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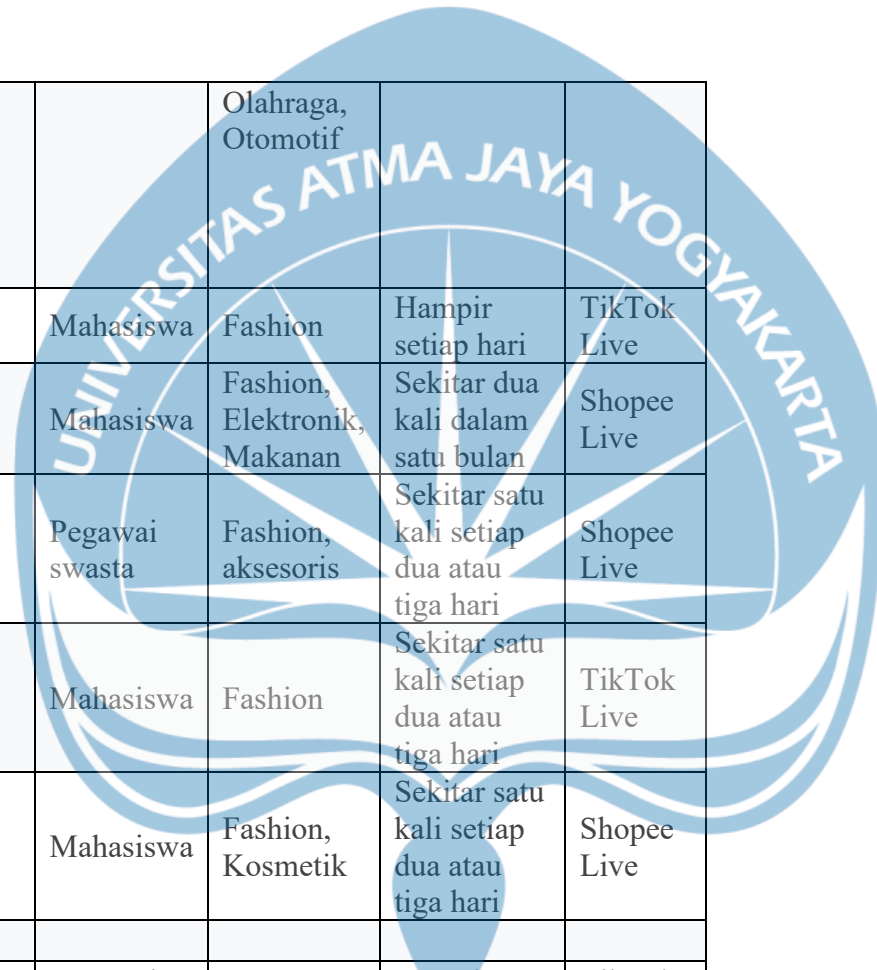
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Kelamin	Usia	Pendidikan	Pekerjaan	Kategori	Penggunaan	Platform
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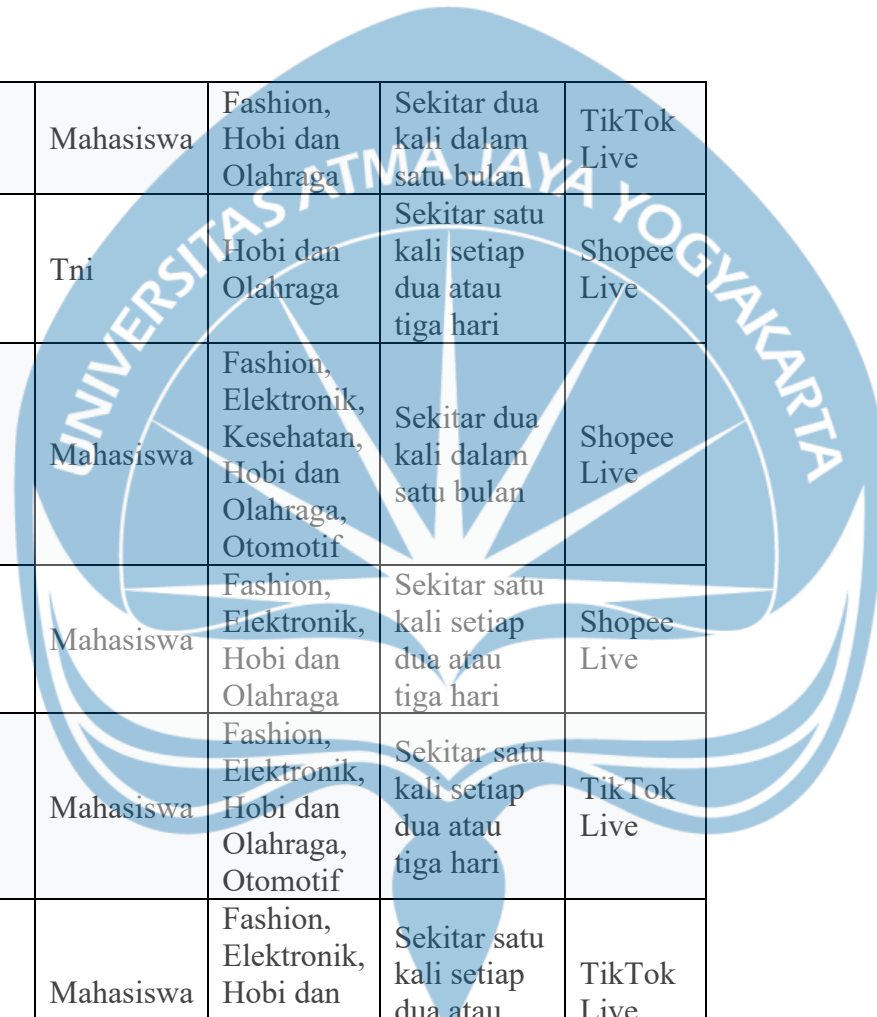
Pria	23	S1	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga, Otomotif	Hampir setiap hari	Live
Pria	21	S1	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga	Sekitar dua kali dalam satu bulan	TikTok Live
Pria	21	SMA	Mahasiswa	Elektronik, Otomotif	Sekitar dua kali dalam satu bulan	TikTok Live
Pria	21	SMA	Wirausaha	Produk Bayi dan Anak	Sekitar dua kali dalam satu bulan	TikTok Live
Pria	23	S1	Wirausaha	Fashion, Elektronik	Sekitar dua kali dalam satu bulan	TikTok Live
Pria	22	SMA	Mahasiswa	Elektronik, Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Pria	21	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga, Buku dan alat tulis	Hampir setiap hari	TikTok Live



