

BAB V

PENUTUP

Pada bab ini berisikan kesimpulan dari hasil penelitian yang telah dilakukan. Selanjutnya, bab ini juga menjelaskan implikasi manajerial terkait dengan masing-masing hasil yang diperoleh dari adanya penelitian ini. Pada bab ini, peneliti juga menyampaikan keterbatasan penelitian serta saran yang sekiranya diperlukan bagi penelitian selanjutnya.

5.1 Kesimpulan

Berdasarkan hasil analisis profil responden yang dilakukan pada bab IV, maka kesimpulan yang dapat diperoleh yakni sebagai berikut:

- a. Mayoritas responden berjenis kelamin yang terdapat dalam penelitian ini didominasi oleh responden perempuan 132 (74,6%).
- b. Mayoritas responden berdasarkan usia didominasi oleh responden berusia 21-24 tahun sebanyak 107 orang (60,5%).
- c. Mayoritas responden berdasarkan rata-rata uang saku per bulan didominasi oleh responden dengan pendapatan sebesar Rp 1.000.001,00 – Rp 2.000.000,00 per bulan sebanyak 63 orang (35,6%).
- d. Mayoritas responden berdasarkan jenis pekerjaan didominasi oleh responden dengan jenis pekerjaan mahasiswa sebanyak 141 orang (79,7%).
- e. Sebanyak 176 pengguna Shopee dan 1 orang bukan pengguna Shopee.
- f. Sebanyak 176 orang pernah melakukan pembelian di Shopee dan 1 orang tidak pernah melakukan pembelian di Shopee.

- g. Sebanyak 173 orang mengetahui program *flash sale* Shopee dan 4 orang tidak mengetahui program *flash sale* Shopee.
- h. Sebanyak 164 orang pernah melakukan pembelian pada program *flash sale* Shopee dan 13 orang tidak pernah melakukan pembelian pada program *flash sale* Shopee.

Berdasarkan hasil analisis uji hipotesis yang dilakukan pada Bab IV, penelitian ini dapat memberikan kesimpulan yakni sebagai berikut:

- a. Hipotesis 1 (H1) : Keterbatasan waktu berpengaruh positif dan signifikan terhadap *perceived arousal* (Diterima).
- b. Hipotesis 2 (H2) : Keterbatasan stok barang berpengaruh positif dan signifikan terhadap *perceived arousal* (Diterima).
- c. Hipotesis 3 (H3) : Keterbatasan waktu berpengaruh positif dan signifikan terhadap pembelian impulsif (Tidak diterima).
- d. Hipotesis 4 (H4) : Keterbatasan stok barang berpengaruh positif signifikan terhadap pembelian impulsif (Diterima).
- e. Hipotesis 5 (H5) : *Perceived arousal* berpengaruh positif dan signifikan terhadap pembelian impulsif (Diterima).
- f. Hipotesis 6 (H6) : *Perceived arousal* memediasi keterbatasan waktu dan pembelian impulsif (Diterima).
- g. Hipotesis 7 (H7) : *Perceived arousal* memediasi keterbatasan stok barang dan pembelian impulsif (Diterima).

5.2 Implikasi Manajerial

Berdasarkan hasil penelitian yang telah dilakukan, maka implikasi manajerial yang dapat diberikan, yakni sebagai berikut:

- a. Pada penelitian ini telah ditemukan bahwa variabel *perceived arousal* memiliki rata-rata skor 4.21 yang termasuk dalam kategori tinggi. Ini berarti bahwa pengaruh *perceived arousal* yang diberikan konsumen *flash sale* Shopee tinggi. Oleh karena itu, sebaiknya Shopee mempertahankan strategi *flash sale* dengan manipulasi kelangkaan atau keterbatasan sehingga dapat menciptakan persaingan antar konsumen dan membuat konsumen membeli produk secara impulsif.
- b. Didalam penelitian ini didapatkan bahwa keterbatasan waktu tidak berpengaruh terhadap pembelian impulsif. Hal tersebut dapat terjadi karena Shopee mengadakan *flash sale* dalam periode yang terlalu dekat sehingga membuat konsumen berfikir bahwa mereka bisa saja mendapatkan promosi dari *flash sale* berikutnya apabila konsumen tidak mendapatkan produk dari *flash sale* sekarang. Hal ini secara tidak langsung akan mengurangi efek impulsif yang seharusnya ditimbulkan dari *flash sale*. Oleh karena itu, sebaiknya Shopee tidak mengadakan *flash sale* dalam periode yang berdekatan.
- c. Pada penelitian sebelumnya telah ditemukan bahwa keterbatasan stok barang berpengaruh signifikan terhadap pembelian impulsif dengan rata-rata skor 4.38 yang termasuk dalam kategori tinggi. Ini berarti bahwa pengaruh keterbatasan stok barang yang diberikan konsumen *flash sale* Shopee tinggi.

Oleh karena itu, sebaiknya Shopee mempertahankan strategi *flash sale* Shopee dengan menggunakan manipulasi keterbatasan stok barang sehingga dapat meningkatkan pembelian impulsif yang dilakukan oleh konsumen saat berbelanja *flash sale* Shopee.

5.3 Keterbatasan Penelitian & Saran

Berdasarkan hasil penelitian yang telah dilakukan, adapun beberapa keterbatasan yaitu:

- a. Dalam penelitian ini tidak dilakukan uji moderasi antara variabel impulsif pribadi terhadap *perceived arousal* dan pembelian impulsif. Peneliti tidak melakukan uji moderasi karena adanya hipotesis yang tidak memiliki pengaruh positif dan signifikan.

Berdasarkan hasil penelitian yang telah dilakukan, maka saran yang dapat diberikan oleh peneliti adalah sebagai berikut:

- a. Penelitian selanjutnya diharapkan untuk dapat melakukan uji moderasi antara variabel impulsif pribadi terhadap *perceived arousal* dan pembelian impulsif apabila semua hipotesis dinyatakan memiliki pengaruh positif dan signifikan. Hal ini diperlukan apabila riset dan objek penelitian yang digunakan penelitian selanjutnya berbeda sehingga terdapat kemungkinan efek yang berbeda.

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LAMPIRAN 1

KUESIONER

Kuesioner Penelitian

Bagian 1 : Profil responden dan pertanyaan filter

Usia :

- 17-20 tahun
- 21-24 tahun
- 25-29 tahun
- 30-35 tahun
- >35 tahun

Jenis kelamin :

- Laki- laki
- Perempuan

Pekerjaan :

- Pelajar
- Mahasiswa
- Pekerja
- Karyawan
- Pengusaha
- Lainnya

Rata-rata uang saku/ pendapatan per bulan:

- <Rp 500.000
- Rp 500.001 – Rp 1.000.000

- Rp 1.000.001 – Rp 2.000.000
- Rp 2.000.001 – Rp 3.000.000
- > Rp 3.000.001

Bagian 2 : Pertanyaan umum

Apakah anda pengguna Shopee?

- Ya
- Tidak

Apakah anda pernah melakukan pembelian di Shopee?

- Ya
- Tidak

Apakah anda mengetahui program *flash sale* Shopee?

- Ya
- Tidak

Apakah anda pernah melakukan pembelian dari program *flash sale* Shopee?

- Ya
- Tidak

Produk apa yang anda beli pada program *flash sale* Shopee?

(jawaban singkat)

Bagian 3 : Pertanyaan mengenai variable penelitian

Keterangan :

1 = Sangat Tidak Setuju

2 = Tidak Setuju

3 = Netral

4 = Setuju

5 = Sangat Setuju

Variabel *flash sale* (keterbatasan waktu)

No	Pertanyaan	Skala				
		1	2	3	4	5
1	Waktu tayang <i>flash sale</i> Shopee sesuai dengan jam istirahat					
2	Saya melakukan pembelian <i>flash sale</i> Shopee karena waktunya terbatas					
3	<i>Flash sale</i> Shopee memiliki waktu yang terbatas					

Variabel *flash sale* (Keterbatasan stok barang)

No	Pertanyaan	Skala				
		1	2	3	4	5
1	Stok barang yang terbatas di <i>flash sale</i> Shopee membuat saya takut kehabisan					
2	Saya melakukan pembelian karena stok barang yang terbatas saat <i>flash sale</i> Shopee					
3	Produk yang saya beli pada program <i>flash sale</i> Shopee jarang diadakan					

Variabel *perceived arousal*

No	Pertanyaan	Skala				
		1	2	3	4	5
1	Saya merasa santai ketika mengikuti program <i>flash Sale</i> di Shopee					

2	Saya bersemangat ketika mengikuti program <i>flash Sale</i> di Shopee					
3	Saya sering terjaga ketika mengikuti program <i>flash Sale</i> di Shopee					
4	Saya merasa bergairah ketika mengikuti program <i>flash Sale</i> di Shopee					

Variabel pembelian impulsif

No	Pertanyaan	Skala				
		1	2	3	4	5
1	“Lakukan saja” mendeskripsikan saya ketika membeli produk <i>flash sale</i> di Shopee					
2	Saya sering membeli produk <i>flash sale</i> di Shopee tanpa berfikir Panjang					
3	“ Saya melihatnya, saya membelinya” mendeskripsikan saya ketika membeli produk <i>flash sale</i> di Shopee					
4	Saya merasa bergairah ketika mengikuti program <i>flash Sale</i> di Shopee					



LAMPIRAN 2

KUESIONER DARING

Pengaruh Flash Sale terhadap Pembelian

Hallo! Perkenalkan saya Felicha Ristya Devi, mahasiswi Universitas Atma Jaya Yogyakarta, Fakultas Bisnis dan Ekonomika. Saat ini saya sedang melakukan penelitian Tugas Akhir mengenai "Pengaruh Flash Sale terhadap Pembelian Impulsif dengan Perceived Arousal Sebagai Variabel Mediasi"

Saya mohon kesediaan teman-teman untuk mengisi kuesioner penelitian skripsi saya. Adapun kriteria untuk mengisi kuesioner ini adalah sebagai berikut:

1. Berusia > 17 tahun
2. Mengetahui program flash sale Shopee
3. Pernah melakukan pembelian pada program flash sale Shopee

Apabila terdapat pertanyaan mengenai penelitian ini, dapat menghubungi peneliti melalui email : felicharstya@gmail.com ataupun instagram : @felicharstya

Setelah bagian 1 Lanjutkan ke bagian berikut

Usia *

- 17-20
- 21-24
- 25-29
- 30-35
- >35

Jenis Kelamin *

- Laki-laki
- Perempuan

Pekerjaan *

- Pelajar
- Mahasiswa
- Karyawan Swasta
- Wiraswasta
- Pegawai Negeri

Rata-rata uang saku/ pendapatan per bulan: *

< Rp 1.000.000

Rp 1.000.001- Rp 2.000.000

Rp 2.000.001 – Rp 3.000.000

Rp 3.000.001 - Rp 4.000.000

> Rp 4.000.001

Setelah bagian 2 Lanjutkan ke bagian berikut

Bagian 3 dari 8

Pertanyaan Umum

Deskripsi (opsional)

Apakah anda pengguna Shopee?

