1

2

Pengantar

Performance-Based Metrics, fokus kepada pengukuran kuantitatif

Issue-Based Metrics, fokus kepada pengukuran kualitatif
→ perilaku yang menghambat penggunaan produk
→ ekspresi wajah sedang kesulitan
→ tidak melihat komponen yang seharusnya dilihat
→ misinterpretasi komponen antarmuka

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3

Pengantar

Terdapat 2 cara untuk mengidentifikasi masalah *(issue)*:
- **In-person studies** : menggunakan *think-aloud protocol*
- **Automated studies** : pengguna memberikan kesimpulan setiap menyelesasikan sebuah task.

Tantangan yang dihadapi peneliti adalah membedakan antara *real issue* dan *false issue*

4/40

4

Severity Ratings
Based on the User Experience

Masalah yang berhasil diidentifikasi berdasarkan dampak pada pengalaman pengguna.

Severity Ratings (Nielsen, 1993)
→ **low**, masalah yang mungkin membuat pengguna terganggu tetapi tidak mempengaruhi keberhasilan mencapai tujuan
→ **medium**, masalah yang mungkin terjadi dan mengakibatkan kesulitan pengguna, tapi dapat diatasi oleh pengguna
→ **high**, masalah yang mengakibatkan pengguna tidak dapat mencapai tujuannya

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5

Severity Ratings
Based on the Combination Factors

Menggabungkan dampak masalah yang dialami pengguna dan frekuensi terjadinya masalah tersebut.
- Menggunakan matrik

	Few users experiencing a problem	Many users experiencing a problem
Small impact on the user experience	Low severity	Medium severity
Large impact on the user experience	Medium severity	High severity

Figure 5.1 Severity rating scale taking into account problem frequency and impact on the user experience. Adapted from Nielsen (1993).

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6

Severity Ratings
Based on the Combination Factors

- Menggunakan pengabungan multidimensi permasalahan
  - dampak pada pengalaman pengguna
    (0 = low , 1 = medium , 2 = high)
  - prediksi terjadinya masalah
    (0 = low , 1 = medium , 2 = high)
  - dampak terhadap tujuan (dari sisi bisnis)
    (0 = low , 1 = medium , 2 = high)
  - biaya teknis/implementasi (dari sisi pengembang)
    (0 = low , 1 = medium , 2 = high)

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7

Menganalisa Masalah Usability Issues
Frequency of Unique Issues
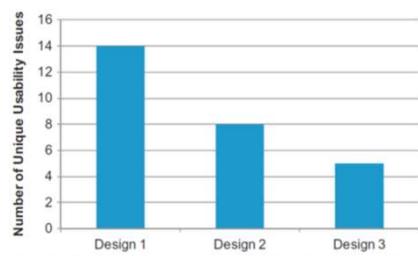
Figure 5.2 Example data showing the number of unique usability issues by design iteration.
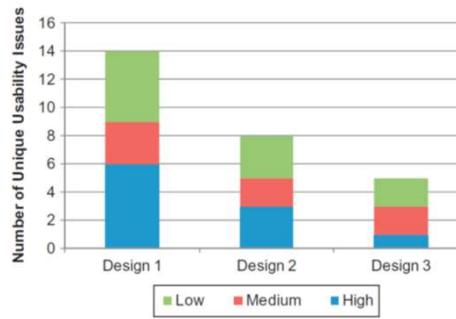
Figure 5.3 Example data showing the number of unique usability issues by design iteration, categorized by severity rating. The change in the number of high-severity issues is probably of key interest.

Menghitung jumlah masalah yang unik dari setiap desain atau setiap tampilan

8/40

8

Menganalisa Masalah Usability Issues

Frequency of Issues per Participant
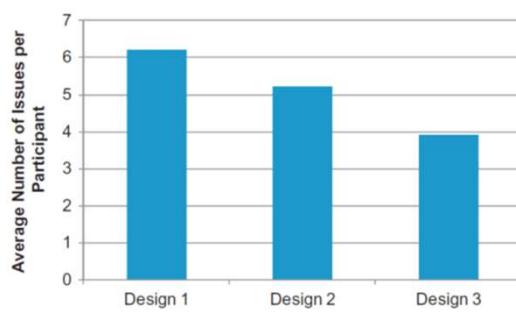
Figure 5.4 Example data showing the average number of usability issues encountered by participants in each of three usability tests.

