.66 | 1.64 | 1.62 | 1.60   | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 | 1.47 | 1.46 | 1.45     | 1.44 | 1.43 | 1.42 | 1.41 | 1.40 | 1.39 | 1.38 | 1.37 | 1.36 | 1.35 |      |      |      |      |
|            | .05      | 2.18                     | 2.03 | 1.96 | 1.90 | 1.86 | 1.83 | 1.80 | 1.78 | 1.76 | 1.74   | 1.72 | 1.71 | 1.70 | 1.69 | 1.68 | 1.67 | 1.66 | 1.65 | 1.64 | 1.63 | 1.62 | 1.61 | 1.60 | 1.59     | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 |      |      |      |
|            | .01      | 2.52                     | 2.35 | 2.27 | 2.21 | 2.17 | 2.14 | 2.11 | 2.09 | 2.07 | 2.05   | 2.03 | 2.02 | 2.01 | 2.00 | 1.99 | 1.98 | 1.97 | 1.96 | 1.95 | 1.94 | 1.93 | 1.92 | 1.91 | 1.90     | 1.89 | 1.88 | 1.87 | 1.86 | 1.85 | 1.84 | 1.83 | 1.82 | 1.81 | 1.80 | 1.79 |      |      |      |
| 5          | .10      | 2.02                     | 1.89 | 1.82 | 1.77 | 1.73 | 1.70 | 1.67 | 1.65 | 1.63 | 1.61   | 1.59 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 | 1.47 | 1.46 | 1.45     | 1.44 | 1.43 | 1.42 | 1.41 | 1.40 | 1.39 | 1.38 | 1.37 | 1.36 | 1.35 |      |      |      |      |
|            | .05      | 2.19                     | 2.04 | 1.97 | 1.91 | 1.87 | 1.84 | 1.81 | 1.79 | 1.77 | 1.75   | 1.73 | 1.71 | 1.70 | 1.69 | 1.68 | 1.67 | 1.66 | 1.65 | 1.64 | 1.63 | 1.62 | 1.61 | 1.60 | 1.59     | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 |      |      |      |
|            | .01      | 2.53                     | 2.36 | 2.28 | 2.22 | 2.18 | 2.15 | 2.12 | 2.10 | 2.08 | 2.06   | 2.04 | 2.02 | 2.01 | 2.00 | 1.99 | 1.98 | 1.97 | 1.96 | 1.95 | 1.94 | 1.93 | 1.92 | 1.91 | 1.90     | 1.89 | 1.88 | 1.87 | 1.86 | 1.85 | 1.84 | 1.83 | 1.82 | 1.81 | 1.80 | 1.79 |      |      |      |
| 6          | .10      | 2.03                     | 1.90 | 1.83 | 1.78 | 1.74 | 1.71 | 1.68 | 1.66 | 1.64 | 1.62   | 1.60 | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 | 1.47 | 1.46     | 1.45 | 1.44 | 1.43 | 1.42 | 1.41 | 1.40 | 1.39 | 1.38 | 1.37 | 1.36 | 1.35 |      |      |      |
|            | .05      | 2.20                     | 2.05 | 1.98 | 1.92 | 1.88 | 1.85 | 1.82 | 1.79 | 1.77 | 1.75   | 1.73 | 1.71 | 1.70 | 1.69 | 1.68 | 1.67 | 1.66 | 1.65 | 1.64 | 1.63 | 1.62 | 1.61 | 1.60 | 1.59     | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 |      |      |      |
|            | .01      | 2.54                     | 2.37 | 2.29 | 2.23 | 2.19 | 2.16 | 2.13 | 2.10 | 2.08 | 2.06   | 2.04 | 2.02 | 2.01 | 2.00 | 1.99 | 1.98 | 1.97 | 1.96 | 1.95 | 1.94 | 1.93 | 1.92 | 1.91 | 1.90     | 1.89 | 1.88 | 1.87 | 1.86 | 1.85 | 1.84 | 1.83 | 1.82 | 1.81 | 1.80 | 1.79 |      |      |      |
| 7          | .10      | 2.04                     | 1.91 | 1.84 | 1.79 | 1.75 | 1.72 | 1.69 | 1.67 | 1.65 | 1.63   | 1.61 | 1.59 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 | 1.47 | 1.46     | 1.45 | 1.44 | 1.43 | 1.42 | 1.41 | 1.40 | 1.39 | 1.38 | 1.37 | 1.36 | 1.35 |      |      |      |