Ya

Tidak

Apakah anda pernah melakukan pembelian di Shopee? *

Ya

Tidak

Apakah anda mengetahui program flash sale Shopee? *

Ya

Tidak

Apakah anda pernah melakukan pembelian dari program flash sale Shopee? *

Ya

Tidak

Setelah bagian 3 Lanjutkan ke bagian berikut

Flash Sale (Keterbatasan Waktu) ✕ ⋮

Flash sale merupakan salah satu strategi bisnis yang dilakukan oleh perusahaan berbasis internet dengan menawarkan promosi terhadap suatu produk menggunakan keterbatasan waktu dan keterbatasan stok barang

Waktu tayang flash sale Shopee sesuai dengan jam istirahat *

1
2
3
4
5

Sangat Tidak Setuju

Sangat Setuju

Saya melakukan pembelian flash sale Shopee karena waktunya terbatas *

1
2
3
4
5

Sangat Tidak Setuju

Sangat Setuju

Flash Sale Shopee memiliki waktu yang terbatas *

1
2
3
4
5

Sangat Tidak Setuju

Sangat Setuju

Setelah bagian 5 [Lanjutkan ke bagian berikut](#) ▼

Flash Sale (Keterbatasan Stok Barang) ✕ ⋮

Deskripsi (opsional)

Stok barang yang terbatas di flash sale Shopee membuat saya takut kehabisan *

1
2
3
4
5

Sangat Tidak Setuju

Sangat Setuju

Saya melakukan pembelian karena stok barang yang terbatas saat flash sale Shopee *

1
2
3
4
5

Sangat Tidak Setuju

Sangat Setuju

Produk yang saya beli pada program flash sale shopee jarang diadakan *

1
2
3
4
5

Sangat Tidak Setuju

Sangat Setuju

Setelah bagian 6 [Lanjutkan ke bagian berikut](#) ▼

Perceived arousal

Perceived arousal didefinisikan sebagai perpaduan aktivitas fisiologis dan psikologis dalam diri seseorang yang mengacu pada intensitas motivasi seseorang terhadap sesuatu

Saya merasa tingkat kesigapan saya meningkat ketika mengikuti program flash Sale di Shopee *

1 2 3 4 5

Sangat Tidak Setuju Sangat Setuju

Saya bersemangat ketika mengikuti program flash Sale di Shopee *

1 2 3 4 5

Sangat Tidak Setuju Sangat Setuju

Saya sering terjaga ketika mengikuti program flash Sale di Shopee *

1 2 3 4 5

Sangat Tidak Setuju Sangat Setuju

Saya merasa bergairah ketika mengikuti program flash Sale di Shopee *

Saya merasa bergairah ketika mengikuti program flash Sale di Shopee *

1 2 3 4 5

Sangat Tidak Setuju Sangat Setuju

Setelah bagian 7 Lanjutkan ke bagian berikut

Bagian 8 dari 8

Pembelian Impulsif

Pembelian impulsif adalah pembelian yang dilakukan tanpa adanya niat sebelumnya

"Lakukan saja" mendeskripsikan saya ketika membeli produk flash sale di Shopee *

1 2 3 4 5

Sangat Tidak Setuju Sangat Setuju

Saya sering membeli produk flash sale di Shopee tanpa berfikir panjang *

1 2 3 4 5

Sangat Tidak Setuju Sangat Setuju



LAMPIRAN 3

KUESIONER ASLI

Variabel *flash sale* (Keterbatasan Waktu)

NO	Pernyataan	Sumber
1.	Waktu tayang <i>flash sale</i> sesuai dengan jam istirahat	(Rismawati & Rais, 2021)
2.	Saya melakukan pembelian karena waktunya terbatas	(Rismawati & Rais, 2021)
3.	<i>Flash sale</i> Shopee memiliki waktu yang terbatas	(Wu, et al., 2020)

Variabel *flash sale* (Keterbatasan Stok Barang)

NO	Pernyataan	Sumber
1.	Stok barang yang terbatas di <i>flash sale</i> Shopee membuat saya takut kehabisan	(Rismawati & Rais, 2021)
2.	Saya melakukan pembelian karena stok barang yang terbatas di <i>flash sale</i>	(Rismawati & Rais, 2021)
3.	Produk yang saya beli pada program <i>flash sale</i> Shopee jarang diadakan	(Wu, et al., 2020)

Variabel *perceived arousal*

NO	Pernyataan	Sumber
1.	Saya merasa santai ketika mengikuti program dengan keterbatasan waktu dan keterbatasan stok barang	(Wu, et al., 2020)
2.	Saya bersemangat ketika mengikuti program dengan keterbatasan waktu dan keterbatasan stok barang	(Wu, et al., 2020)
3.	Saya sering terjaga ketika mengikuti program dengan keterbatasan waktu dan keterbatasan stok barang	(Wu, et al., 2020)
4.	Saya merasa bergairah ketika mengikuti program dengan keterbatasan waktu dan keterbatasan stok barang	(Wu, et al., 2020)

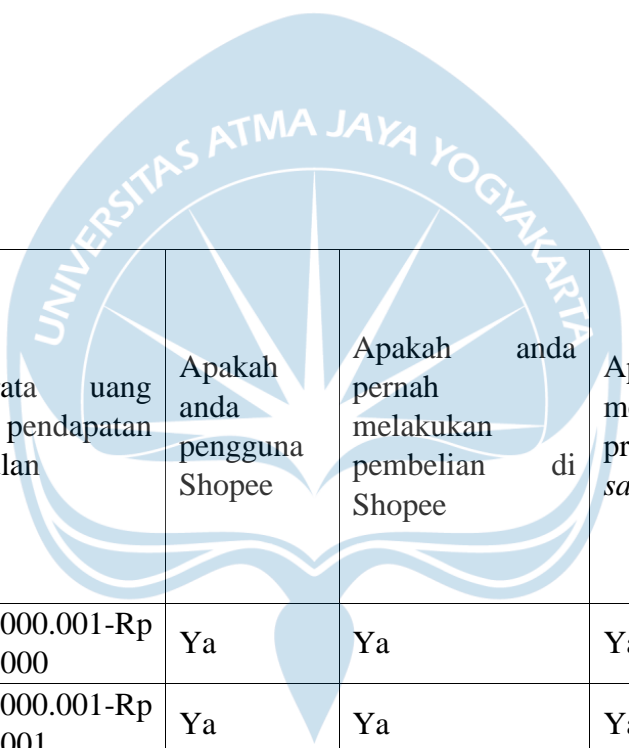
Variabel pembelian impulsif

NO	Pertanyaan	Sumber
1.	“Lakukan saja” mendeskripsikan saya ketika membeli produk	(Wu, et al., 2020)
2.	Saya sering membeli produk tanpa berfikir panjang	(Wu, et al., 2020)
3.	“ Saya melihatnya, saya membelinya” mendeskripsikan saya ketika membeli produk	(Wu, et al., 2020)
4.	“Beli sekarang, pikirkan nanti” mendeskripsikan saya ketika membeli produk	(Wu, et al., 2020)



LAMPIRAN 4

JAWABAN RESPONDEN



No	Jenis Kelamin	Usia	Pekerjaan	Rata-rata uang saku/ pendapatan per bulan	Apakah anda pengguna Shopee	Apakah anda pernah melakukan pembelian di Shopee	Apakah anda mengetahui program <i>flash sale</i> Shopee	Apakah anda pernah melakukan pembelian dari program <i>flash sale</i> Shopee	Produk apa yang anda beli pada <i>flash sale</i> Shopee
1.	Perempuan	21-24	Mahasiswa	Rp 1.000.001-Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Makeup</i>
2.	Perempuan	21-24	Mahasiswa	Rp 1.000.001-Rp 2.000.001	Ya	Ya	Ya	Ya	<i>Makeup</i>
3.	Perempuan	21-24	Mahasiswa	Rp 1.000.001-Rp 2.000.002	Ya	Ya	Ya	Ya	<i>Makeup</i>
4.	Laki-laki	21-24	Mahasiswa	>Rp 4.000.001	Ya	Ya	Ya	Ya	Baju

5.	Perempuan	25-29	Karyawan Swasta	Rp 3.000.001- Rp 4.000.000	Ya	Ya	Ya	Ya	Rautan
6.	Perempuan	21-24	Mahasiswa	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	Skincare
7.	Laki-laki	21-24	Mahasiswa	Rp 1.000.000- Rp 2.000.000	Ya	Ya	Ya	Ya	Masker Disposable
8.	Laki-laki	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Jaket Sketchers lewat Shopee Thailand
9.	Laki-laki	21-24	Mahasiswa	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	Kemeja
10.	Perempuan	17-20	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Pakaian
11.	Perempuan	25-29	Wiraswasta	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	Semua produk yang dibutuhkan, mulai dari utilitas hingga tersier
12.	Perempuan	17-20	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Art supplies
13.	Perempuan	25-29	Wiraswasta	>Rp 4.000.001	Ya	Ya	Ya	Ya	Yaa yg lg <i>flash sale</i> aja dan pas butuh
14.	Perempuan	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Accessories</i>
15.	Perempuan	25-29	Karyawan Swasta	> Rp 4.000.001	Ya	Ya	Ya	Ya	Masker

16.	Perempuan	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Shampoo
17.	Laki-laki	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Kaos
18.	Laki-laki	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Tas Selempang
19.	Laki-laki	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Elektronik dan perbotan rumah
20.	Perempuan	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Beauty product</i>
21.	Perempuan	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	<i>Skincare</i>
22.	Perempuan	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Lampu tumblr
23.	Perempuan	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Shampoo
24.	Perempuan	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Skincare</i>
25.	Laki-laki	17-20	Pelajar	< Rp 1.000.000	Ya	Ya	Ya	Ya	Baju
26.	Laki-laki	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Sepatu
27.	Perempuan	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Makeup

28.	Perempuan	21-24	Mahasiswa	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	<i>Skincare</i>
29.	Perempuan	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	<i>Lip product, hijab, scrunchie</i>
30.	Perempuan	17-20	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Kacamata
31.	Perempuan	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Gadget
32.	Perempuan	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Skincare</i>
33.	Perempuan	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Skincare</i>
34.	Laki-laki	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Sepatu
35.	Perempuan	17-20	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Baju
36.	Laki-laki	17-20	Pelajar	< Rp 1.000.000	Ya	Ya	Ya	Ya	Baju, sepatu
37.	Perempuan	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Makeup</i>
38.	Perempuan	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Baju, <i>skincare, makeup</i>
39.	Laki-laki	25-29	Karyawan Swasta	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	Jam

40.	Laki-laki	17-20	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Tas
41.	Perempuan	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Makeup</i>
42.	Laki-laki	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Bodycare,skincare,tas</i>
43.	Laki-laki	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Jam tangan
44.	Perempuan	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Barang
45.	Perempuan	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Makeup</i>
46.	Laki-laki	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Bodycare,skincare,tas</i>
47.	Laki-laki	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	<i>Case hp</i>
48.	Perempuan	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Flashdisk</i>
49.	Perempuan	21-24	Mahasiswa	Rp 3.000.001- Rp 4.000.000	Ya	Ya	Ya	Ya	<i>Hp</i>
50.	Laki-laki	21-24	Mahasiswa	Rp 1.000.001-Rp 2.000.000	Ya	Ya	Ya	Ya	Baju
51.	Laki-laki	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Sendal

52.	Laki-laki	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Jam
53.	Laki-laki	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Maker
54.	Laki-laki	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Case hp
55.	Perempuan	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Skincare
56.	Perempuan	17-20	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Baju, case hp, kacamata
57.	Perempuan	21-24	Mahasiswa	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	Kemeja
58.	Perempuan	21-24	Mahasiswa	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	Serum scarlett
59.	Perempuan	21-24	Mahasiswa	Rp 3.000.001- Rp 4.000.000	Ya	Ya	Ya	Ya	Skincare
60.	Laki-laki	21-24	Mahasiswa	> Rp 4.000.001	Ya	Ya	Ya	Ya	Pakaian
61.	Perempuan	21-24	Mahasiswa	Rp 3.000.001- Rp 4.000.000	Ya	Ya	Ya	Ya	Baju
62.	Laki-laki	17-20	Mahasiswa	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	Kalung
63.	Perempuan	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Accessories