Menghitung jumlah rata-rata masalah yang dialami oleh partisipan pada setiap desain atau tampilan

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9

Menganalisa Masalah Usability Issues

Frequency of Participant
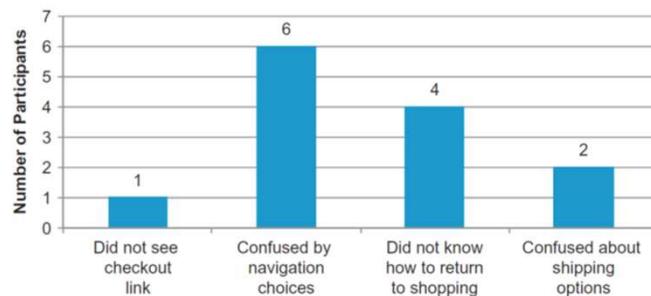
Figure 5.5 Example data showing the frequency of participants who experienced specific usability issues.

Menghitung jumlah partisipan yang mengalami masalah yang sama

10/40

10

Menganalisa Masalah Usability Issues

Issues by Category
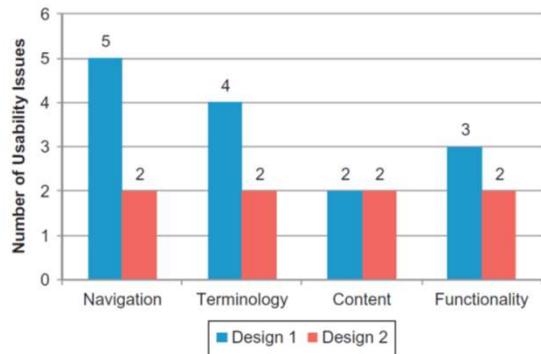
Figure 5.6 Example data showing the frequency of usability issues categorized by type. Note that both navigation and terminology issues were improved from the first to the second design iteration.

Menghitung masalah yang muncul berdasarkan kategori

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Jumlah Responden

Issues based metric banyak digunakan untuk menemukan permasalah dalam tahap desaian (→ formative test), oleh sebab itu Albert & Tullis merekomendasikan 5-10 partisipan sudah cukup
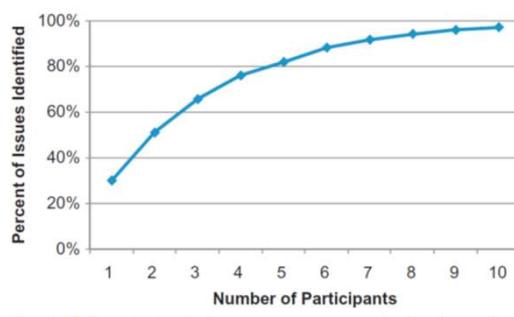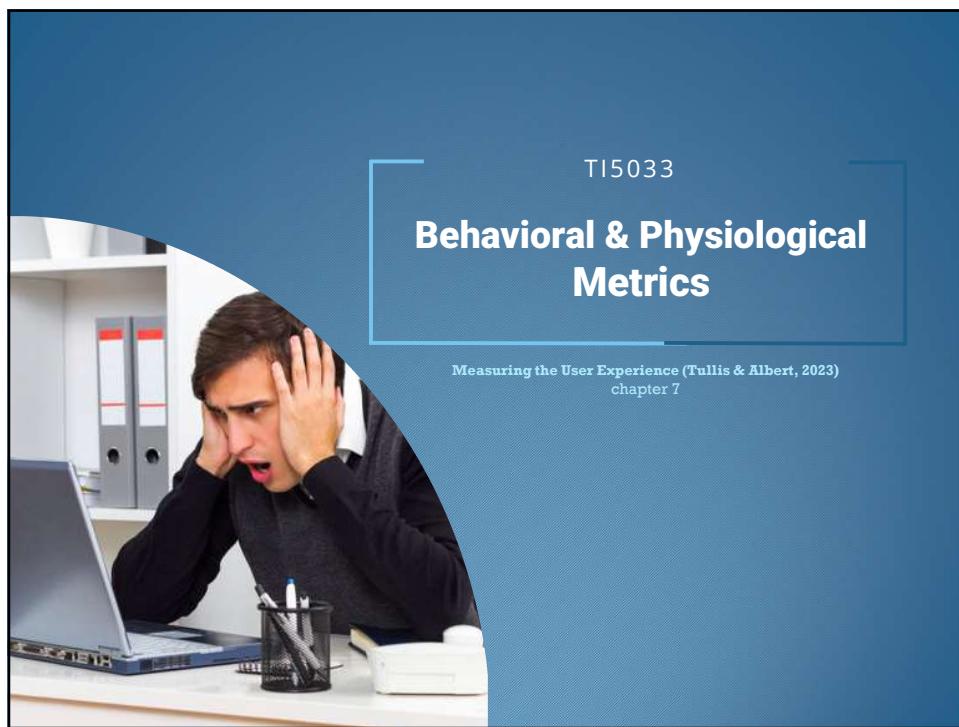
Figure 5.7 Example showing how many users are required to observe the total number of issues in a usability study, given a probability of detection.