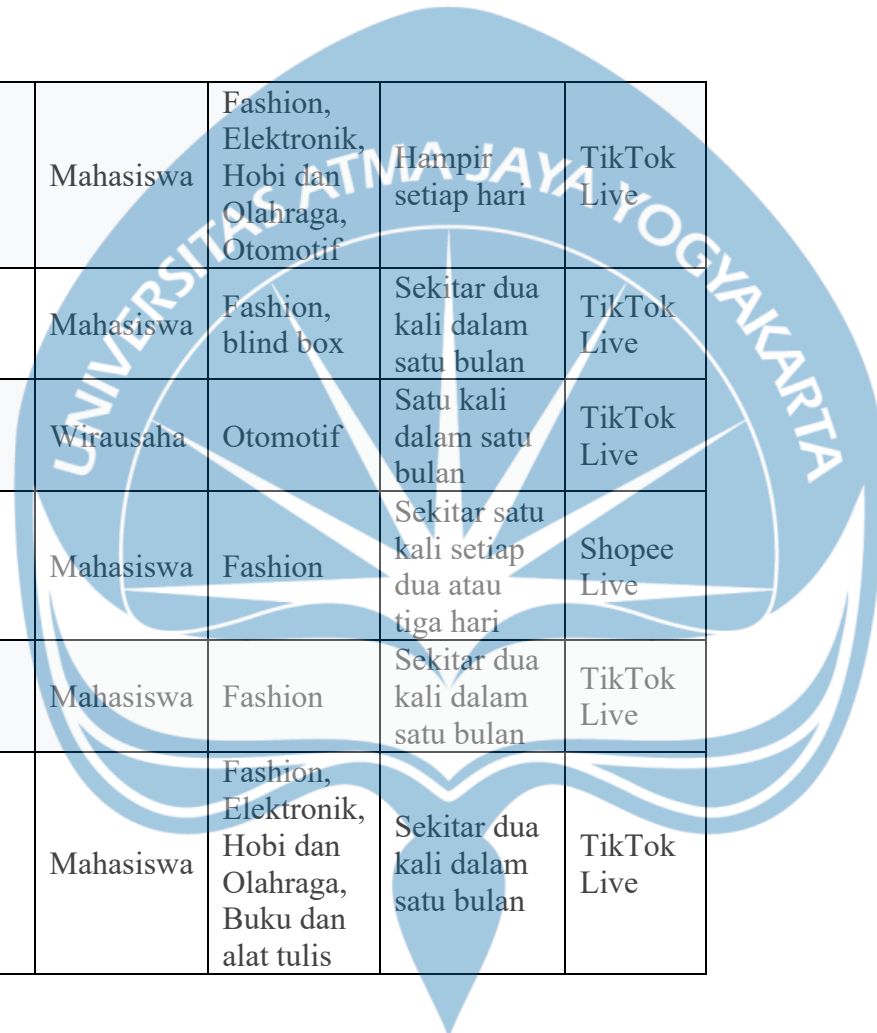
Pria	21	S1	Mahasiswa	Elektronik	Sekitar dua kali dalam satu bulan	TikTok Live
Pria	22	SMA	Mahasiswa	Fashion, Otomotif	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	22	SMA	Mahasiswa	Fashion	Hampir setiap hari	TikTok Live
Pria	20	S1	Mahasiswa	Otomotif	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Wanita	28	S1	Wirausaha	Fashion, Kesehatan, Hobi dan Olahraga, Beauty	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Wanita	2007	SMA	Mahasiswa	Fashion, Elektronik, Buku dan alat tulis, kosmetik	Sekitar dua kali dalam satu bulan	TikTok Live
Pria	22	S1	Sales BYD ARISTA PONDOK INDAH	Fashion, Elektronik, Produk Bayi dan Anak, Hobi dan	Sekitar satu kali setiap dua atau tiga hari	TikTok Live