64.	Perempuan	25-29	Karyawan Swasta	> Rp 4.000.001	Ya	Ya	Ya	Ya	Variatif. Bisa apa saja spt keperluan wanita, makanan, accessories dll
65.	Laki-laki	21-24	Mahasiswa	> Rp 4.000.001	Ya	Ya	Ya	Ya	Kabel USB
66.	Laki-laki	21-24	Mahasiswa	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	<i>Hanger</i> IKEA
67.	Perempuan	17-20	<i>Freelancer</i>	< Rp 1.000.000	Ya	Ya	Ya	Ya	<i>Makeup</i>
68.	Laki-laki	21-24	Mahasiswa	Rp 3.000.001- Rp 4.000.000	Ya	Ya	Ya	Ya	Aksesoris mobil
69.	Perempuan	21-24	Pengangguran	< Rp 1.000.000	Ya	Ya	Ya	Ya	Tas
70.	Laki-laki	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Baju
71.	Perempuan	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Skincare</i>
72.	Laki-laki	21-24	Mahasiswa	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	Peralatan Pendakian
73.	Perempuan	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	<i>Skincare</i>
74.	Perempuan	>35	Karyawan Swasta	> Rp 4.000.001	Ya	Ya	Ya	Ya	<i>Power bank</i>
75.	Laki-laki	>35	Karyawan Swasta	> Rp 4.000.001	Ya	Ya	Ya	Ya	<i>Accessories hp</i>

76.	Perempuan	17-20	Pelajar	< Rp 1.000.000	Ya	Ya	Ya	Ya	<i>Headset</i>
77.	Perempuan	30-35	Karyawan Swasta	Rp 3.000.001- Rp 4.000.000	Ya	Ya	Ya	Ya	<i>Handsfree bluetooth</i>
78.	Perempuan	25-29	Karyawan Swasta	Rp 3.000.001- Rp 4.000.000	Ya	Ya	Ya	Ya	Alat memasak
79.	Perempuan	21-24	Mahasiswa	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	Baju
80.	Laki-laki	21-24	Mahasiswa	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	Peralatan Pendakian
81.	Perempuan	25-29	Karyawan Swasta	> Rp 4.000.001	Ya	Ya	Ya	Ya	<i>Makeup</i> kecantikan
82.	Laki-laki	21-24	Mahasiswa	Rp 1.000.000- Rp 2.000.000	Ya	Ya	Ya	Ya	Pakaian
83.	Laki-laki	25-29	Wiraswasta	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	Sepatu
84.	Perempuan	21-24	Mahasiswa	Rp 1.000.000- Rp 2.000.000	Ya	Ya	Ya	Ya	Baju, sepatu
85.	Laki-laki	25-29	Wiraswasta	> Rp 4.000.001	Ya	Ya	Ya	Ya	Baju, sepatu, elektronik
86.	Laki-laki	21-24	Pelajar	Rp 1.000.000- Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Case hp</i>
87.	Laki-laki	21-24	Mahasiswa	Rp 1.000.000- Rp 2.000.000	Ya	Ya	Ya	Ya	Tas

88.	Laki-laki	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Banyak
89.	Laki-laki	21-24	Mahasiswa	Rp 1.000.000- Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Random apa aja yang lagi ada flash sale nya</i>
90.	Laki-laki	21-24	Mahasiswa	Rp 1.000.000- Rp 2.000.000	Ya	Ya	Ya	Ya	Lampu belajar
91.	Perempuan	21-24	Mahasiswa	Rp 1.000.000- Rp 2.000.000	Ya	Ya	Ya	Ya	Seprei
92.	Laki-laki	21-24	Karyawan Swasta	> Rp 4.000.001	Ya	Ya	Ya	Ya	<i>Microphone</i>
93.	Perempuan	21-24	Mahasiswa	Rp 3.000.001- Rp 4.000.000	Ya	Ya	Ya	Ya	<i>Skincare</i>
94.	Laki-laki	21-24	Mahasiswa	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	<i>Case hp</i>
95.	Perempuan	25-29	Pegawai Negri	> Rp 4.000.001	Ya	Ya	Ya	Ya	<i>Tas, case hp</i>
96.	Perempuan	21-24	Mahasiswa	Rp 1.000.000- Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Skincare, bodycare</i>
97.	Perempuan	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Makanan
98.	Perempuan	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Case hp</i>
99.	Laki-laki	21-24	Mahasiswa	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	<i>Kemeja, case hp</i>

100.	Perempuan	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Make up</i>
101.	Perempuan	17-20	Mahasiswa	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	Baju
102.	Laki-laki	21-24	Mahasiswa	> Rp 4.000.001	Ya	Ya	Ya	Ya	Paket internet
103.	Perempuan	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	<i>Skincare</i>
104.	Laki-laki	21-24	Mahasiswa	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	Jam tangan
105.	Perempuan	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Masker
106.	Perempuan	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Baju, peralatan rumah tangga, <i>makeup</i> dll
107.	Perempuan	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	Kecantikan
108	Perempuan	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Skincare</i>
109.	Perempuan	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	<i>case hp, baju, hijab</i>
110.	Perempuan	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	<i>ring light</i>
111.	Perempuan	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	<i>Facial wash</i>

112.	Perempuan	21-24	Karyawan Swasta	> Rp 4.000.001	Ya	Ya	Ya	Ya	Baju, makanan, dan <i>makeup</i>
113.	Perempuan	17-20	Mahasiswa	Rp 3.000.001- Rp 4.000.000	Ya	Ya	Ya	Ya	<i>Headset</i>
114.	Perempuan	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Baju
115.	Perempuan	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	<i>Makeup</i> dan <i>skincare</i>
116.	Perempuan	21-24	Karyawan Swasta	> Rp 4.000.001	Ya	Ya	Ya	Ya	Kosmetik
117.	Perempuan	21-24	Mahasiswa	> Rp 4.000.001	Ya	Ya	Ya	Ya	<i>Makeup</i>
118.	Perempuan	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Tas, kerudung, kosmetik, <i>skincare</i>
119.	Perempuan	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Baju
120.	Perempuan	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Tote bag
121.	Perempuan	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	<i>Air buds</i> , jam tangan, <i>hoodie</i>
122.	Perempuan	17-20	Karyawan Swasta	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	Sendal
123.	Perempuan	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Baju

124.	Perempuan	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Keperluan atau benda yang sudah sangat ingin saya beli, seperti tas, sepatu, baju, bahkan perlengkapan praktik ke rumah sakit
125.	Perempuan	17-20	Mahasiswa	Rp 1.000.000- Rp 2.000.000	Ya	Ya	Ya	Ya	cat air
126.	Perempuan	17-20	Mahasiswa	Rp 1.000.000- Rp 2.000.000	Ya	Ya	Ya	Ya	Pakaian
127.	Perempuan	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	<i>Headset</i>
128.	Perempuan	21-24	Mahasiswa	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	Sepatu
129.	Perempuan	21-24	Mahasiswa	Rp 1.000.000- Rp 2.000.000	Ya	Ya	Ya	Ya	Jilbab
130.	Perempuan	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Banyak
131.	Perempuan	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Tali jemuran
132.	Perempuan	21-24	Mahasiswa	Rp 1.000.000- Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Skincare</i>

133.	Perempuan	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Baju
134.	Perempuan	17-20	Mahasiswa	Rp 1.000.000- Rp 2.000.000	Ya	Ya	Ya	Ya	Kemeja, sepatu, tas
135.	Perempuan	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Baju
136.	Perempuan	21-24	Wiraswasta	> Rp 4.000.001	Ya	Ya	Ya	Ya	<i>Makeup</i>
137.	Perempuan	17-20	Pelajar	< Rp 1.000.000	Ya	Ya	Ya	Ya	Tas
138.	Perempuan	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Token listrik, pulsa dan paket data
139.	Perempuan	17-20	Mahasiswa	Rp 1.000.000- Rp 2.000.000	Ya	Ya	Ya	Ya	Baju
140.	Perempuan	25-29	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Baju, sepatu, barang-barang yang murah
141.	Perempuan	21-24	Mahasiswa	Rp 1.000.000- Rp 2.000.000	Ya	Ya	Ya	Ya	Jilbab
142.	Perempuan	21-24	Karyawan Swasta	> Rp 4.000.001	Ya	Ya	Ya	Ya	<i>Random</i>
143.	Perempuan	21-24	Mahasiswa	> Rp 4.000.001	Ya	Ya	Ya	Ya	<i>Makeup</i>
144.	Perempuan	17-20	Pelajar	< Rp 1.000.000	Ya	Ya	Ya	Ya	Sepatu, <i>case</i> hp

145.	Perempuan	17-20	Mahasiswa	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	Kecantikan seperti <i>makeup</i> atau <i>skincare</i> dan <i>fashion</i> seperti baju
146.	Perempuan	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Sendal
147.	Perempuan	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Aksesoris hp
148.	Perempuan	21-24	Karyawan Swasta	> Rp 4.000.001	Ya	Ya	Ya	Ya	Masker
149.	Perempuan	17-20	Mahasiswa	Rp 1.000.000- Rp 2.000.000	Ya	Ya	Ya	Ya	Celana <i>jeans</i>
150.	Laki-laki	21-24	Mahasiswa	Rp 1.000.001- Rp 2.000.000	Ya	Ya	Ya	Ya	<i>Power bank</i>
151.	Perempuan	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Makanan, <i>makeup</i> , vitamin, dll
152.	Perempuan	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Celana, dompet, <i>headset</i> , tas dll
153.	Perempuan	21-24	Mahasiswa	Rp 2.000.001- Rp 3.000.000	Ya	Ya	Ya	Ya	Kosmetik, sabun
154.	Perempuan	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Kaos kaki
155.	Perempuan	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Aksesoris
156.	Perempuan	21-24	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Baju

157.	Perempuan	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Masker wajah
158.	Perempuan	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	<i>lip cream</i> , set alat makan
159.	Perempuan	21-24	Karyawan Swasta	Rp 3.000.001- Rp 4.000.000	Ya	Ya	Ya	Ya	Botol susu bayi
160.	Perempuan	17-20	Mahasiswa	> Rp 4.000.001	Ya	Ya	Ya	Ya	Banyak kerudung, sepatu, baju tidur, sandal, boneka, dan masih banyak lagi
161.	Perempuan	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	Sepatu
162.	Perempuan	17-20	Mahasiswa	< Rp 1.000.000	Ya	Ya	Ya	Ya	<i>Inpods</i> dan tote bag
163.	Perempuan	17-20	Pelajar	> Rp 4.000.001	Ya	Ya	Ya	Ya	Baju
164.	Perempuan	25-29	Karyawan Swasta	> Rp 4.000.001	Ya	Ya	Ya	Ya	Seputar <i>fashion</i>

NO	KW1	KW2	KW3	KSB2	KSB2	KSB3	PA1	PA2	PA3	PA3	PI1	PI2	PI3	PI4
1.	5	4	4	4	5	4	5	5	4	5	4	4	4	4
2.	5	4	4	4	5	4	5	5	4	5	4	4	4	4
3.	5	4	4	4	5	4	5	5	4	5	4	4	4	4
4.	3	4	4	4	4	4	4	5	4	4	3	3	4	3
5.	3	2	3	5	1	5	3	3	4	3	3	1	3	3