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12

13

Pengantar
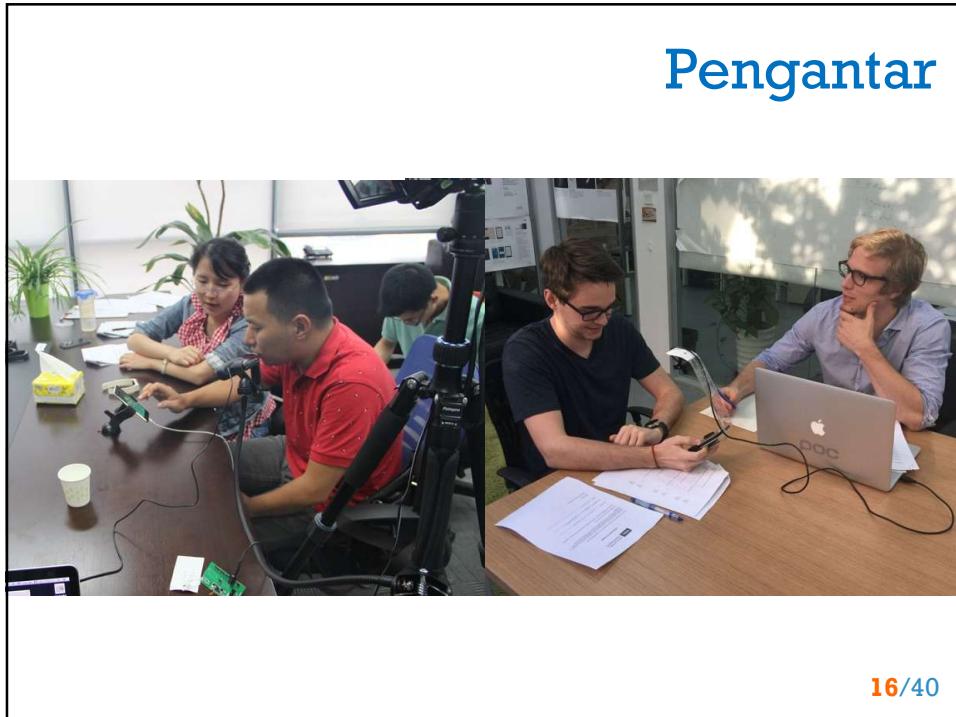
Dalam usability test, ada banyak hal lain yang dapat dipelajari selain menyelesaikan tugas atau mengisi kuesioner.
→ directly observable