|            | .05      | 2.21                     | 2.06 | 1.99 | 1.93 | 1.89 | 1.86 | 1.83 | 1.80 | 1.78 | 1.76   | 1.74 | 1.72 | 1.70 | 1.69 | 1.68 | 1.67 | 1.66 | 1.65 | 1.64 | 1.63 | 1.62 | 1.61 | 1.60 | 1.59     | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 |      |      |      |
|            | .01      | 2.55                     | 2.38 | 2.30 | 2.24 | 2.20 | 2.17 | 2.14 | 2.11 | 2.09 | 2.07   | 2.05 | 2.03 | 2.01 | 2.00 | 1.99 | 1.98 | 1.97 | 1.96 | 1.95 | 1.94 | 1.93 | 1.92 | 1.91 | 1.90     | 1.89 | 1.88 | 1.87 | 1.86 | 1.85 | 1.84 | 1.83 | 1.82 | 1.81 | 1.80 | 1.79 |      |      |      |
| 8          | .10      | 2.05                     | 1.92 | 1.85 | 1.80 | 1.76 | 1.73 | 1.70 | 1.68 | 1.66 | 1.64   | 1.62 | 1.60 | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 | 1.47     | 1.46 | 1.45 | 1.44 | 1.43 | 1.42 | 1.41 | 1.40 | 1.39 | 1.38 | 1.37 | 1.36 | 1.35 |      |      |
|            | .05      | 2.22                     | 2.07 | 2.00 | 1.94 | 1.90 | 1.87 | 1.84 | 1.81 | 1.79 | 1.77   | 1.75 | 1.73 | 1.71 | 1.70 | 1.69 | 1.68 | 1.67 | 1.66 | 1.65 | 1.64 | 1.63 | 1.62 | 1.61 | 1.60     | 1.59 | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 |      |      |
|            | .01      | 2.56                     | 2.39 | 2.31 | 2.25 | 2.21 | 2.18 | 2.15 | 2.12 | 2.10 | 2.08   | 2.06 | 2.04 | 2.02 | 2.01 | 2.00 | 1.99 | 1.98 | 1.97 | 1.96 | 1.95 | 1.94 | 1.93 | 1.92 | 1.91     | 1.90 | 1.89 | 1.88 | 1.87 | 1.86 | 1.85 | 1.84 | 1.83 | 1.82 | 1.81 | 1.80 | 1.79 |      |      |
| 9          | .10      | 2.06                     | 1.93 | 1.86 | 1.81 | 1.77 | 1.74 | 1.71 | 1.69 | 1.67 | 1.65   | 1.63 | 1.61 | 1.59 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 | 1.47     | 1.46 | 1.45 | 1.44 | 1.43 | 1.42 | 1.41 | 1.40 | 1.39 | 1.38 | 1.37 | 1.36 | 1.35 |      |      |
|            | .05      | 2.23                     | 2.08 | 2.01 | 1.95 | 1.91 | 1.88 | 1.85 | 1.82 | 1.80 | 1.78   | 1.76 | 1.74 | 1.72 | 1.70 | 1.69 | 1.68 | 1.67 | 1.66 | 1.65 | 1.64 | 1.63 | 1.62 | 1.61 | 1.60     | 1.59 | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 |      |      |
|            | .01      | 2.57                     | 2.40 | 2.32 | 2.26 | 2.22 | 2.19 | 2.16 | 2.13 | 2.10 | 2.08   | 2.06 | 2.04 | 2.02 | 2.01 | 2.00 | 1.99 | 1.98 | 1.97 | 1.96 | 1.95 | 1.94 | 1.93 | 1.92 | 1.91     | 1.90 | 1.89 | 1.88 | 1.87 | 1.86 | 1.85 | 1.84 | 1.83 | 1.82 | 1.81 | 1.80 | 1.79 |      |      |
| 10         | .10      | 2.07                     | 1.94 | 1.87 | 1.82 | 1.78 | 1.75 | 1.72 | 1.70 | 1.68 | 1.66   | 1.64 | 1.62 | 1.60 | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48     | 1.47 | 1.46 | 1.45 | 1.44 | 1.43 | 1.42 | 1.41 | 1.40 | 1.39 | 1.38 | 1.37 | 1.36 | 1.35 |      |