6.	5	5	5	5	5	5	5	5	5	5	5	5	5	5
7.	3	4	4	4	3	3	2	2	1	2	2	2	2	4
8.	5	4	4	5	5	5	2	3	2	2	2	2	3	2
9.	3	5	5	4	4	4	5	4	4	5	5	4	5	5
10.	4	2	3	2	2	3	3	3	1	3	4	2	4	2
11.	5	2	3	2	2	3	5	2	2	2	3	2	2	2
12.	4	4	4	5	5	5	2	4	1	2	4	2	2	2
13.	4	4	4	5	5	5	5	5	5	5	5	5	5	5
14.	5	5	5	5	5	5	5	5	4	4	3	2	2	3
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20.	3	5	5	3	3	3	5	4	4	4	5	4	4	5
21.	5	5	5	5	5	5	4	5	4	4	5	5	4	5
22.	5	5	5	3	3	3	5	4	2	3	3	1	1	1
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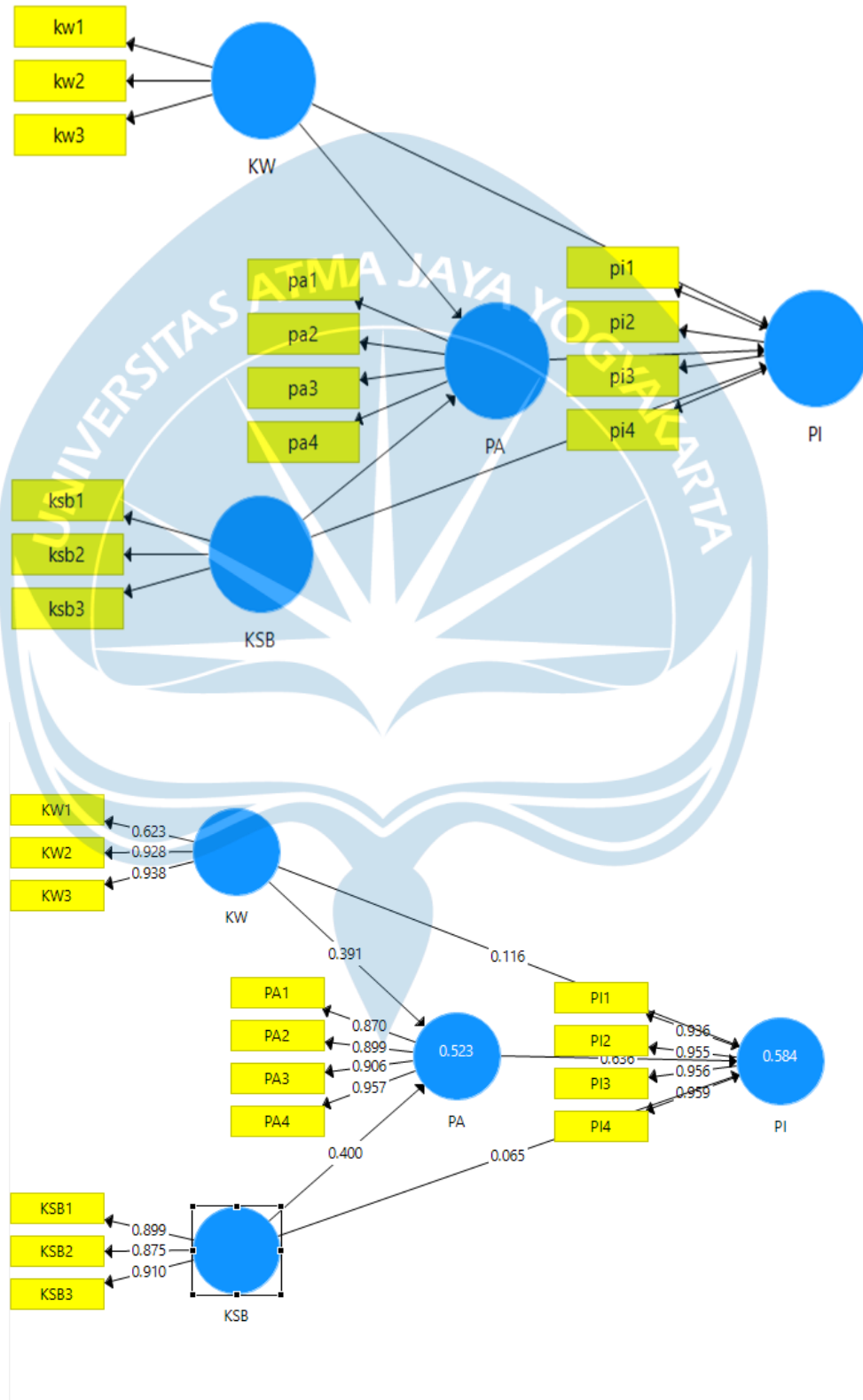
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164.	4	5	5	5	5	5	4	5	3	4	5	5	5	5





LAMPIRAN 5
HASIL OLAH DATA PLS

1. Model Diagram Jalur



2. Nilai *Outer Loadings*

Outer Loadings

Matrix Copy to Clipboard: Excel Format R Format

	KSB	KW	PA	PI
KW1		0.623		
KW2		0.928		
KW3		0.938		
PA1			0.870	
PA2			0.899	
PA3			0.906	
PA4			0.957	
PI1				0.936
PI2				0.955
PI3				0.956
PI4				0.959

3. Konstruksi Reliabilitas dan Validitas

Construct Reliability and Validity

Matrix Cronbach's Alpha rho_A $> .2$ Copy to Clipboard: Excel Format R Format

	Cronbach's Al...	rho_A	Composite Rel...	Average Varian...
KSB	0.876	0.881	0.923	0.800
KW	0.777	0.814	0.877	0.710
PA	0.929	0.941	0.950	0.825
PI	0.965	0.968	0.975	0.906

4. Fornell-Larcker Criterion

Discriminant Validity

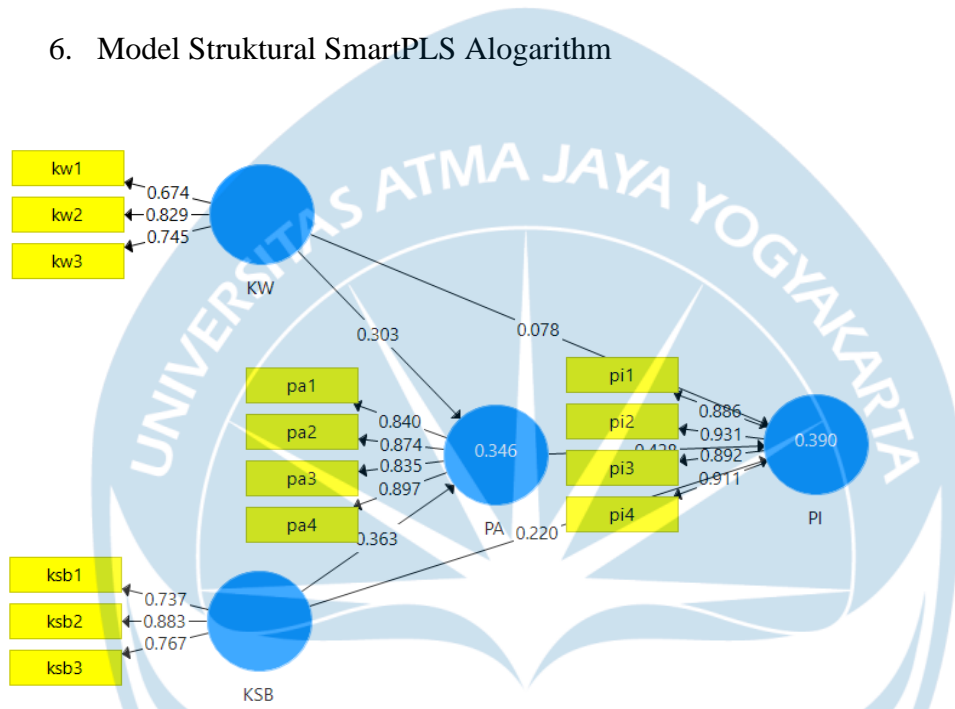
	KSB	KW	PA	PI
KSB	0.895			
KW	0.669	0.842		
PA	0.662	0.659	0.908	
PI	0.563	0.578	0.755	0.952

5. Nilai Cross Loadings

	Latent Varia...	Latent Varia...	Latent Varia...	Latent Varia...
KSB1	0.545	0.891	0.522	0.501
KSB2	0.650	0.863	0.654	0.514
KSB3	0.485	0.900	0.504	0.406
KW1	0.596	0.299	0.382	0.435
KW2	0.920	0.655	0.578	0.513
KW3	0.928	0.593	0.546	0.431
PA1	0.512	0.339	0.846	0.569
PA2	0.550	0.718	0.893	0.605

	Latent Varia...	Latent Varia...	Latent Varia...	Latent Varia...
PA1	0.512	0.339	0.846	0.569
PA2	0.550	0.718	0.893	0.605
PA3	0.561	0.601	0.899	0.687
PA4	0.588	0.606	0.956	0.789
PI1	0.484	0.462	0.686	0.933
PI2	0.635	0.592	0.753	0.956
PI3	0.449	0.472	0.694	0.957
PI4	0.535	0.524	0.688	0.956

6. Model Struktural SmartPLS Alogarithm



7. R-Square

R Square

Matrix	R Square	R ²	Copy to Clipboard:	Excel Format	R Format
	R Square	R Square A...			
PA	0.346	0.338			
PI	0.390	0.379			

8. Q-Square

Construct Crossvalidated Redundancy

Total	Case1	Case2	Q ²	Copy to Clipboard:	Excel Format	R Format
	SSO	SSE	Q ² (=1-SSE...			
KSB	492.000	492.000				
KW	492.000	492.000				
PA	656.000	496.942	0.242			
PI	656.000	453.220	0.309			

9. Path Coefficient

workspace\skripsi 177

.language

Path Model

Hide Zero Values

Increase Decimals

Decrease Decimals

pls 177.txt

*data felicha kuesioner 177.splsm

PLS Algorithm (Run No. 1)

Path Coefficients

Matrix	Path Coefficients	Copy to Clipboard:	Excel Format	R Format
	KSB	KW	PA	PI
KSB			0.363	0.220
KW			0.303	0.078
PA				0.428
PI				



LAMPIRAN 6

JURNAL ACUAN



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How does scarcity promotion lead to impulse purchase in the online market? A field experiment

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ABSTRACT

Online retailers employ two strategies of limited-quantity and limited-time to entice consumers' impulse purchases. However, little research has investigated the effects of these promotion strategies. Drawing on the competitive arousal model and the scarcity model, this paper develops a research model to demonstrate the influences of limited-quantity scarcity (LQS) and limited-time scarcity (LTS) on impulse purchase through the mediating mechanism of perceived arousal. By setting up a new online store on a well-known Chinese e-commerce platform, we conducted a field experiment with 182 participants to test our research model. The results provided strong evidence that both LQS and LTS increased a consumer's perceived arousal, which then led to impulse purchase. Furthermore, there was an interaction effect between the two types of scarcity strategies on perceived arousal. Finally, although personal impulsiveness positively affected a consumer's impulse purchase, it did not moderate the influence of perceived arousal on impulse purchase. Our findings provide both theoretical implications and design guidelines on triumphant employment of scarcity promotion strategies.