14
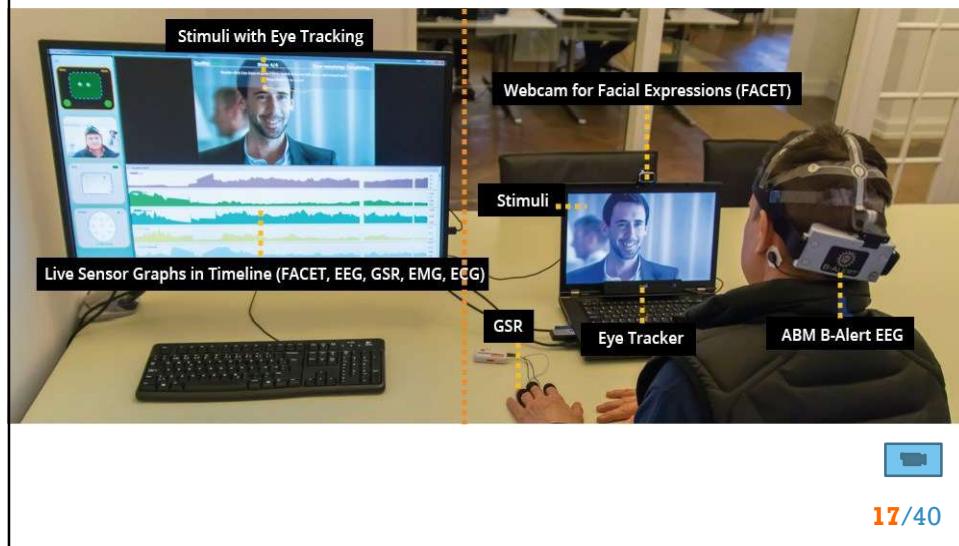
15

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Pengantar

Observing and Coding Overt Behaviors

Verbal Behaviors

KOMUNIKASI VERBAL:

- Memberikan petunjuk mengenai emosi dan kondisi mental partisipan → komentar positif / negatif
- Dapat diukur dengan *rasio komentar* , *frekuensi komentar* , dst.
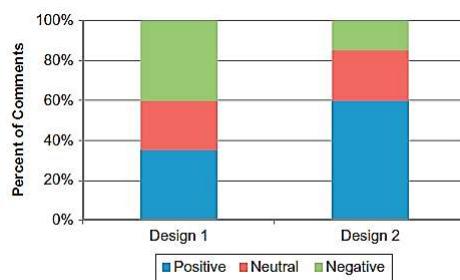
Figure 7.1 Example of coding the percentage of positive, neutral, and negative comments for two different designs

Observing and Coding Overt Behaviors
Verbal Behaviors

KOMUNIKASI VERBAL:
- Komentar dapat dibedakan berdasarkan berbagai jenis *verbal behavior*.
  - Strongly positive comments
  - Other positive comments
  - Strongly negative comments
  - Other negative comments
  - Suggestions for improvement
  - Questions
  - Variation from expectation
  - Stated confusion or lack of understanding
  - Stated frustration

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Class Activity

Mari berkomentar

1. Pilihlah sebuah aplikasi mobile yang menurut anda belum/tidak dikenal oleh teman anda.
2. Mintalah teman anda mencoba aplikasi tersebut, dan memberikan 10 komentar mengenai aplikasi tersebut (sambil mencoba aplikasi)
3. Analisalah dan buatlah kesimpulan berdasarkan komentar teman anda tersebut

20

Observing and Coding Overt Behaviors
Nonverbal Behaviors

KOMUNIKASI NON VERBAL:

- Komunikasi non verbal - **ekspresi wajah** (menguap, tersenyum, terkejut, alis berkerut dsb), **bahasa tubuh** (menggaruk-garuk kepala, melenguh, mencondongkan tubuh ke monitor, menarik nafas panjang) - dapat memberikan banyak informasi mengenai bagaimana pengalaman partisipan dalam berinteraksi dengan suatu sistem/aplikasi.
    - → frustasi ?
    - → tidak sabar ?

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Observing and Coding Overt Behaviors
Nonverbal Behaviors

KOMUNIKASI NON VERBAL:

- Sangat berguna jika produk / aplikasi membutuhkan / melibatkan fisik, persepsi atau kognisi.

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Observing and Coding Overt Behaviors

Nonverbal Behaviors

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Equipment to Capture Behaviors

Facial Expressions

Ekspresi Wajah:
- observasi langsung ,
- analisa video

FIGURE 7.3
Captured images from a video recording of a test participant performing a particularly challenging and frustrating task. One of the things we discovered in capturing these images is how fleeting facial expressions can be, with many lasting less than a second.