|            | .05      | 2.24                     | 2.09 | 2.02 | 1.96 | 1.92 | 1.89 | 1.86 | 1.83 | 1.81 | 1.79   | 1.77 | 1.75 | 1.73 | 1.71 | 1.70 | 1.69 | 1.68 | 1.67 | 1.66 | 1.65 | 1.64 | 1.63 | 1.62 | 1.61     | 1.60 | 1.59 | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 |      |
|            | .01      | 2.58                     | 2.41 | 2.33 | 2.27 | 2.23 | 2.20 | 2.17 | 2.14 | 2.11 | 2.09   | 2.07 | 2.05 | 2.03 | 2.01 | 2.00 | 1.99 | 1.98 | 1.97 | 1.96 | 1.95 | 1.94 | 1.93 | 1.92 | 1.91     | 1.90 | 1.89 | 1.88 | 1.87 | 1.86 | 1.85 | 1.84 | 1.83 | 1.82 | 1.81 | 1.80 | 1.79 |      |      |
| 11         | .10      | 2.08                     | 1.95 | 1.88 | 1.83 | 1.79 | 1.76 | 1.73 | 1.71 | 1.69 | 1.67   | 1.65 | 1.63 | 1.61 | 1.59 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48     | 1.47 | 1.46 | 1.45 | 1.44 | 1.43 | 1.42 | 1.41 | 1.40 | 1.39 | 1.38 | 1.37 | 1.36 | 1.35 |      |
|            | .05      | 2.25                     | 2.10 | 2.03 | 1.97 | 1.93 | 1.90 | 1.87 | 1.84 | 1.82 | 1.80   | 1.78 | 1.76 | 1.74 | 1.72 | 1.70 | 1.69 | 1.68 | 1.67 | 1.66 | 1.65 | 1.64 | 1.63 | 1.62 | 1.61     | 1.60 | 1.59 | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 |      |
|            | .01      | 2.59                     | 2.42 | 2.34 | 2.28 | 2.24 | 2.21 | 2.18 | 2.15 | 2.12 | 2.10   | 2.08 | 2.06 | 2.04 | 2.02 | 2.01 | 2.00 | 1.99 | 1.98 | 1.97 | 1.96 | 1.95 | 1.94 | 1.93 | 1.92     | 1.91 | 1.90 | 1.89 | 1.88 | 1.87 | 1.86 | 1.85 | 1.84 | 1.83 | 1.82 | 1.81 | 1.80 | 1.79 |      |
| 12         | .10      | 2.09                     | 1.96 | 1.89 | 1.84 | 1.80 | 1.77 | 1.74 | 1.72 | 1.70 | 1.68   | 1.66 | 1.64 | 1.62 | 1.60 | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49     | 1.48 | 1.47 | 1.46 | 1.45 | 1.44 | 1.43 | 1.42 | 1.41 | 1.40 | 1.39 | 1.38 | 1.37 | 1.36 | 1.35 |
|            | .05      | 2.26                     | 2.11 | 2.04 | 1.98 | 1.94 | 1.91 | 1.88 | 1.85 | 1.83 | 1.81   | 1.79 | 1.77 | 1.75 | 1.73 | 1.71 | 1.70 | 1.69 | 1.68 | 1.67 | 1.66 | 1.65 | 1.64 | 1.63 | 1.62     | 1.61 | 1.60 | 1.59 | 1.58 | 1.57 | 1.56 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.49 | 1.48 |
|            | .01      | 2.60                     | 2.43 | 2.35 | 2.29 | 2.25 | 2.22 | 2.19 | 2.16 | 2.13 | 2.11   | 2.09 | 2.07 | 2.05 | 2.03 | 2.01 | 2.00 | 1.99 | 1.98 | 1.97 | 1.96 | 1.95 | 1.94 | 1.93 | 1.92     | 1.91 | 1.90 | 1.89 | 1.88 | 1.87 | 1.86 | 1.85 | 1.84 | 1.83 | 1.82 | 1.81 | 1.80 | 1.79 |      |
| 13         | .10      | 2.10                     | 1.97 | 1.90 | 1.85 | 1.81 | 1.78 | 1.75 | 1.73 | 1.71 | 1.69</ |      |      |      |      |      |      |      |      |      |      |      |      |      |          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