1. Introduction

A market report from *CreditCards.com* revealed that 84 % of all shoppers made impulse purchases,¹ and it is estimated that impulse purchases accounted for almost 40 % of consumer spending on e-commerce [1]. A survey conducted by *YouGov Plc* showed that 87 % of 1500 Chinese online buyers who were aged from 18 to 64 years purchased impulsively on November 11, 2015², which was considered to be the most luxurious online shopping festival every year by Chinese shoppers. The staggering number unquestionably includes a noticeable volume of impulse purchases. It is believed that the online shopping environment is more conducive to impulse purchases than its offline counterpart [2], because the online market frees up constraints such as distant store locations and limited operating hours. Online consumers often make impulse purchases spontaneously and intuitively after being exposed to stimulating cues initiated by online stores, like price promotion, advertisement of limited offer, and attractive product appearance [2]. Among the cues, scarcity promotion strategies in terms of limited-quantity and limited-time are widely applied in both online and

offline markets.

Prior research has demonstrated that scarcity information is used as informational cues by consumers to evaluate promotion strategies [3]. Specifically, Aggarwal et al. [4] has examined the effects of limited-quantity scarcity (LQS) and limited-time scarcity (LTS) on consumers' purchase intention in offline shops. However, online consumers incur low cost to search for similar products, while the searching cost for alternatives is highly noticeable in the offline environment [5]. Despite the prevalence of scarcity promotion strategies, rather limited knowledge is available concerning the psychological mechanisms underlying online impulse purchases, such as how LQS and LTS affect a consumer's online impulse purchase. Therefore, the objective of this study is to elucidate the underlying psychological mechanism that is able to explain how scarcity promotion strategies impact impulse purchase in the online shopping context.

Unlike past studies of online impulse purchases that have mostly focused on urge to purchase impulsively or adopted urge to buy impulsively as a surrogate measure for actual impulse purchase (e.g., [6–9]); we extend these studies by observing a consumer's actual

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¹ <https://www.creditcards.com/credit-card-news/impulse-purchase-survey.php>, accessed on Dec 25, 2018.

² <https://www.emarketer.com/Chart/Issues-that-Would-Make-Digital-Buyers-China-Less-Likely-Make-Another-Purchase-Retailer-Feb-2016-of-respondents/198835>, accessed on Dec 25, 2018.

<https://doi.org/10.1016/j.im.2020.103283>

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impulse purchase behavior as the outcome variable. We posit that urge to purchase impulsively is not equivalent to actual impulse purchase. Not all impulse urges are acted upon, and the likelihood of an impulse purchase is positively associated with the number of urges experienced [10]. The relationship between urge to buy impulsively and impulse purchase is described as a chain effect [1]. Although scholars have attempted to measure actual impulse purchase through scenario-based experiments or surveys, responses are often biased when participants are asked to recall their impulse purchase behaviors [11]. Hence, it becomes imperative to investigate actual impulse purchase, to better understand the marketing effectiveness of scarcity promotion.

Furthermore, we provide a refined view of the role of external stimuli, i.e., the two scarcity strategies, in the consumer's psychological process by examining the interaction effect of the two strategies. Aggarwal et al. [4] has demonstrated that LQS is more effective than LTS in determining consumers' purchase intention in offline shopping. Compared with offline shopping context, online shopping has higher information visibility. A consumer is exposed to timely dynamics of both limited-quantity and LTS information when he/she is browsing a product online. These two types of scarcity information may function together in shaping a consumer's impulse purchase. Past studies in online auctions have shown that there is an interaction effect between limited-quantity and limited-time on an individual's desire to bid and extra bidding behaviors [12,13]. However, the dual effects of these two types of scarcity strategies are still lacking research attention in the online shopping context.

Overall, this study contributes to the online impulse purchase literature by integrating the competitive arousal model [14] and the scarcity promotion literature [4] to develop a theoretical model to describe the impacts of LQS and LTS on actual impulse purchase. We operationalized the research model in a field experiment, where we built an online store on a well-known e-commerce platform.

2. Theoretical foundations

2.1. Online impulse purchase

Online impulse purchase is defined as a sudden and immediate online purchase with no pre-shopping intentions [15]. The online impulse purchase literature mainly focuses on the effects of website cues [1]. For instance, Koufaris [16] investigated the effect of a value-added search mechanism on impulse buying. Adelaar et al. [17] explored the effects of media formats (i.e., text, still image, and music video) on consumers' impulse purchase intentions. Parboteeah et al. [7] tested the influence of website characteristics (i.e., task-relevant cues and mood-relevant cues) on consumers' internal reactions and urge to buy impulsively. Chen et al. [18] examined the impacts of textual information quality and the number of "Likes" on a consumer's urge to buy impulsively in a C2C Facebook "buy and sell" group. Chen et al. [6] uncovered how product recommendations on social media affected the urge to buy impulsively. Furthermore, past studies examined the effects of consumers' personal traits, including hedonic consumption needs [19], and consumers impulsiveness [8,18,20]. The research also uncovered the effects of different marketing promotion tactics, such as limiting the offer period [21] and providing discounts [22]. However, there is little research on the exact impacts of LQS and LTS on online impulse purchase.

In addition, previous studies were mainly focused on the urge to purchase impulsively (i.e., the state of desire experienced upon encountering a product in the online context) [6–9]. Measuring actual impulse purchases was reported as challenging and sometimes problematic. Although it is a commonly used surrogate measure, urge to purchase impulsively is not the same as actual impulse purchase. When consumers experience more buying urges, they are more likely to make impulse purchases [1]. Thus, it is necessary to move impulse purchase research forward by examining a consumer's actual impulse purchase.

2.2. Competitive arousal model

The competitive arousal model explains how diverse factors (e.g., perceived rivalry and time pressure) fuel arousal, which then impacts individual decision-making [14]. In particular, perceived arousal is defined as the neurophysiological basis underlying all processes in the human organism, ranging from sleep to excitement [23]. It is the basis of emotions, motivations, information processing, and behavioral reactions [24]. The arousal-nonarousal dimension captures the extent to which a person is alerted, excited, stimulated, or activated in a situation [25].

Specifically, the competitive arousal model posits that numerous routes typically exist in a competitive situation, including perceived rivalry and time pressure [14]. The route of perceived rivalry is defined as heightened consciousness of a competitor's role in obstructing goal achievement [13]. Perceived rivalry as a subjective relationship between competitors may vary in strength [26]. When provocation is caused by the discretionary behavior of an identifiable opponent, an individual's arousal manifests as promising higher [27]. Additionally, the route of time pressure focuses on the perceived need and desire to make quick judgments or decisions [28]. It has been demonstrated that time pressure positively affects an individual's arousal [29]. Finucane et al. [30] has found that individuals are most likely to rely on affect, which, in turn, is accompanied by increased arousal levels, when they experience time pressure.

The competitive arousal model was initially developed in the context of auctions. Specifically, Ku et al. [14] explicitly pointed out that competitive arousal resulted in overbidding. Subsequently, Malhotra [13] investigated the competitive arousal model in the online auction bidding and presented that the "desire to win" was heightened under head-to-head rivalry and time pressure. Adam et al. [12] described how auction fever culminated because of peer competition and time pressure, and emphasized the effects of arousal on biddings.

The process of impulse purchase is characterized by a lack of cognitive deliberation and being dominated by emotions [31]. In particular, consumers often experience positive affective reactions, such as pleasure and arousal [17], and reduce information processing and cognitive reactions during the impulse purchase process. Hence, the competitive arousal model is a proper theoretical lens to examine impulse purchase. This study relies on this model to uncover the underlying mechanism of LTS and LQS on consumers' impulse purchase in the online market.

2.3. Online scarcity promotion strategy

In online promotion marketing, information on limited-quantity and limited-time is viewed as a scarcity message [32]. In a LQS message, the promotional offer is made available for a predefined quantity of a product, while in a LTS message, the offer is made available for a predefined period after which the offer becomes unavailable (e.g., Singles' Day shopping event). LTS is different from LQS in a very fundamental way. In the case of LTS, a buyer simply has to meet the deadline set by the seller to take advantage of the promotional offer, rather than competing against other buyers. In contrast, the LQS offer is restricted to a set of number of units. Every time a buyer purchases a unit, the remaining number of units available for purchase decreases. This creates a sense of uncertainty for LQS promotion. In sum, research on scarcity message has often indicated that such messages have a positive impact on the evaluation of and attitude toward the object of the message [4,33,34]. Scarcity seems to create a sense of urgency among buyers and results in more purchases, shorter searches, and greater satisfaction with the purchased products [4].

Ku et al. [34] investigated the influence of information scarcity on consumers' prevention-orientation and promotion-orientation and their impulse purchase intentions. Aggarwal et al. [4] concluded that LQS was more effective than LTS in influencing consumers' purchase

intentions offline. Yet, to the best of our knowledge, there is little literature about the effects and advantages of LQS over LTS in the online shopping environment.

These two types of scarcity messages present new features in the online shopping environment in terms of channel capabilities (e.g., access and search capabilities) [35]. Specifically, these two types of scarcity messages are visible and updated in a timely manner in the online environment. Consumers can view timely updates about decreasing supply and experience time pressure by counting down the remaining shopping time. The sense of urgency a buyer experienced seems to be dynamically strengthened. Furthermore, the online environment provides easy access to many products and relevant information. Low searching cost for alternatives and an abundance of information may easily switch a buyer from one promotional offer to another, hence impairing the effectiveness of scarcity promotion for a particular product.

Therefore, following the competitive arousal model, this paper suggests that the two types of scarcity messages typically provide a competitive situation that stimulates consumer's perceived arousal toward an online scarcity promotion. In the online shopping context, perceived arousal is defined as an excited emotional state stimulated by a scarcity promotion in online shopping. Past studies have theorized a possible connection between scarcity and perceived arousal [32,36]. Hence, drawing on the competitive arousal model, this paper intends to specifically uncover the underlying mechanism of LQS and LTS on a consumer's impulse purchase online.

2.4. Consumer trait: personal impulsiveness

Personal impulsiveness is widely identified to have a significant association with impulse purchase, and individuals with personal impulsiveness have difficulties in inhibiting their emotional urges [37]. Personal impulsiveness concentrates on a consumer's likelihood to experience spontaneous and sudden urges to make on-the-spot purchases, and the tendency to act on these felt urges while paying little attention on evaluating the consequences [10]. Although studies have shown the significance of personal impulsiveness in impulse purchase [8,18,20], the interaction between environmental cues and individual impulsiveness also shape consumer behaviors. Specifically, Wells et al. [8] found that personal impulsiveness moderated the relationship between cognitive state (e.g., website quality and information quality) and impulse purchase. Although Chen et al. [18] failed to empirically demonstrate the moderating effect of personal impulsiveness on the relationship between affective state (e.g., number of "likes") and impulse purchase, their study still provides certain theoretical insights. Therefore, personal impulsiveness may play an important role between perceived arousal and impulse purchase.

3. Research model and hypothesis development

Fig. 1 shows the research model.

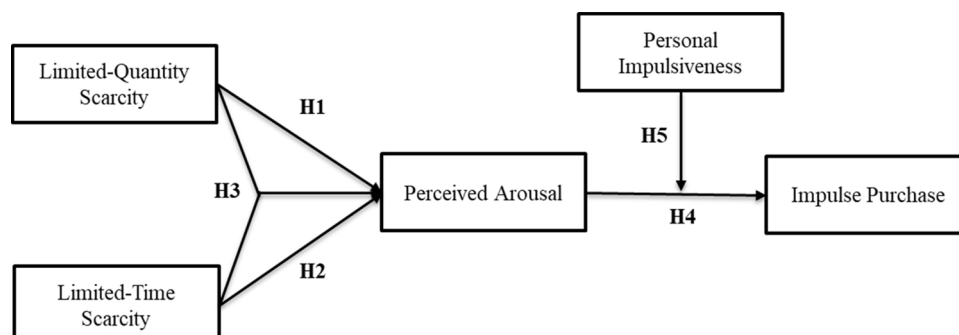


Fig. 1. Research Model.