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Equipment to Capture Behaviors
Facial Expressions

Ekspresi Wajah:
- electromyogram sensors

FIGURE 7.4
Facial EMG sensors on a participant in a usability study. The sensors on the forehead measure electrical activity of the corrugator muscle, which is associated with frowning. The sensors on the cheek measure activity of the zygomatic muscle, which is associated with smiling. *Source:* From Benedek and Hazlett (2005). Used with permission.

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Class Activity

Bagaimana Ekspresiku?

1. Duduk berpasangan, saling berhadapan
2. Analisalah ekspresi pasangan anda saat mereka menjawab soal di ppt
   • bingung • berpikir • senang • puas
   • lucu • kaget • takut • biasa aja
3. Cocokkan hasil analisa anda dengan perasaan teman anda

SET A   SET B
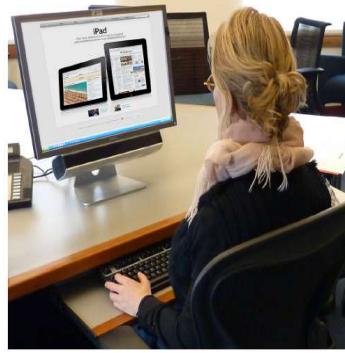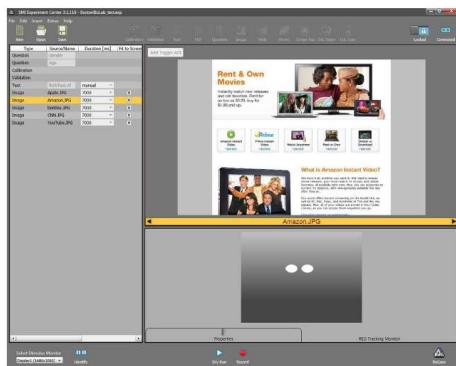
• www.proprofs.com/quiz-school/story.php?title=facial-expression-recognition-test

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Perangkat lunak SMI (www.smivision.com)

27

Perangkat lunak EYETRACKSHOP

28

29

30

Figure 7.7 Example of a heat map of the Amazon Video website showing the distribution of eye movements across all participants in the study. The brighter areas as shown in red, orange, and yellow received relatively more visual attention.