Table 2-4. The  $F$  distribution for  $\alpha = 0.10$ , 0.05, and 0.01

[illegible]

LAMPIRAN 4.2  
KOMENTAR NARASUMBER SEMINAR PROPOSAL

**BERITA ACARA SEMINAR PROPOSAL TUGAS AKHIR  
JURUSAN TEKNIK INDUSTRI - FAKULTAS TEKNIK - UK MARANATHA**

|                        |                                                                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| NRP                    | 0523023                                                                                                                                                 |
| NAMA                   | Shendy Sumari                                                                                                                                           |
| JUDUL PROPOSAL         | Analisis Persebaran Flak di dengan operator lain dikelilingi mahasiswa Bandung dengan menggunakan metode Persebaran Quality (Studi Kasus di PT Telkom). |
| KRS                    | KUALITAS                                                                                                                                                |
| HARI/TANGGAL           | Rabu, 12/11/2008                                                                                                                                        |
| NARA SUMBER            | 1. Ir. Christa Wirawan, MT.<br>2. Ir. Hendra Kusuma, MT.<br>3. Rudianto Muis, ST., MT.                                                                  |
| USULAN NAMA PEMBIMBING | I. Ir. Hendra Kusuma, MT.<br>II.                                                                                                                        |

**SUDAH KONTRAK TA DI KRS SEMESTER BERJALAH : YA**

**HASIL SEMINAR : SIAP Bimbingan TA (PERSAIKAN / GUGUR ?)**

**TA TUGAS AKHIR DISUAT LINTA SEMESTER : 2008/2009**

**KELOMPOK : 1**

**PEMBIMBING :**

**PEMERIKSA :**

**PEMERIKSA :**

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**FORM HASIL SEMINAR PROPOSAL**  
**JURUSAN TEKNIK INDUSTRI - FAKULTAS TEKNIK - UK MARANATHA**

|                |                                                                                                                                                      |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| NRP            | 0523023                                                                                                                                              |
| NAMA           | Shandy Sumari                                                                                                                                        |
| JUDUL PROPOSAL | Analisis Persebaran Flood dengan operator lain dikelilingi mahasiswa Bandung dengan menggunakan metode Perceived Quality (Studi Kasus di PT Telkom). |
| HARI/TANGGAL   | Rebu, 12/11/2008                                                                                                                                     |

|          |
|----------|
| KOMENTAR |
|----------|

1. Tuliskan jumlah data dimana diperoleh ke partisipannya pada 'Jangka waktu pengumpulan' ini yang akan dipakai di situ  
 2. Apa lagi identifikasi masalah, ada 'contoh kerangka' ? Info yg ada 'ke situ' !!  
 3. Penjelasan singkat apakah perlu berdasarkan 'nama lain' atau 'regimen' juga ?  
 4. Apa lagi data cara penulisan laporan penelitian