3.1. Effects of scarcity messages on perceived arousal

An LQS offer is restricted to a set number of units. The first-come and first-serve basis creates a sense of competition and uncertainty in LQS promotion. Consumers compete for the advantageous inequity that is accrued to the recipients of a promotion [38]. Therefore, perceived rivalry serves as the underlying mechanism in unfolding the effect of LQS on the affective reaction to online promotions. Because products are simultaneously browsed by many unknown consumers, a timely update about the decrease in the product stock depicts the experienced rivalry among peer buyers.

While the exact number of online buyers who are interested in the target product is usually difficult to estimate, if not unknown, a particular consumer may mostly estimate the least number of potential competitors as the number of available products according to his/her heuristic information processing. Thus, perceived rivalry of a particular consumer with an unknown pool of competitors increases dramatically with increased LQS. The LQS promotion, accompanied by perceived rivalry, makes a consumer feel that he or she is in direct competition with other consumers, leading to the consumer's perceived arousal. Past studies showed that the extent of perceived arousal increased as the level of perceived rivalry increased [14]. Adam et al. [12] presented that bidders experienced more arousal under the influence of higher social competition from peer bidders in online auctions. Buying a product in the LQS promotion is a typical type of competitive activity, which is the pursuit of assets perceived as scarce and contested [39]. Therefore, we hypothesize

H1. Compared with low limited-quantity scarcity, high limited-quantity scarcity leads to higher perceived arousal.

In the case of LTS, the smaller the time window, the higher the time pressure, the perceived need or desire to make judgments or decisions more quickly [28]. Online consumers experience time pressure conspicuously by counting down the available shopping time. Time pressure is often operationalized through the imposition of deadlines because deadlines can increase the perceived need to make decisions quickly, especially as the deadline nears [40]. Therefore, in the context of online promotion, time pressure serves as the underlying mechanism in understanding the influence of LTS on perceived arousal.

A consumer feels intense time pressure in online shops because he/she needs to make a quick decision to purchase in a diminishing time window, and not doing so would bring the risk of losing the product. Hence, the level of time pressure increases as the deadline approaches. Wofford [41] has shown that time pressure increases psychological arousal. Shiv and Fedorikhin [42] have found that time pressure increases the role of affect in decision-making and decreases the deliberation of decision consequences. In particular, Jones et al. [43] have shown that lottery decision-makers experience high perceived arousal when they face time pressure. Additionally, Finucane et al. [30] have found that when decision-makers face time pressure, they have a general tendency to rely on affect, which in turn is accompanied by

increased arousal level. In the context of online auctions, Ku et al. [14] Malhotra [13], and Adam et al. [12] have argued that time pressure can fuel bidders' arousal. Therefore, we posit

H2. *Compared with low limited-time scarcity, high limited-time scarcity leads to higher perceived arousal.*

Past studies of online auctions have shown that bidders are more susceptible to competitive triggers when rivalry and time pressure coincide [13]. Specifically, Adam et al. [12] have found that bidders' arousal increases in high time pressure, when bidders compete with other peers in online auctions. Malhotra [13] has demonstrated that there is a significant interaction between perceived rivalry and time pressure on the desire to bid. Hence, LQS may interact with LTS in influencing a consumer's perceived arousal. In online shopping, low searching cost for alternative products might lead consumers to make last-minute decisions, whereas consumers usually incur high time cost in earlier stages of the decision-making process in terms of searching and evaluating alternatives [44]. Therefore, it results in the condition of high level of time scarcity, regardless of LQS.

Accordingly, under the high LTS condition, time pressure emerges conspicuously and is heightened endogenously with the passage of time. Even with available products to buy, a consumer is unable to make a purchase once the promotion time runs out. Thus, perceived rivalry caused by LQS becomes peripheral in driving a consumer's arousal. In contrast, under the low LTS condition, there is enough time for a consumer to search and evaluate a product before making a purchase, and the availability of products becomes the main concern for the consumer. Therefore, we posit

H3. *There is an interaction between limited-quantity scarcity and limited-time scarcity on perceived arousal, i.e., the effect of limited-quantity scarcity on perceived arousal is lower in the high limited-time scarcity condition than in the low limited-time scarcity condition.*

3.2. Effect of perceived arousal on impulsive purchase

Affective reactions to an environment determine an individual's response, such as urge to buy impulsively [45]. In the online auction research, perceived arousal ultimately leads to auction fever [12,13]. With respect to auction fever, the competitive arousal theory suggests that perceived arousal can push bidders to bid past their limits [14]. Additionally, arousal is an essential guide for human decision-making (e.g., impulse buying) and is linked to increased risk-taking and greater loss aversion [46]. Therefore, we posit

H4. *Perceived arousal has a positive impact on impulse purchase.*

3.3. Effect of personal impulsiveness

Prior studies have confirmed that personal impulsiveness has a strong positive relationship with a consumer's impulsive purchase both online and offline [8,10,18,47]. Therefore, this paper further concentrates on the moderation role of personal impulsiveness on the relationship between perceived arousal and impulse purchase.

The literature suggests that the valence of an individual's reactions to environmental cues (positive or negative), will magnify the reaction toward an urge to purchase impulsively. High personal impulsiveness has a stronger influence on the relationship between website quality [8], textual information quantity [18], and the urge to purchase impulsively. Furthermore, neural mechanisms support that impulse disposition reflects both emotional ability and behavioral disinhibition [48], and the component processes of perceived arousal and inhibitory control are thus likely to influence behavioral impulsivity [34]. Accordingly, impulsive individuals appear to have difficulty in inhibiting proper responses because their inhibitory responses are exceptionally slow [49]. The self-control perspective indicates that yielding to

temptation, weak self-control to emotion (e.g., arousal) should lead to more impulsive purchases [50]. Therefore, we posit

H5. *The relationship between perceived arousal and impulse purchase is strengthened by personal impulsiveness.*

4. Research method

4.1. Research setting

To accurately capture impulse purchase and test the research model, we chose to conduct a field experiment. In particular, we set up an online store that sold milk tea on the *taobao.com* platform. *Taobao.com* was chosen because online shops on the platform were able to conduct scarcity promotions. As the largest e-commerce platform, *Taobao.com* was widely visited by online consumers, accounting for three-quarters of online sales in China [51]. In our online store, milk tea coupons with a face value of RMB 10 were sold, and consumers could redeem the coupon at our collaborative offline Café and Cake bar that was located near our experimental lab. Each coupon could be redeemed as a cup of milk tea that was the best-selling product in our offline bar.

4.2. Experimental design

A field experiment with a 2 (LQS: high vs. low) \times 2 (LTS: high vs. low) factorial design was conducted. LQS and LTS were shown on our online store webpage by manipulating the number of restricted products and promotion time period, respectively. Interviews with the manager of our offline collaborative bar revealed that the daily sale of milk tea was about 120 cups. Accordingly, in our manipulation of LQS, we set the number of offers to 200, which was about 166.7 % of the bar's average daily sale, as the low level of LQS, and the number of offers to 20, which was about 16.7 % of the bar's average daily sale, as the high level of LQS. There was only one product sold in our online store, hence it would not cost consumers too much time in making a purchase. Furthermore, our pretest of online shopping activities showed that it cost a consumer about 3–5 min to make a purchase. Therefore, regarding the design of LTS, we set the promotion time at 1 h as the low level of LTS and 10 min as the high level of LTS, respectively.

Before the main experiment, a pilot study with 38 subjects was conducted to assess the appropriateness of the experimental setting (i.e., identification of high and low scarcity in terms of limited-quantity and limited-time). Significant differences were found among the four experimental conditions in terms of LQS and LTS. Thus, our experiment setting was effective.

4.3. Experimental procedure

Each participant was assigned to a single lab room to avoid social influence from peers during the experiment. An experimental assistant was available to provide help during the whole experiment process. Computers used in the experiment were of the same screen size to display a constant experimental webpage to each participant. Participants were not aware of any information about the real experiment, until they were assigned to the experiment room. This design was to avoid any confounding effects of online purchase knowledge in the experiment.

Before being exposed to the experimental stimuli, participants were required to complete a questionnaire that included demographics information, personal impulsiveness, price consciousness, online shopping self-efficacy, and online shopping experience. Then, participants were presented with an experimental condition (Appendix A) in which a promotional product, online store on *Taobao.com*, experiment task, and relevant notes were introduced before the experiment began. Next, participants were asked to log in to *Taobao.com* using their own login ID, and search and browse the webpage of our online store (see Fig. 2).

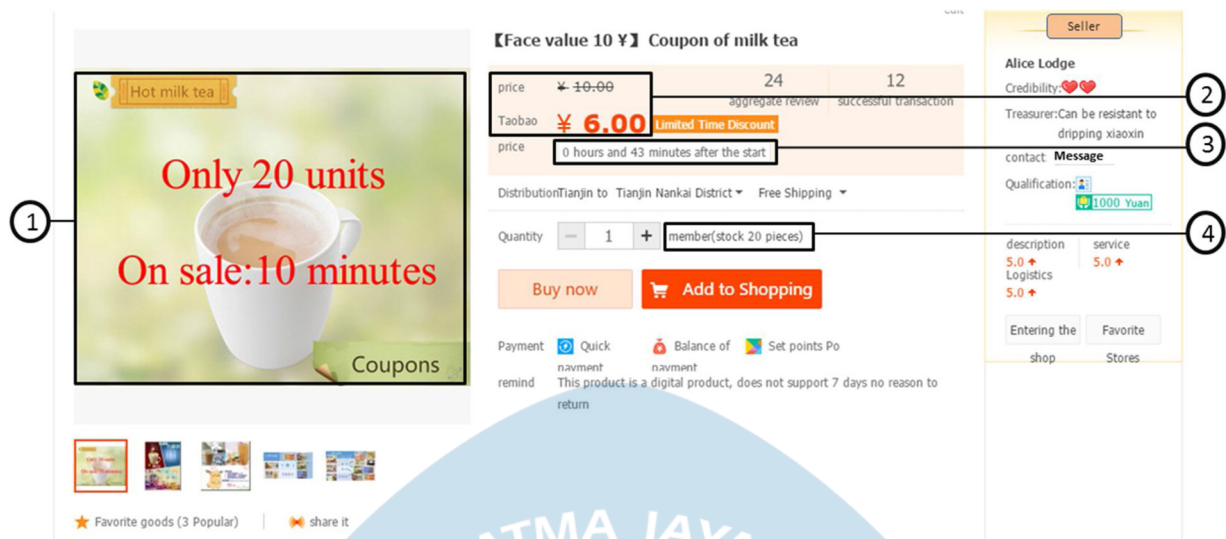


Fig. 2. (Color online) Online Shopping Webpage Environment.

Notes: 1. The picture shows prompt messages of available quantity and time. 2. Original and discounted prices. 3 and 4. Synchronous information update.

After that, they were free to make a purchase decision independently. Thereafter, participants were asked to complete a survey, including questions on manipulation checks, measurement of perceived arousal, and daily beverage buying plan. Finally, participants were debriefed. The survey was conducted in Chinese. We invited two bilingual researchers to work independently to translate the initial English scales into Chinese and then translate them back into English. We compared the translated version with the original questionnaire and made necessary changes, to ensure consistency. Hence, we used the translated version in the Chinese questionnaire.