				Olahraga, Otomotif		
Wanita	18	SMA	Mahasiswa	Fashion	Hampir setiap hari	TikTok Live
Wanita	19	SMA	Mahasiswa	Fashion, Elektronik, Makanan	Sekitar dua kali dalam satu bulan	Shopee Live
Wanita	33	S1	Pegawai swasta	Fashion, aksesoris	Sekitar satu kali setiap dua atau tiga hari	Shopee Live
Wanita	18	SMA	Mahasiswa	Fashion	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Wanita	18	SMA	Mahasiswa	Fashion, Kosmetik	Sekitar satu kali setiap dua atau tiga hari	Shopee Live
Pria	22	SMA	Pegawai swasta	Elektronik	Hampir setiap hari	TikTok Live



Pria	21	SMA	Mahasiswa	Fashion, Hobi dan Olahraga	Sekitar dua kali dalam satu bulan	TikTok Live
Pria	33	SMA	Tni	Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	Shopee Live
Pria	21	S1	Mahasiswa	Fashion, Elektronik, Kesehatan, Hobi dan Olahraga, Otomotif	Sekitar dua kali dalam satu bulan	Shopee Live
Pria	22	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	Shopee Live
Pria	22	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga, Otomotif	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Pria	23	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga, Otomotif	Sekitar satu kali setiap dua atau tiga hari	TikTok Live



Wanita	23	S1	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga, Otomotif	Hampir setiap hari	TikTok Live
Wanita	21	SMA	Mahasiswa	Fashion, blind box	Sekitar dua kali dalam satu bulan	TikTok Live
Pria	30	SMA	Wirausaha	Otomotif	Satu kali dalam satu bulan	TikTok Live
Wanita	21	SMA	Mahasiswa	Fashion	Sekitar satu kali setiap dua atau tiga hari	Shopee Live
Wanita	21	S1	Mahasiswa	Fashion	Sekitar dua kali dalam satu bulan	TikTok Live
Pria	22	S1	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga, Buku dan alat tulis	Sekitar dua kali dalam satu bulan	TikTok Live

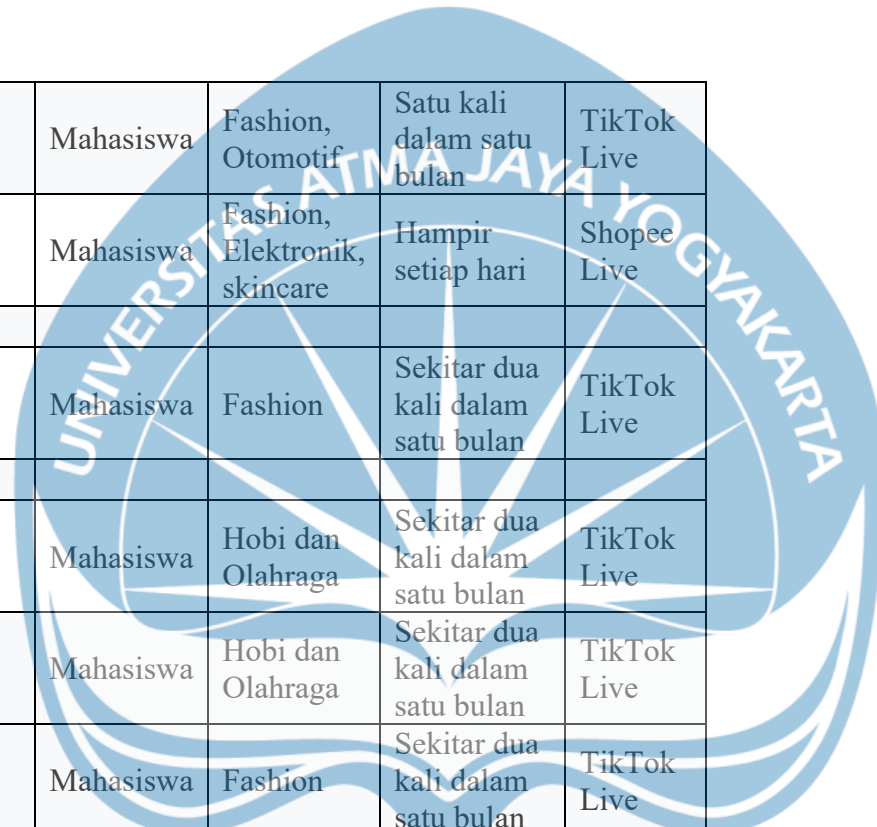
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Pria	21	S1	Mahasiswa	Fashion	Satu kali dalam satu bulan	Shopee Live
Pria	21	SMA	Mahasiswa	Fashion	Satu kali dalam satu bulan	TikTok Live
Wanita	20	SMA	Mahasiswa	Fashion, Elektronik, Kesehatan	Sekitar dua kali dalam satu bulan	TikTok Live
Pria	22	SMA	Mahasiswa	Makanan	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Wanita	23	S1	Freelance	Fashion	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	22	SMA	Mahasiswa	Fashion, Kesehatan, Hobi dan Olahraga, Buku dan alat tulis	Sekitar satu kali setiap dua atau tiga hari	TikTok Live