FORM HASIL SEMINAR PROPOSAL  
JURUSAN TEKNIK INDUSTRI - FAKULTAS TEKNIK - UK MARANATHA

|                |                                                                                                                                                     |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| NRP            | 0523023                                                                                                                                             |
| NAMA           | Shendy Sumarli                                                                                                                                      |
| JUDUL PROPOSAL | Analisis Persaingan Flexi dengan operator lain dikalangan mahasiswa Bandung dengan menggunakan metode Perceived Quality (Studi Kasus di PT Telkom). |
| HARI/TANGGAL   | Rabu, 12/11/2008                                                                                                                                    |

|                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------|
| KOMENTAR                                                                                                                                 |
| <p>* Statement - <del>Statement</del> harga &amp; rekonfirmasi ulang.</p> <p>* Bab I &amp; Bab II &amp; III harga &amp; perhitungan.</p> |



FORM HASIL SEMINAR PROPOSAL  
JURUSAN TEKNIK INDUSTRI - FAKULTAS TEKNIK - UK MARANATHA

|                |                                                                                                                                                    |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| NRP            | 0523023                                                                                                                                            |
| NAMA           | Shendy Sukarli                                                                                                                                     |
| JUDUL PROPOSAL | Analisis Pesebaran Flexi dengan operator lain dikalangan mahasiswa Bandung dengan menggunakan metode Perceived Quality (Studi Kasus di PT Telkom). |
| HARI/TANGGAL   | Rabu, 12/11/2008                                                                                                                                   |

|                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KOMENTAR                                                                                                                                                                                                         |
| <p>o) Bkn<sup>3</sup> hrs ada untuk tiap pernyataan</p> <p>o) masalah belum teratasi di Bas 1.</p> <p>o) Pembahasan dicik lagi !</p> <p>o) Ck lagi perumusan masalah</p> <p>o) Bagaimana menentukan variabel</p> |

LAMPIRAN 4.3  
KOMENTAR NARASUMBER SEMINAR ISI

**BERITA ACARA SEMINAR ISI TUGAS AKHIR  
JURUSAN TEKNIK INDUSTRI - FAKULTAS TEKNIK - UK MARANATHA**

|     |         |
|-----|---------|
| NRP | 0523023 |
|-----|---------|

|      |                |
|------|----------------|
| NAMA | Shandy Sumerli |
|------|----------------|

|                |                                                                                                                                                                                   |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| JUDUL PROPOSAL | Pengaruh Persepsi Kualitas Terhadap Biaya Perpindahan Merek Operator Seluler CDMA ( Studi Kasus Peralihan Segmen Pasar Mahasiswa di Kota Bandung Untuk Menggunakan Telkom Flexi ) |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                    |                           |
|--------------------|---------------------------|
| NO. SK. PEMBIMBING | 078/KJT/UKM/SKTA/XII/2008 |
|--------------------|---------------------------|

|              |                        |
|--------------|------------------------|
| HARI/TANGGAL | Kamis, 15 Januari 2009 |
|--------------|------------------------|

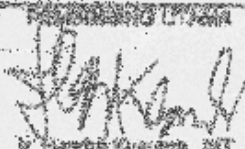
**KESIMPULAN**

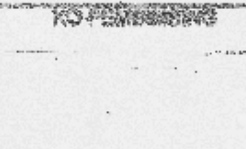
☐ Dapat diterima

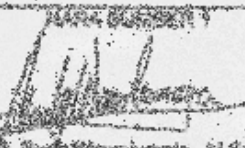
☒ Dapat diterima, dengan perbaikan, kepada pembimbing

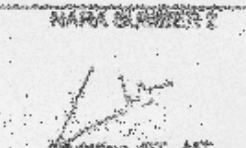
☐ Dapat diterima, dengan perbaikan, kepada pembimbing dan para seminar

☐ Gagal

|                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------|
| PEMBIMBING UTAMA<br><br>N. Haris Nugroho, ST. |
|----------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                      |
|------------------------------------------------------------------------------------------------------|
| KS PEMBIMBING<br> |
|------------------------------------------------------------------------------------------------------|

|                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------|
| NAMA SEMINAR 1<br><br>N. Rudy Wahsaningsih, ST. |
|------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------|
| NAMA SEMINAR 2<br><br>Shusana, ST., MT. |
|----------------------------------------------------------------------------------------------------------------------------|