31
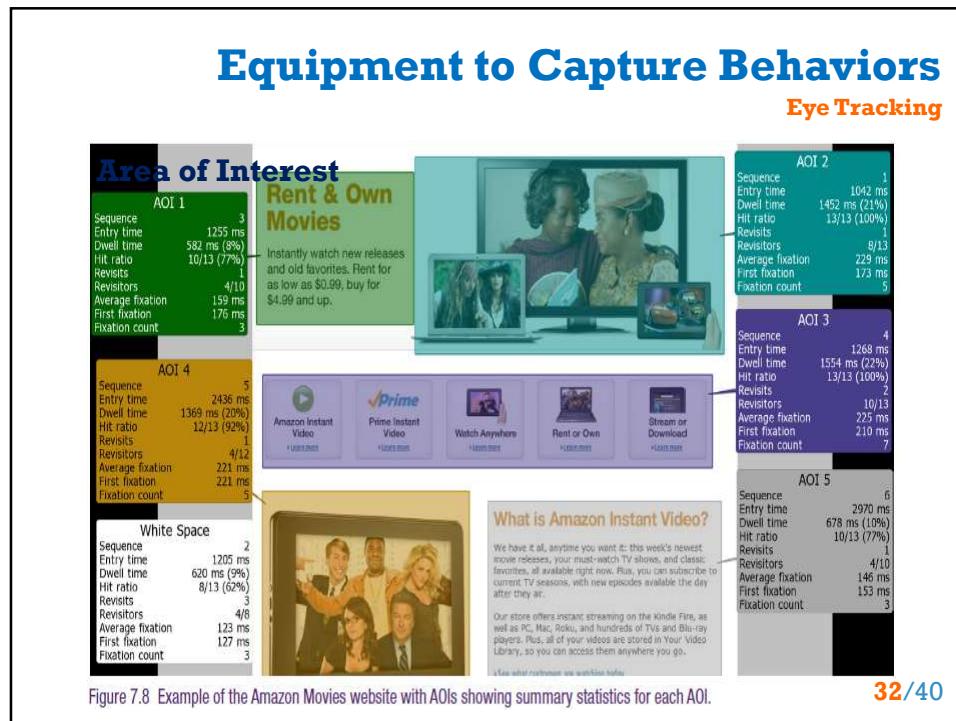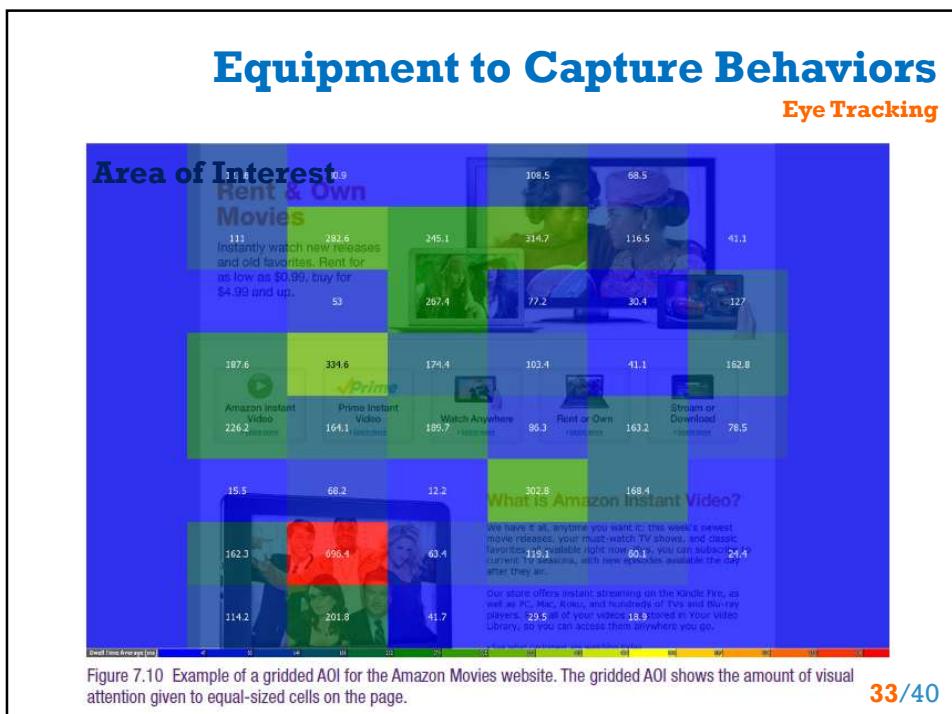
Figure 7.8 Example of the Amazon Movies website with AOIs showing summary statistics for each AOI.

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Figure 7.10 Example of a gridded AOI for the Amazon Movies website. The gridded AOI shows the amount of visual attention given to equal-sized cells on the page.