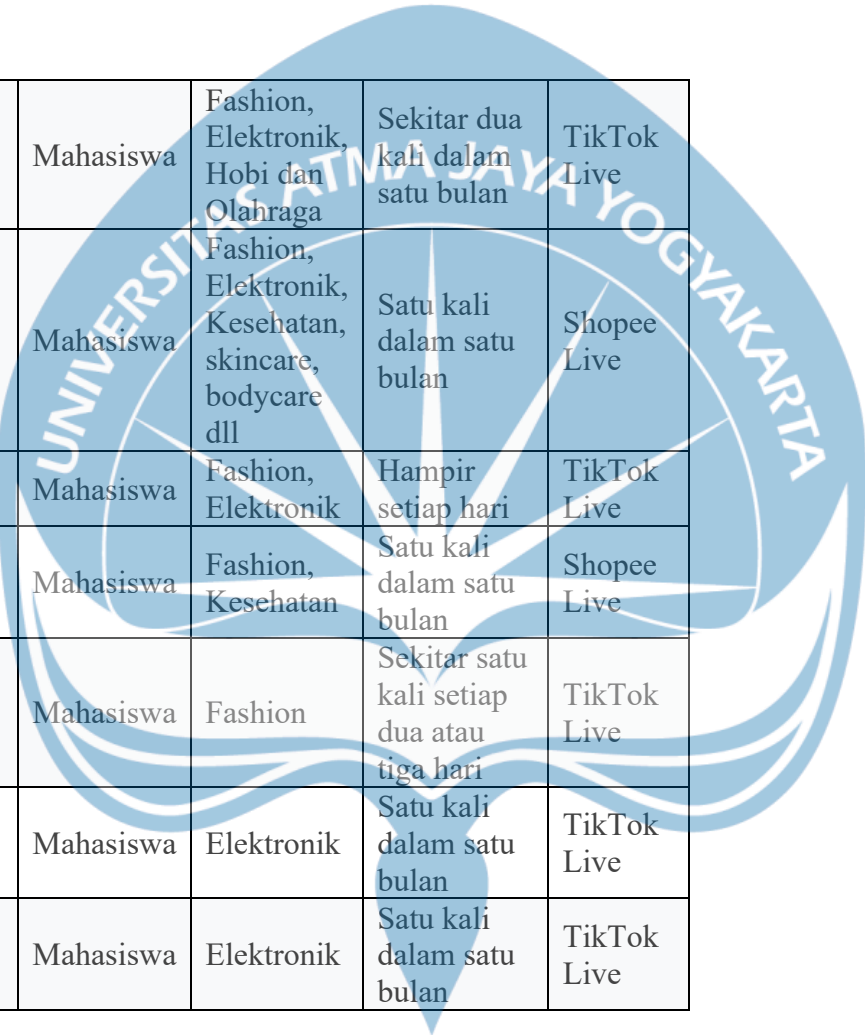
Wanita	28	S1	Pegawai swasta	Fashion	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Wanita	22	SMA	Mahasiswa	Fashion	Hampir setiap hari	Shopee Live
Wanita	19	S1	Mahasiswa	Fashion, Kesehatan, Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	Shopee Live
Pria	2003	S1	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga, makanan	Sekitar dua kali dalam satu bulan	TikTok Live
Pria	21	SMA	Mahasiswa	Fashion, Hobi dan Olahraga, Buku dan alat tulis	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Wanita	20	SMA	Mahasiswa	Fashion, Hobi dan Olahraga, Buku dan alat tulis	Sekitar dua kali dalam satu bulan	TikTok Live
Pria	24	S1	Pegawai swasta	Fashion, Hobi dan Olahraga	Satu kali dalam satu bulan	TikTok Live



Pria	22	SMA	Mahasiswa	Fashion, Hobi dan Olahraga	Sekitar dua kali dalam satu bulan	Shopee Live
Wanita	19	SMA	Mahasiswa	Fashion, Elektronik, Buku dan alat tulis	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Pria	19	SMA	Mahasiswa	Fashion, Otomotif	Satu kali dalam satu bulan	TikTok Live
Wanita	19	SMA	Mahasiswa	Fashion	Satu kali dalam satu bulan	TikTok Live
Wanita	21	S1	Mahasiswa	Fashion, Elektronik, Kesehatan, Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Wanita	19	SMA	Mahasiswa	Fashion	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	19	SMA	Mahasiswa	Fashion	Sekitar satu kali setiap dua atau tiga hari	TikTok Live