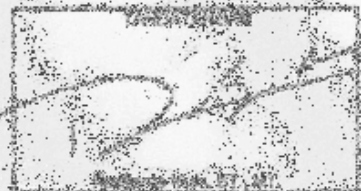
|                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------|
| NAMA SEMINAR 3<br><br>Yudianto Hala, ST., MT. |
|------------------------------------------------------------------------------------------------------------------------------------|

**FORM HASIL SEMINAR ISI**  
**JURUSAN TEKNIK INDUSTRI - FAKULTAS TEKNIK - UK MARANATHA**

|                       |                                                                                                                                                                                   |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>NRP</b>            | 0523023                                                                                                                                                                           |
| <b>NAMA</b>           | Shendy Sumarli                                                                                                                                                                    |
| <b>JUDUL PROPOSAL</b> | Pengaruh Persepsi Kualitas Terhadap Biaya Perpindahan Merek Operator Seluler CDMA ( Studi Kasus Peralihan Segmen Pasar Mahasiswa di Kota Bandung Untuk Menggunakan Telkom Flexi ) |

|                    |                        |
|--------------------|------------------------|
| <b>HARUTANGGAL</b> | Kamis, 15 Januari 2009 |
|--------------------|------------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>KOMENTAR</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <p>* Absrak : -sebutkan lagi dgn format panduan penulisan TA.</p> <ul style="list-style-type: none"> <li>- tambahkan ke. mengenai karakteristik responden yg bwa kuesioner dibagikan pd pengguna RSTN</li> <li>- apakah benar 3 var. PR memiliki pengaruh yg cukup besar ?? bkn diuji!</li> <li>- Ckr lagi: kebenaran hasil k untkn jkralan tjd perubahan!</li> </ul> <p>* Dik lagi: input data yg akan Andu gunakan dalam Switching case yg mana ☺, mana ☹<br/>         no. 13-14 → ☺ or ☹ ?</p> <p>* Kesimpulan: -berdasarkan hasil uji t, maka dapat disimpulkan bahwa terdapat pengaruh yang signifikan antara persepsi kualitas dengan biaya perpindahan merek operator seluler CDMA. Hal ini sejalan dengan penelitian sebelumnya yang menyatakan bahwa persepsi kualitas berpengaruh terhadap biaya perpindahan merek operator seluler CDMA.</p> <p>* Rekomendasi: -berdasarkan hasil uji t, maka dapat disimpulkan bahwa terdapat pengaruh yang signifikan antara persepsi kualitas dengan biaya perpindahan merek operator seluler CDMA. Hal ini sejalan dengan penelitian sebelumnya yang menyatakan bahwa persepsi kualitas berpengaruh terhadap biaya perpindahan merek operator seluler CDMA.</p> <p>* Kesimpulan: -berdasarkan hasil uji t, maka dapat disimpulkan bahwa terdapat pengaruh yang signifikan antara persepsi kualitas dengan biaya perpindahan merek operator seluler CDMA. Hal ini sejalan dengan penelitian sebelumnya yang menyatakan bahwa persepsi kualitas berpengaruh terhadap biaya perpindahan merek operator seluler CDMA.</p> <p>* Rekomendasi: -berdasarkan hasil uji t, maka dapat disimpulkan bahwa terdapat pengaruh yang signifikan antara persepsi kualitas dengan biaya perpindahan merek operator seluler CDMA. Hal ini sejalan dengan penelitian sebelumnya yang menyatakan bahwa persepsi kualitas berpengaruh terhadap biaya perpindahan merek operator seluler CDMA.</p> |