4.4. Measurement

In the main questionnaire, scarcity manipulation was checked with the questions “How available do you think the offered products are?” and “How available do you think the offered shopping time is?” and the responses were based on a seven-point scale from “extremely sufficient” to “extremely insufficient” [52]. Four items from Russell and Mehrabian [23] (Cronbach’s alpha = 0.812) were adapted to measure perceived arousal. Four items were adapted to measure personal impulsiveness from Beatty and Ferrell [10] (Cronbach’s alpha = 0.793, see Table 5).

Impulse purchase was measured as whether a participant placed an order or not, with “1” indicating impulse purchase and “0” otherwise. Data on participants’ impulse purchase were collected in the online transaction log from our online store in *Taobao.com*. Impulse purchase was justified based on three criteria: (1) participants were suddenly exposed to the experimental stimuli, (2) the decision was made on the spot, and (3) impulsive purchase was considered effective only if a participant had no plan to buy a beverage before the experiment. Thus, the purchase behavior was consistent with the definition of impulse purchase.

We included in the model several control variables (i.e., price consciousness and online shopping self-efficacy) that might affect a consumer’s impulse purchase. Particularly, the literature on impulse purchase suggests that a consumer’s price consciousness affects purchase behavior [53]. Furthermore, we adopted the scale from Compeau and Higgins [54] to measure online shopping self-efficacy. Finally, demographic variables (e.g., gender and age), as simple yet important factors to understand online consumers [55], were included. All measures of the variables in the research are summarized in Table 1.

4.5. Sample demographics and background analyses

Participants in this experiment were undergraduate students from a large public university in China. A total of 202 participants, who did not participate in the pilot study, were recruited to participate in the main experiment to ensure sufficient power with medium-to-high effect size for both the main and interaction effects. Participants from the same major were assigned to the same time batch to prevent them from communicating with each other. They were distributed randomly across all four experimental conditions (Table 2).

Among all the participants, 20 who actually planned to buy beverage on the day were dropped from samples. Among the final 182 participants, 109 were women. The age of participants ranged from 18 to 23, with the average year of online shopping experience being 3.51. Among participants who were assigned randomly to each of the four experimental conditions, there was no significant difference in terms of age, gender, and online shopping experience. The result indicated that participants’ demographics were quite homogeneous across different conditions. Finally, 74 out of the 182 participants placed a purchase order in our online store (see Table 3).

5. Data analyses and results

5.1. Manipulation check

On a seven-point Likert scale, participants in the high LQS condition (i.e., 20 products) reported a mean value of 4.37 for the extent of perceived quantity scarcity (standard deviation: 1.510), and participants in the low LQS (i.e., 200 products) reported 3.37 (standard deviation: 1.692). The difference was significant ($t = -4.221$, $p < 0.001$). Hence, the manipulation for LQS worked as anticipated. Participants in the high LTS condition (i.e., one hour) reported a mean value of 4.47 for the extent of perceived time scarcity (standard deviation: 1.592), and participants in the low LTS (i.e., 10 min) reported a mean value of 3.17 (standard deviation: 1.554). The difference was also significant ($t = -5.591$, $p < 0.001$). Therefore, the manipulation for LTS worked.

Table 4 shows that items loaded well on their intended factors and lightly on unintended factors, thus indicating construct validity. The correlation matrix is reported in Table 5.

Table 1
Variables and Items.

Constructs	Items
Personal impulsiveness	Wells et al. [8] (7-point Likert Scale) impul1: "Just do it" describes the way I buy things. impul2: I often buy things without thinking. impul3: "I see it, I buy it" describes me. impul4: "Buy now, think about it later" describes me.
Scarcity manipulation	[52] (7-point Likert Scale) Limited-quantity scarcity: How available do you think the offered products are? "extremely sufficient" to "extremely insufficient." Limited-time scarcity: How available do you think the offered shopping time is? "extremely sufficient" to "extremely insufficient."
Perceived Arousal	Russell and Mehrabian [23] (7-point Likert Scale) arl1: Relaxed-Stimulated. arl2: Calm-Excited. arl3: Sleepy-Wide awake. arl4: Unaroused-Aroused.
Price Consciousness	Lichtenstein et al. [53] (7-point Likert Scale) priCon1: I am not willing to put in extra effort to find lower prices. priCon2: I will shop for groceries at more than one store to take advantage of low prices. priCon3: The money saved by finding low prices is usually not worth the time and effort. priCon4: I would never shop at more than one store to find low prices. priCon5: The time it takes to find low prices is usually not worth the effort.
Online Shopping Self-Efficacy	Compeau and Higgins [54] (7-point Likert Scale) onSSE1: I could complete online shopping if there was no one around to tell me what to do as I go. onSSE2: I could complete online shopping if I had never used a shopping website. onSSE3: Wherever an organizational change occurs on a shopping website, I'm sure I can handle it. onSSE4: I could complete online shopping if I had seen someone else using a shopping website before trying it myself.
Impulse purchase	0: If a participant did not place an order 1: If a participant did place an order

Table 2
Mean Values of Perceived Arousal Among Experimental Conditions.

	Low LTS	High LTS	
Low LQS	2.852 (N = 41)	4.265 (N = 49)	3.558 (N = 90)
High LQS	4.347 (N = 48)	4.722 (N = 44)	4.534 (N = 92)
	3.599 (N = 89)	4.493 (N = 93)	

Table 4
Results of Factor Analysis.

	Perceived arousal	Personal impulsiveness	Price consciousness	Online shopping self-efficacy
arl1	.813	.166	.012	.161
arl2	.811	.030	.024	.002
arl3	.769	-.035	-.095	.051
arl4	.791	-.063	.120	.022
impul1	.116	.756	.027	.133
impul2	.005	.877	.040	-.007
impul3	-.056	.727	.064	.038
impul4	.020	.780	.158	-.073
priCon1	.141	.113	.726	.056
priCon2	.022	.027	.766	-.077
priCon3	-.038	.218	.745	-.002
priCon4	-.073	-.052	.809	-.092
onSSE1	.058	.027	-.024	.822
onSSE2	.027	-.044	-.072	.907
onSSE3	.016	.114	.067	.867
onSSE4	.118	.003	-.090	.758

5.2. Results pertaining to perceived arousal

ANOVA was conducted to analyze the joint effects of LQS and LTS on perceived arousal (Table 6). The results revealed significant effects of LQS ($F(1,180) = 41.466, p < 0.01$) and LTS ($F(1,180) = 34.797, p < 0.01$). Specifically, the mean of perceived arousal in high LQS (4.534) was larger than that in low LQS (3.558), indicating the support of H1. Additionally, the mean of perceived arousal in high LTS (4.493) was larger than that in low LTS (3.599), suggesting that H2 was supported (see Table 2).

Given that the interaction term ($F(1,180) = 11.757, p < 0.01$) was

Table 3
Sample Description.

Demographic	Category	Whole Sample		Group 1		Group 2		Group 3		Group 4	
		Fre	(%)	Fre	(%)	Fre	(%)	Fre	(%)	Fre	(%)
Gender	Male	73	40.11	15	36.60	20	41.67	19	38.78	19	43.18
	Female	109	59.89	26	63.40	28	58.33	30	61.22	25	56.82
Age	18-19	37	20.33	3	7.32	12	25.00	11	22.45	11	25
	20-21	135	74.18	35	85.37	34	70.83	35	71.43	31	70.46
	22-23	10	5.49	3	7.32	2	4.16	3	6.12	2	4.55
Online shopping experience	< = 2 yrs	57	31.32	11	25.00	17	35.42	16	32.65	13	29.55
	2-4 yrs	77	42.31	17	38.64	17	35.42	22	44.90	21	47.73
	4-6 yrs	39	21.43	9	20.45	11	22.92	11	22.45	8	18.18
	> 6 yrs	9	4.94	4	9.09	3	6.25	0	0	2	4.55
Impulse purchase	0	108	59.34	31	75.61	21	42.75	32	65.31	24	54.55
	1	74	40.66	10	24.39	27	56.25	17	34.69	20	45.45

Table 5
Variable Statistics and Correlations.

	M	SD	AVE	CR	CA	CO	Gender	Age	PC	OSSE	PA	PI
Gender	0.599	0.492	–	–	–	–	–	–	–	–	–	–
Age	20.132	0.850	–	–	–	–	0.003	–	–	–	–	–
PC	3.188	1.043	0.585	0.849	0.768	0.585	–0.052	–0.081	0.765	–	–	–
OSSE	5.631	1.091	0.708	0.906	0.864	0.708	0.011	–0.009	–0.083	0.841	–	–
PA	4.089	1.237	0.633	0.873	0.813	0.633	–0.023	–0.056	0.012	0.148	0.796	–
PI	2.828	1.255	0.609	0.861	0.801	0.609	–0.042	0.036	0.168	0.051	0.036	0.781
IP	0.918	1.583	–	–	–	–	–0.092	0.107	–0.147	0.101	0.107	0.184

Notes. PC: price consciousness; OSSE: online shopping self-efficacy; PA: perceived arousal; PI: personal impulsiveness; IP: impulse purchase; M: mean; SD: standard deviation; AV: average variance extracted; CR: composite reliability; CA: Cronbach’s alpha; CO: communality.

Table 6
ANOVA Results and Analysis of Simple Mean Effects.

Source	mean	Type III sum of squares	df	Mean square	F	Sig.
Overall sample						
LQS	4.045	43.118	1	43.118	41.466	.000
LTS	4.046	36.183	1	36.183	34.797	.000
LQS x LTS	12.225	12.225	1	12.225	11.757	.001
Error	185.090	178	1.040			
Total	3297.972	182				
LTS = Low						
LQS	3.599	49.461	1	49.461	41.977	.000
Error	102.512	87	1.178			
Total	1343.035	89				
LTS = High						
LQS	4.493	4.827	1	4.827	5.319	.023
Error	82.578	91	.907			
Total	1954.938	93				

Notes: Dependent variable: perceived arousal; LQS: limited-quantity scarcity; LTS: limited-time scarcity. $R^2 = .315$ (adjusted $R^2 = .303$).

Table 7
Testing Result on Impulse Purchase.

Variables	Model 1	Model 2	Model 3
Gender	–0.368 (0.312)	–0.327 (0.317)	–0.312 (0.324)
Age	0.042 (0.182)	0.065 (0.184)	0.045 (0.189)
Online shopping experience	–0.125 (0.096)	–0.122 (0.097)	–0.161 (0.101)
Online shopping self-efficacy	0.159 (0.150)	0.116 (0.153)	0.114 (0.158)
Price consciousness	0.021 (0.213)	0.007 (0.218)	–0.156 (0.231)
Perceived arousal		0.289* (0.131)	0.281* (0.135)
Personal impulsiveness			0.339* (0.134)
Perceived arousal* Personal impulsiveness			0.062 (0.165)
Observations	182	182	182
Pseudo R ²	0.017	0.037	0.065

Notes: Gender (0: male, 1: female). Robust standard errors are in parentheses. * $p < 0.05$, ** $p < 0.01$.