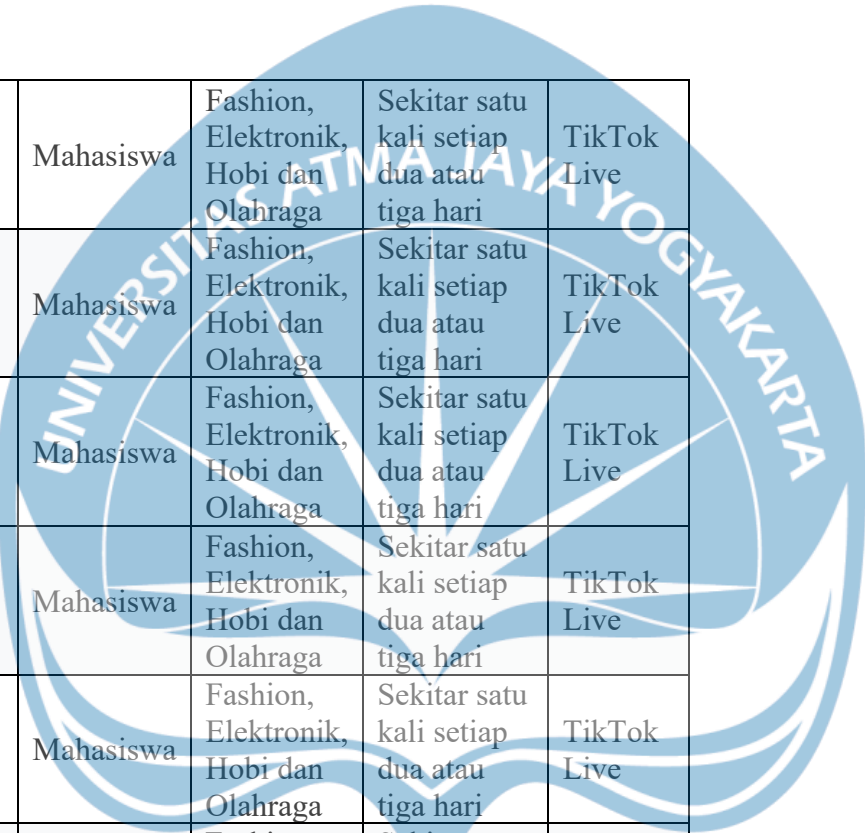


Pria	19	SMA	Mahasiswa	Fashion, Otomotif	Satu kali dalam satu bulan	TikTok Live
Wanita	20	SMA	Mahasiswa	Fashion, Elektronik, skincare	Hampir setiap hari	Shopee Live
Wanita	20	SMA	Mahasiswa	Fashion	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	21	S1	Mahasiswa	Hobi dan Olahraga	Sekitar dua kali dalam satu bulan	TikTok Live
Pria	19	S1	Mahasiswa	Hobi dan Olahraga	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	19	S1	Mahasiswa	Fashion	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	23	S1	Mahasiswa	Fashion, make up	Satu kali dalam satu bulan	TikTok Live
Wanita	32	S1	Freelance	Fashion, Hobi dan Olahraga, Buku dan alat tulis	Sekitar dua kali dalam satu bulan	Shopee Live