  
 Shendy Sumarli

**FORM HASIL SEMINAR ISI**  
**JURUSAN TEKNIK INDUSTRI - FAKULTAS TEKNIK - UK MARANATHA**

|                       |                                                                                                                                                                                   |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>NRP</b>            | 0523023                                                                                                                                                                           |
| <b>NAMA</b>           | Shendy Sumartit                                                                                                                                                                   |
| <b>JUDUL PROPOSAL</b> | Pengaruh Persepsi Kualitas Terhadap Biaya Perpindahan Merek Operator Seluler CDMA ( Studi Kasus Peralihan Segmen Pasar Mahasiswa di Kota Bandung Untuk Menggunakan Telkom Flexi ) |

|                     |                        |
|---------------------|------------------------|
| <b>HARI/TANGGAL</b> | Kamis, 15 Januari 2009 |
|---------------------|------------------------|

|                                                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>KOMENTAR</b></p> <ul style="list-style-type: none"> <li>• Abstrak → spasi 1</li> <li>• Judulnya mengapa mks ?</li> <li>• Metodologi penelitian → flowchart → rumus tidak</li> <li>• Urutan langkah-langkah promosi saja</li> </ul> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



|                |                                                                                                                                                                                  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NRP            | 0523023                                                                                                                                                                          |
| NAMA           | Shandy Sumarli                                                                                                                                                                   |
| JUDUL PROPOSAL | Pengaruh Persepsi Kualitas Terhadap Biaya Perpendisihan Meror Operator Sekuler CDMA ( Studi Kasus Perumahan Segmen Pasa Mahasiswa di Kota Bandung Untuk Menggunakan Telkom Flied |

PARUTANGAL Komie, 15 Januari 2008

IKOMENTAR

1. Abstrak,  
tujuan penelitian, gambaran penelitian, mana apa  
tidak jelas.
2. Tujuan penelitian : (1) tidak jelas??  
Lihat di Switchover, ada beberapa hal  
yang harus diperhatikan dalam  
menyusun tujuan penelitian.  
Lihat di Switchover, ada beberapa hal  
yang harus diperhatikan dalam  
menyusun tujuan penelitian.  
Lihat di Switchover, ada beberapa hal  
yang harus diperhatikan dalam  
menyusun tujuan penelitian.

LAMPIRAN 4.4  
KOMENTAR NARASUMBER SIDANG TUGAS AKHIR



Jurusan Teknik Industri  
Fakultas Teknik  
Universitas Kristen Maranatha

### FORM KOMENTAR DAN SARAN SIDANG TUGAS AKHIR

Nama Mahasiswa : Shendy Sumarli NRP : 0523023

Tanggal UTA : 05 Februari 2009

Judul Tugas Akhir : Pengaruh Persepsi Kualitas Terhadap Minat Berpindah Merek  
Operator Seluler CDMA (Studi Kasus Peralihan Segmen Pasar  
Mahasiswa Di Kota Bandung Untuk Menggunakan Telkom Flexi).

Komentar dan Saran :

- Penelitian variabel dan yang mungkin menyebabkan salah faktor:
  - no keterbatasan sinyal → stabilitas? level? drop call?
  - faktor penggilan → ke opr lain atau sama?
- Kritikkan valid dan yg masalah dg selanjutnya
  - no dropped call dikorsi dg GTE? Bandwidth di jaringan?

  
Hendrik Mansur, ST., MT.  
Dosen Penguji I



Jurusan Teknik Industri  
Fakultas Teknik  
Universitas Kristen Maranatha

### FORM KOMENTAR DAN SARAN SIDANG TUGAS AKHIR

Nama Mahasiswa : Shendy Sumarli NRP : 0523013

Tanggal UTA : 05 Februari 2009

Judul Tugas Akhir : Pengaruh Persepsi Kualitas Terhadap Minat Berpindah Merek  
Operator Seluler CDMA (Studi Kasus Peralihan Segmen Pasar  
Mahasiswa Di Kota Bandung Untuk Menggunakan Telkom Flexi).