5.3. Results pertaining to impulsive purchase

Because impulse purchase was measured using a binary scale, logistic regression was conducted to test H4 and H5. The cross product of standardized perceived arousal and standardized personal impulsiveness was included to examine the significance of the moderating path. Model 2 in Table 7 shows that perceived arousal was found to have a significant positive effect ($\beta = 0.289$, $p < 0.05$) on impulse purchase. However, model 3 in Table 3 demonstrates that the moderating effect of personal impulsiveness was not significant ($\beta = 0.062$, $p > 0.05$). Therefore, H4 was supported, whereas H5 was not. Additionally, model 1 in Table 7 depicts that all control variables had no significant influences on impulse purchase. Fig. 4 demonstrates the testing result.

6. Discussion and conclusion

6.1. Discussion of results

The results supported all hypotheses but H5. LQS and LTS increased a consumer’s perceived arousal that then led to the consumer’s impulse purchase. Additionally, the triggering effect of LQS in forming consumer’s perceived arousal became less prominent in the condition of high LTS than in the condition of low LTS.

However, there was no significant individual difference regarding the influence of perceived arousal on impulse purchase from the perspective of personal impulsiveness. This result was much similar to Chen et al. [18]. A plausible explanation roots from the study of Wells et al. [8], which found that any influence personal impulsiveness had on impulse buying was contingent on how the environmental cues (e.g., website quality) were perceived (i.e., positively or negatively).

Estimated marginal means of arousal

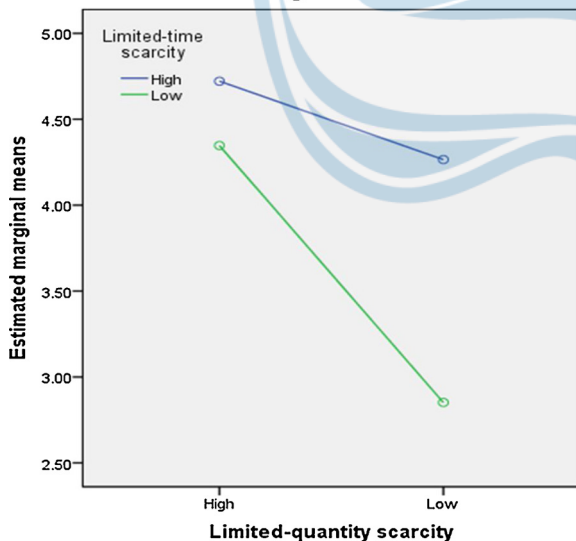


Fig. 3. Mean Plot of Perceived Arousal.

significant, we proceeded to conduct a simple main effect analysis. The results revealed that (1) high LQS was significantly associated with higher perceived arousal than low LQS under the low LTS condition ($F(1, 87) = 41.977$, $p < 0.01$), and (2) either high or low LQS was significantly different from each other in terms of affecting perceived arousal under the high LTS condition ($F(1, 91) = 5.319$, $p = 0.023$; see Tables 6 and Fig. 3). Therefore, H3 was supported.

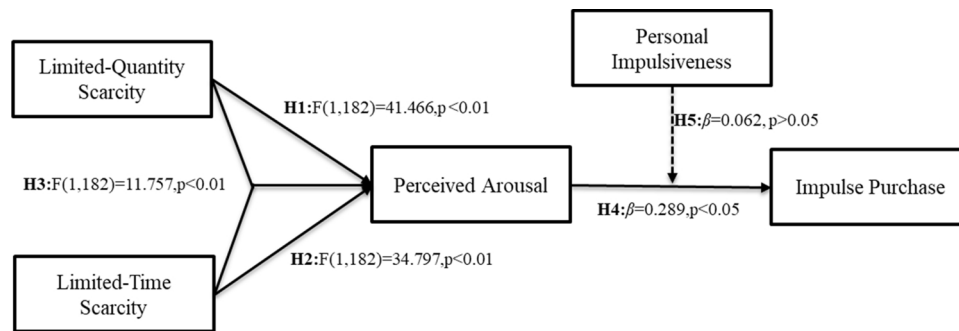


Fig. 4. Model Testing Result.

Specifically, when the quality of the environmental cues (i.e., website quality) varied little, an interaction might not exist between an individual's impulsiveness and the shopping environment. In our study, all participants were presented with a constant high-quality webpage that was supported by the *taobao.com* platform. Therefore, the response to the website did not demonstrate individual differences in personal impulsiveness. Furthermore, another possibility is that participants in this study were all relatively less impulsive, and the lack of sufficient variance in personal impulsiveness (see Table 5) caused the relationship between perceived arousal and impulse purchase little significant difference among participants.

6.2. Theoretical contributions

This study makes a few contributions to the existing literature on impulse purchase. After building a real online store in one of the world's most popular online platforms, *taobao.com*, this study measured actual impulse buying through a field experiment. Thereafter, this study represents one of the first assessments, to our best knowledge, of the psychological mechanism of impulse purchase in online promotions through a natural field setting. The results are consistent with predictions from the competitive arousal model [14] and extend their findings by providing evidence for the psychological underpinnings of impulse purchase under online scarcity marketing. Specifically, the underlying mechanism of online scarcity promotion for impulse purchase is the consumer's arousal, and perceived rivalry and time pressure are two key driving forces to trigger arousal. Additionally, the arousal mechanism could also contribute to the online impulse purchase literature through providing a new and novel approach to explain the roles of environmental cues on impulse purchase, including website designs [7–9], product recommendation strategies [6], and social references [18].

Second, taking into account the information visibility in the online shopping environment, this study demonstrates the interaction of LQS and LTS on perceived arousal that leads to impulse purchase. In particular, the effect of LQS is less prominent in the condition of high level of LTS. Hence, in online promotions, the driving forces of perceived rivalry and time pressure not only function separately but also demonstrate different effectiveness in shaping consumer behaviors. While past studies have well understood the separate effects of LQS and LTS [4] or perceived rivalry and time pressure [34], this study deepens the understanding by investigating their interaction. Furthermore, the finding on this interaction effect advances the competitive arousal model [14]. Specifically, time pressure is the primary driving force, and perceived rivalry is the secondary one that fuels an individual's arousal toward environmental cues. Past studies based on the model have not considered the simultaneous effects of the two underpinnings, i.e., perceived rivalry and time pressure. Our result on the interaction between LQS and LTS provides insights for future studies that intend to be developed on the basis of this model to examine the interaction effect.

Finally, this study provides an in-depth understanding of personal

impulsiveness by investigating its moderating effect on the relationship between perceived arousal and impulse purchase. Although the study did not support the moderating effect of consumers' personal impulsiveness, the empirical evidence was another step toward recognizing the potentially moderating effect. Wells et al. [8] suggested that there was an interaction effect of personal impulsiveness and shopping environment (i.e., cognitive state) on impulsive purchase. Chen et al. [18] did not justify the interaction between personal impulsiveness and affect that was measured as the number of "likes." Based on our theoretical and empirical evidences, a consumer's impulsiveness trait might only moderate the relationship between cognitive state and consumer behavior, but have no influence on the relationship between affective state and consumer behavior. This study offers new insight into the role of personal traits (e.g., impulsiveness) in the online impulse purchase literature, and calls for the importance to distinguish cognitive state and affective state across personal impulsiveness in future work.

6.3. Practical implications

This study offers several key managerial implications. Many online promotion strategies are deployed to attract potential consumers and induce impulse purchase in online markets. Impulse purchase represents almost half of all the money spent in online markets. Our study has revealed that consumers may engage in impulse purchase in a competitive online shopping environment. For online retailers that are interested in creating competitions around their promotions, the scarcity appeal is a strategic option. Online retailers could draw on LQS and LTS to generate buyers' arousal toward products when releasing a new brand or expanding sales of existing brands.

In addition, based on the interaction effect of perceived rivalry and time pressure, online retailers can effectively deploy their scarcity promotion strategy. Specifically, online retailers can coherently design LQS and LTS to maintain a stable quantity of flow (e.g., user activation and retention). Furthermore, this study emphasizes arousal in the consumer's behavioral response, and online retail managers can stimulate consumers' arousal by manipulating other related cues (e.g., website design) to promote consumptions. Regardless of the degree of the consumer's impulsiveness, the inherent personal trait has no influence on the performance effectiveness of the scarcity promotion on impulse purchase. Hence, online retailers may not need to design customized scarcity promotions that target on different segments of online consumers across personal impulsiveness.

Finally, for consumers, there is one noteworthy emotion (i.e., arousal) when purchasing items online. Our study has revealed that stronger personal arousal can significantly increase a consumer's impulse purchase. Arousal can be manipulated unconsciously by an online retailers' application of scarcity information to promote consumptions. A consumer's capability of controlling personal arousal is an effective way to avoid impulsive purchase that may cause a waste of money. In addition, this study also shows an interesting evidence that consumers

would purchase impulsively once aroused, regardless of personal impulsiveness. Hence, it is reasonable to explain why everyone has an impulse purchase experience in an online shopping event (e.g., Singles' Day).

6.4. Limitations and future research

There are several limitations in this study. First, although students are an important group of online consumers and served as an appropriate sample for studying online consumer behavior in our study, the homogeneity of the sample can be criticized. The student sample lacks strong generalizability to the typical population of online consumers. Thus, replications with different samples in more natural settings are essential to generalize the results. Furthermore, the experiment participants were all Chinese, and previous studies have demonstrated culture differences in online consumer behavior (Cyr 2008; Leidner and Kayworth 2006). Hence, one of the future directions may look at the cultural issues on the effectiveness of scarcity promotion for impulsive purchase. Second, in the webpage used for the experiment in this study, the scarcity messages in terms of limited-quantity and limited-time were updated only when the webpage was refreshed. This means that a consumer was unable to see the latest changes if he or she stayed on the same page for a long period of time. This might have impaired the consumer's arousal and the effect of scarcity messages. In such a case, more advanced IT instruments (e.g., timer) that can display the information dynamics of LTS and LQS should be employed in future experimental designs. Finally, prior studies have also shown a rational decision-making process associated with online impulse purchase [56]. Therefore, one of the future research directions is to incorporate the rational decision-making process (e.g., cognitive effects) in uncovering the mechanism between online scarcity promotion and impulse purchase.

CRediT authorship contribution statement

Yi Wu: Methodology, Writing - original draft, Formal analysis. **Liwei Xin:** Data curation, Writing - original draft. **Dahui Li:** Writing - review & editing. **Jie Yu:** Validation. **Junpeng Guo:** Conceptualization, Resources.

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Appendix A. Experiment Introduction

Introduction of offline shop

The shop, located near the west gate of the school, sells various types of milk tea. The average daily sale is approximately 120 cups^a. The milk tea is popular and palatable.

Introduction of online store: Alice Lodge Welcome

The online store on *Taobao.com*, operated by the authors of this study, is reliable and trustworthy.

Experiment description

Currently, the shop promotes coupons of milk tea from its online store *Alice Lodge Welcome*. Each coupon with a face value of 10 Yuan

(approximately \$1.5) is on sale at a discount of 40 %. The promotion with a quantity restriction of 200 units and time restriction of one hour^b will start at 3:00 pm^c.

Experiment task

Please log in to *Taobao.com* using your own ID, and search and visit the store *Alice Lodge Welcome*. Thereafter, you will be required to browse the promotion messages and products information, and make a purchase decision independently. Please kindly note that:

- (1) You are free to not purchase the product or buy any amount (e.g., 1, 2, 3, 4, and 5) within the given availability.
- (2) Please make sure not to disclose any details of the experiment to other participants or to others in your cohort, who may participate in the experiment after you.
- (3) Please ensure that you fully complete the questionnaire before leaving the experiment room.

Notes:^a120 cups are a hint to participants for perceiving the scarcity of the restricted quantity. ^b200 and one hour are changed according to experiment conditions. ^c3:00 pm will be changed according to the actual schedule.

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