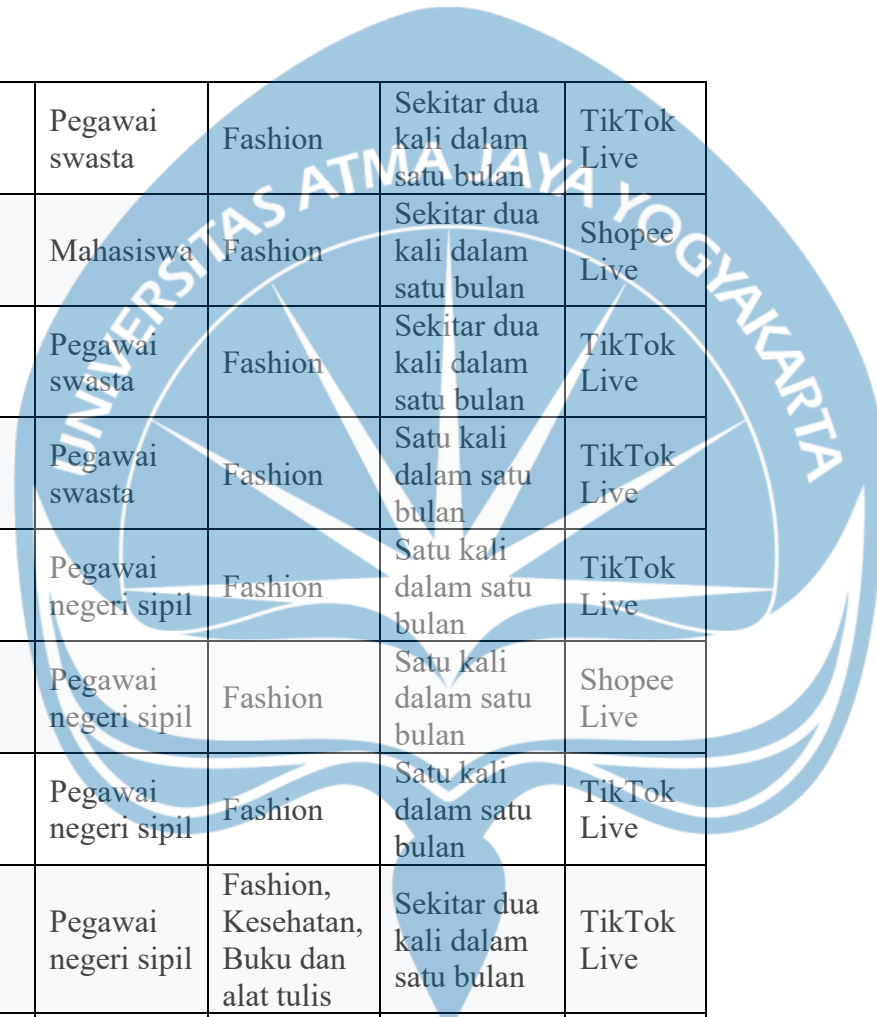
Wanita	20	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	20	SMA	Mahasiswa	Fashion, Elektronik, Kesehatan, skincare, bodycare dll	Satu kali dalam satu bulan	Shopee Live
Pria	21	SMA	Mahasiswa	Fashion, Elektronik	Hampir setiap hari	TikTok Live
Pria	20	SMA	Mahasiswa	Fashion, Kesehatan	Satu kali dalam satu bulan	Shopee Live
Wanita	18	SMA	Mahasiswa	Fashion	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Pria	19	S1	Mahasiswa	Elektronik	Satu kali dalam satu bulan	TikTok Live
Pria	19	S1	Mahasiswa	Elektronik	Satu kali dalam satu bulan	TikTok Live

Wanita	20	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga, Buku dan alat tulis	Hampir setiap hari	Shopee Live
Wanita	19	SMA	Mahasiswa	Fashion	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	21	S1	Mahasiswa	Fashion, Hobi dan Olahraga	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	19	SMA	Mahasiswa	Fashion	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	20	SMA	Mahasiswa	Fashion, Elektronik	Satu kali dalam satu bulan	TikTok Live
Wanita	20	SMA	Mahasiswa	Fashion, Kesehatan	Sekitar dua kali dalam satu bulan	TikTok Live
Pria	22	SMA	Mahasiswa	Fashion, Otomotif	Sekitar dua kali dalam satu bulan	TikTok Live
Pria	23	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	TikTok Live



Pria	23	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Pria	23	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Pria	23	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Pria	23	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Pria	23	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Pria	23	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Pria	23	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	TikTok Live

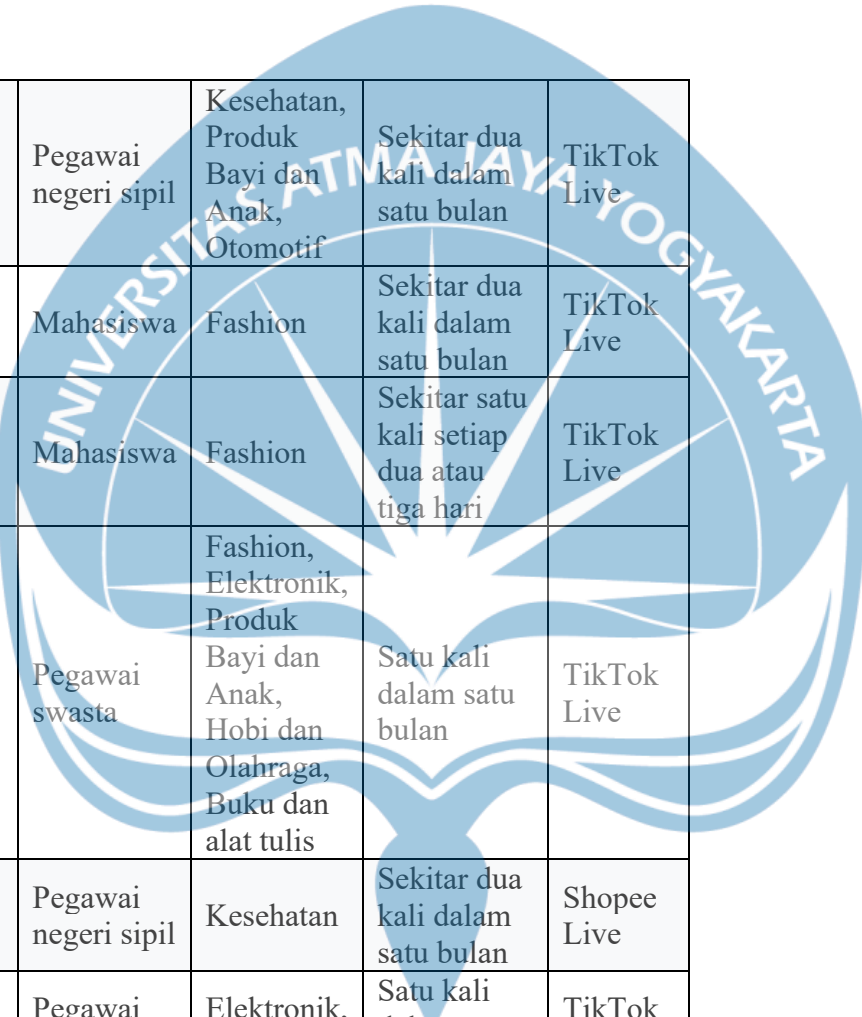
Pria	23	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Pria	23	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Pria	23	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Pria	23	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Pria	23	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Pria	23	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Pria	23	SMA	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Wanita	24	S1	Pegawai swasta	Fashion	Satu kali dalam satu bulan	TikTok Live