Komentar dan Saran :

Urutan proses : Raising the bar → apakah meningkatkan persepsi konsumen  
terhadap Flexi kurang baik pt analog?  
→ bisa dpt meningkatkan persepsi bhu  
Flexi meningkatkan dropped call

  
Christina, ST., MT.  
Dosen Penguji 1



Jurusan Teknik Industri  
Fakultas Teknik  
Universitas Kristen Maranatha

### FORM KOMENTAR DAN SARAN SIDANG TUGAS AKHIR

Nama Mahasiswa : Shendy Sumarli NRP : 0523023

Tanggal USTA : 05 Februari 2009

Judul Tugas Akhir : Pengaruh Persepsi Kualitas Terhadap Minat Berpindah Merek  
Operator Seluler CDMA (Studi Kasus Peralihan Segmen Pasar  
Mahasiswa DI Kota Bandung Untuk Menggunakan Telkom Flexi).

Komentar dan Saran :

- \* Penelitian lapangan knp bnyk data! yg penting manus lhaat dilampiran!?
- \* Usulan promosi perlu ditub lagi!
- \* Saran persentase lha lgius 82% perlu ditambahkan!

Rudijanto Muis, ST., MT.  
Dosen Penguji 3

LAMPIRAN 4.5  
SURAT KETERANGAN TUGAS AKHIR



# MAKALAH TELEKOMUNIKASI

Jl. Pahlawan Siliwangi, 40132 Bandung 2014 - Telp. 022-2531000  
Fax. 022-2531001  
Email: info@ukm.ac.id  
Website: www.ukm.ac.id

## DUGAT KETERANGAN KONDISI : 6754/PT/MAK/TEK/AS/00000 Tentang Pengambilan Data Penelitian Tugas Akhir

**Menyebutkan :** Dalam rangka menyelesaikan studi program sarjana di Universitas Kristen Maranatha, penulis melakukan penelitian dengan judul "Analisis Perbandingan Kinerja Jaringan Operator Lain Berdasarkan Wawancara Bandwidth dan Mengukur Kualitas Jaringan Perceived Quality (Studi Kasus di PT Telkom)".

**Mengajukan :** Harap agar penelitian ini dapat diterima dan disetujui.

**Mengajukan :** Perlu adanya izin penelitian yang membolehkan mahasiswa menyelesaikan Tugas Akhir.

**Menyebutkan :** L. Hendrikus, MT.

**Mengajukan :** Penelitian ini.

Dugaan bahwa Jaringan Telekomunikasi Universitas Kristen Maranatha :

Nama : **XXXXXXXXXX**

Alamat : **XXXXXXXXXX**

Dalam rangka tugas akhir, dengan ini yang diajukan :

ANALISIS PERBANDINGAN KINERJA OPERATOR LAIN BERDASARKAN WAWANCARA BANDWIDTH DAN MENGUKUR KUALITAS JARINGAN PERCEIVED QUALITY (STUDI KASUS DI PT TELKOM).

Menyebutkan dan sedang diajukan pada tanggal 12 November 2008 dan bereslah pada tanggal 12 Februari 2009 dengan demikian agar sesuai akan data dan informasi yang diperlukan untuk menyelesaikan penelitian ini.

Demikian surat permohonan ini dibuat dan disahkan dengan ini.



LAMPIRAN 4.6  
CURRICULLUM VITAE PENULIS

## **CURRICULUM VITAE**

Nama : Shendy Sumarli  
Alamat : Komp. Permata Indah A-3, Bojong Raya, Bandung 40223  
No. Telp : (022)6034600  
No. Handphone : 08164209986  
Alamat Email : Silversaint@windowslive.com  
Pendidikan : TK Maria Bintang Laut Bandung  
SD Maria Bintang Laut Bandung  
SMP Waringin Bandung  
SMU Aloysius Bandung  
Jurusan Teknik Industri Universitas Kristen Maranatha  
Tgl Sem. Proposal : 12 November 2008  
Tgl SK Tugas Akhir : 15 Desember 2008  
Tgl Sem. Pra Sidang : 15 Januari 2009  
Tgl USTA : 5 Februari 2009  
Nilai Tugas Akhir : A