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Figure 7.9 Example of a binning chart of the same Amazon Movies website. The binning chart shows the percentage of time spent looking at each AOI during each 1-second interval.
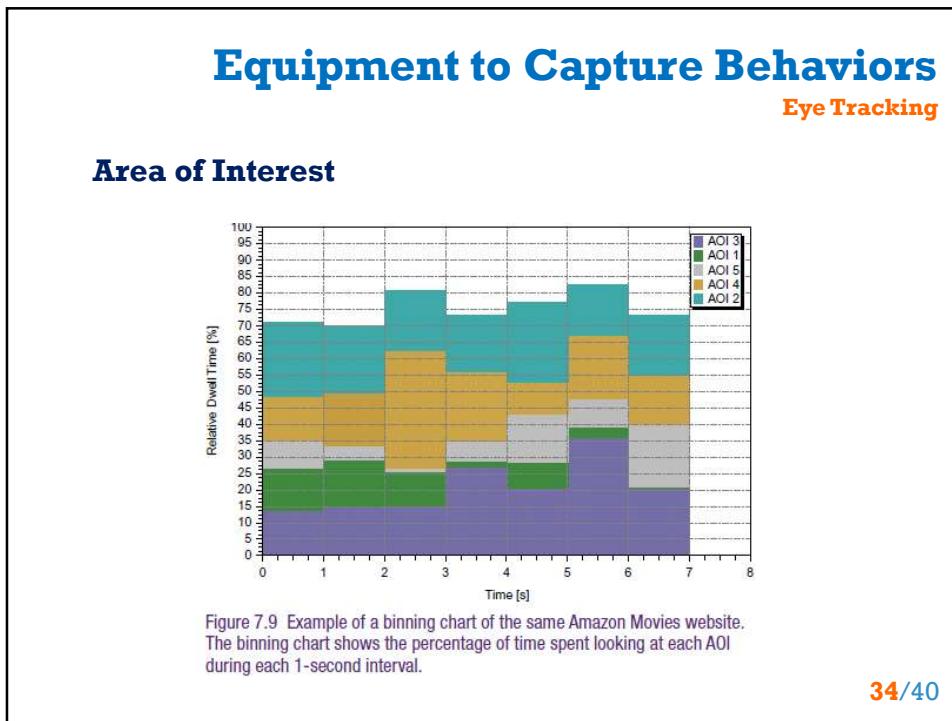
34

Equipment to Capture Behaviors

Eye Tracking

Metrik Pengukuran Pergerakan mata:
- Dwell time
- Number of fixations
- Fixation duration
- Sequence
- Time for first fixation
- Revisits
- Hit ratio
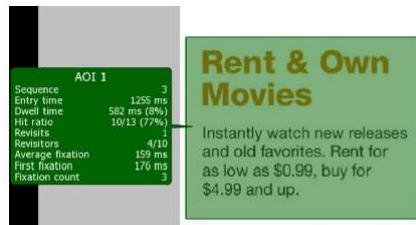
Figure 7.11 Example of common metrics calculated for a single AOI using the SMI software.

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Equipment to Capture Behaviors

Emotion

Metrik Emosi:
- Sulit dilakukan karena emosi sering tersembunyi dan kadang bertentangan dengan apa yang tampak di luar / ekspresi wajah
- Menggunakan alat
  → Affectiva Q-Sensor : mengukur aktivitas electrodermal (meningkat saat berkeringat)
    - peningkatan *cognitive load*
    - dipengaruhi oleh aktivitas fisik
    - tingkat afektifitas (perhatian)

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Equipment to Capture Behaviors
Emotion

Metrik Emosi:

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Equipment to Capture Behaviors
Emotion

Mengukur Emosi:
- Menggunakan alat
  → Blue Bubble Lab dan Emovision

Figure 7.14 Example of EmoVision application that incorporates webcam-based eye tracking and facial expression analysis in real time.
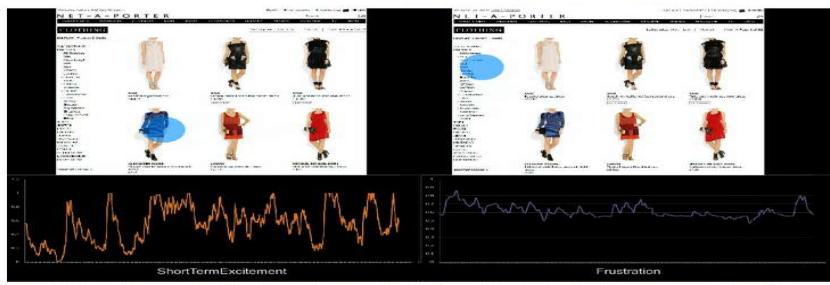
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Equipment to Capture Behaviors

Emotion

Mengukur Emosi:
- Menggunakan alat
  → Seren dan Emotiv

ShortTermExcitement   Frustration

Figure 7.17 An SMI application that allows the researcher to observe EEG feedback and eye movements in real time. **39**/40

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TERIMAKASIH

*Siapa bergaul dengan orang bijak menjadi bijak,
tetapi siapa berteman dengan orang bebal akan mengalami malapetaka*

40