BAB 7
KESIMPULAN DAN SARAN

Bab 7 membahas mengenai kesimpulan yang didapat dari penelitian ini, serta saran untuk pengembangan penelitian dan pengambil keputusan.

7.1. Kesimpulan

Pengembangan produk merupakan bagian vital untuk mempertahankan daya saing dari setiap organisasi. Desain produk yang memiliki daya tarik berdampak pada pembentukan citra serta evaluasi merek dan produk yang positif pada pelanggan. Secara umum, tahapan pengembangan produk dapat dikelompokkan menjadi tiga tahapan besar, yaitu desain konsep, pembuatan prototype, dan peluncuran produk.

Resiko kegagalan sebuah produk dapat dikurangi dengan mempertimbangkan VoC ke dalam proses desain. Salah satu cara untuk mendapatkan VoC adalah melalui *review* yang diberikan pelanggan. Jumlah *review* pelanggan yang besar membuat otomasi identifikasi dan klasifikasi kebutuhan pelanggan menjadi krusial.

Penelitian ini mengusulkan penggunaan metode *supervised learning* dalam proses kategorisasi kebutuhan. Penggunaan metode ini diilustrasikan pada kasus data *review* pelanggan pakaian wanita di suatu e-commerce. Data *review* pelanggan diberi label dan dikelompokkan sesuai dengan kriteria desain (empat kriteria) dari produk dan sentimen yang menyertai *review* tersebut. Beberapa metode *supervised learning* digunakan untuk memprediksi label kriteria dan sentimen dari tiap review. Performa tiap model kemudian dibandingkan. Dari ketiga model prediksi yang digunakan, model *Logistic Regression* memberikan performa tertinggi dengan nilai akurasi sebesar 64% untuk label “Kriteria” dan 78% untuk label “Sentimen”. Sehingga, model ini dipilih sebagai model yang digunakan untuk memprediksi label “Kriteria” dan “Sentimen” dari *review* pelanggan pakaian wanita.

Penelitian ini menemukan bahwa penggunaan *supervised learning*, yaitu klasifikasi *multi-label* dalam kategorisasi kebutuhan memudahkan pengambil keputusan dalam menentukan arah pengembangan produk. Sehingga, biaya pengembangan produk dapat dikurangi. *Framework* yang diusulkan dalam penelitian ini juga dapat digunakan secara umum untuk semua jenis produk selama kriteria produk didefinisikan dengan baik dan dapat digunakan untuk melabeli *review* pelanggan.

Penelitian ini juga menjawab salah satu kekhawatiran dalam kategorisasi kebutuhan yang diangkat oleh Shabestari dkk. (2019), yaitu ketidakjelasan aturan atau atribut utama dari suatu kebutuhan (*requirement*) yang membuat kebutuhan tersebut masuk ke kategori tertentu. Masalah ini sering muncul dalam penggunaan *unsupervised learning*. Salah satu contohnya adalah dalam penelitian Abad dkk. (2017) tentang kategorisasi kebutuhan ke dalam kategori *functional requirements* (FR) dan *non-functional requirements* (NFR), hasil tes statistik Hopkins menunjukkan bahwa data yang digunakan secara signifikan dapat dikelompokkan (kluster). Namun, performa algoritma kluster dalam mengkategorisasi NFR memberikan nilai yang buruk dan mengimplikasikan bahwa data yang digunakan tidak terseparasi dengan baik.

Contoh lainnya adalah hasil penelitian Mezghani dkk. (2018) yang menemukan bahwa pendekatan klustering untuk pengelompokkan kebutuhan dengan jumlah kebutuhan/*requirement* yang banyak menghasilkan banyak *noise* dan secara keseluruhan memberikan hasil yang kurang memuaskan.

Penelitian ini menggunakan *supervised learning* dimana data-data dilabeli dengan menggunakan kriteria yang telah terdeskripsi dengan jelas. Sehingga, distingsi antar grup kebutuhan yang didapat dari penelitian ini cenderung lebih stabil dan akurat dibandingkan dengan metode-metode *unsupervised learning*.

7.2. Saran

Berdasarkan hasil peneltiian ini, berikut adalah saran yang diberikan untuk pengambil keputusan dan peneltian selanjutnya.

7.2.1. Saran Untuk Pengambil Keputusan

Berdasarkan temuan dari penelitian ini, para pengambil keputusan sebaiknya membuat deskripsi kriteria dengan lebih spesifik. Hal ini dilakukan untuk menghindari ambiguitas saat pemberian label, terutama label kriteria produk. Dengan deskripsi kriteria dan pelabelan *review* yang lebih jelas, model prediksi akan memberikan performa yang lebih baik. Model Logistic Regression dapat digunakan untuk melakukan kategorisasi kebutuhan berdasarkan kriteria dan sentimen produk.

7.2.2. Saran Untuk Penelitian Selanjutnya

Berdasarkan temuan dari penelitian ini, penelitian selanjutnya diharapkan dapat mempertimbangkan kontekstualitas teks saat memprediksi label. Penelitian

selanjutnya juga diharapkan dapat memprediksi beberapa label teks secara bersamaan dan tidak menggunakan model yang berbeda untuk memprediksi tiap label.

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