Wanita	25	SMA	Pegawai swasta	Fashion	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	25	SMA	Mahasiswa	Fashion	Sekitar dua kali dalam satu bulan	Shopee Live
Wanita	26	S1	Pegawai swasta	Fashion	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	25	SMA	Pegawai swasta	Fashion	Satu kali dalam satu bulan	TikTok Live
Wanita	23	SMA	Pegawai negeri sipil	Fashion	Satu kali dalam satu bulan	TikTok Live
Wanita	23	SMA	Pegawai negeri sipil	Fashion	Satu kali dalam satu bulan	Shopee Live
Wanita	24	SMA	Pegawai negeri sipil	Fashion	Satu kali dalam satu bulan	TikTok Live
Wanita	26	SMA	Pegawai negeri sipil	Fashion, Kesehatan, Buku dan alat tulis	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	25	SMA	Pegawai swasta	Fashion, Kesehatan	Satu kali dalam satu bulan	TikTok Live



Pria	28	S1	Pegawai negeri sipil	Produk Bayi dan Anak, Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	Shopee Live
Wanita	26	SMA	Pegawai negeri sipil	Elektronik	Sekitar satu kali setiap dua atau tiga hari	Shopee Live
Pria	26	S1	Pegawai negeri sipil	Hobi dan Olahraga, Otomotif	Sekitar dua kali dalam satu bulan	Shopee Live
Wanita	26	SMA	Wirausaha	Elektronik	Satu kali dalam satu bulan	TikTok Live
Wanita	24	SMA	Mahasiswa	Fashion	Satu kali dalam satu bulan	TikTok Live
Wanita	25	SMA	Pegawai negeri sipil	Fashion	Hampir setiap hari	Shopee Live
Wanita	25	SMA	Pegawai negeri sipil	Fashion, Elektronik	Satu kali dalam satu bulan	TikTok Live
Wanita	25	SMA	Pegawai negeri sipil	Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	TikTok Live



Pria	26	SMA	Pegawai negeri sipil	Kesehatan, Produk Bayi dan Anak, Otomotif	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	25	SMA	Mahasiswa	Fashion	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	25	SMA	Mahasiswa	Fashion	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Wanita	26	SMA	Pegawai swasta	Fashion, Elektronik, Produk Bayi dan Anak, Hobi dan Olahraga, Buku dan alat tulis	Satu kali dalam satu bulan	TikTok Live
Wanita	27	S1	Pegawai negeri sipil	Kesehatan	Sekitar dua kali dalam satu bulan	Shopee Live
Wanita	27	S1	Pegawai swasta	Elektronik, Kesehatan	Satu kali dalam satu bulan	TikTok Live



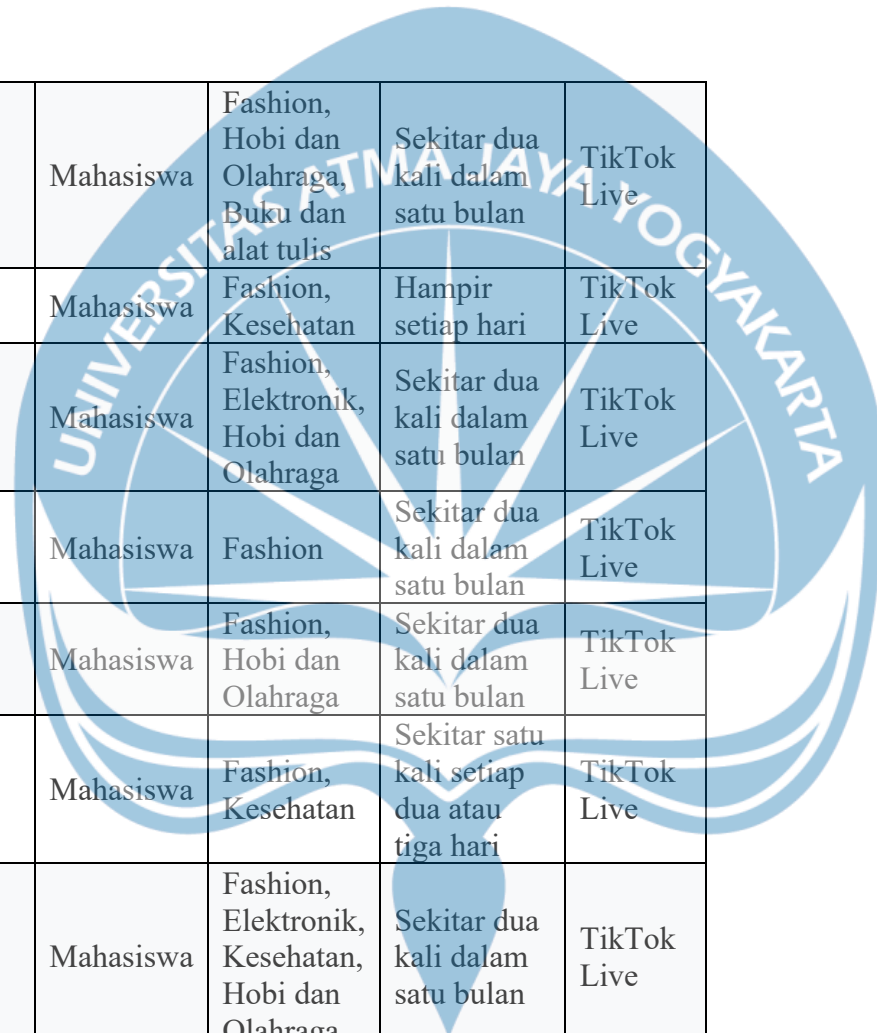
Pria	27	SMA	Mahasiswa	Elektronik	Sekitar dua kali dalam satu bulan	TikTok Live
Pria	23	S1	Manajer keuangan PT. Inti cipta karya mandiri	Otomotif	Hampir setiap hari	TikTok Live
Pria	21	SMA	Mahasiswa	Hobi dan Olahraga, Otomotif	Satu kali dalam satu bulan	Shopee Live
Pria	20	SMA	Mahasiswa	Elektronik, Hobi dan Olahraga	Hampir setiap hari	TikTok Live
Wanita	20	SMA	Mahasiswa	Hobi dan Olahraga, Buku dan alat tulis	Hampir setiap hari	Shopee Live
Wanita	19	SMA	Mahasiswa	Fashion	Sekitar satu kali setiap dua atau tiga hari	Shopee Live
Pria	20	S1	Mahasiswa	Hobi dan Olahraga	Satu kali dalam satu bulan	Shopee Live
Wanita	19	SMA	Mahasiswa	Fashion, Elektronik,	Satu kali dalam satu bulan	TikTok Live



				Hobi dan Olahraga		
Wanita	19	SMA	Mahasiswa	Fashion, Buku dan alat tulis	Sekitar satu kali setiap dua atau tiga hari	Shopee Live
Pria	20	SMA	Mahasiswa	Fashion, Hobi dan Olahraga	Hampir setiap hari	TikTok Live
Pria	20	SMA	Mahasiswa	Fashion, Otomotif	Satu kali dalam satu bulan	TikTok Live
Wanita	19	SMA	Mahasiswa	Fashion, Buku dan alat tulis	Satu kali dalam satu bulan	TikTok Live
Wanita	20	SMA	Mahasiswa	Fashion, Elektronik, Kesehatan, Hobi dan Olahraga, Buku dan alat tulis	Hampir setiap hari	Shopee Live
Wanita	20	SMA	Mahasiswa	Fashion	Sekitar satu kali setiap dua atau tiga hari	TikTok Live



Wanita	20	SMA	Mahasiswa	Fashion, Elektronik	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	19	SMA	Mahasiswa	Fashion	Satu kali dalam satu bulan	TikTok Live
Pria	20	S1	Mahasiswa	Hobi dan Olahraga	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Wanita	18	SMA	Mahasiswa	Fashion	Sekitar dua kali dalam satu bulan	TikTok Live
Pria	21	D3	Mahasiswa	Fashion	Satu kali dalam satu bulan	TikTok Live
Wanita	19	SMA	Mahasiswa	Fashion	Hampir setiap hari	TikTok Live
Wanita	20	SMA	Mahasiswa	Fashion, Hobi dan Olahraga, Buku dan alat tulis	Satu kali dalam satu bulan	TikTok Live
Pria	21	SMA	Mahasiswa	Fashion, Elektronik	Satu kali dalam satu bulan	Shopee Live



Wanita	19	S1	Mahasiswa	Fashion, Hobi dan Olahraga, Buku dan alat tulis	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	19	S1	Mahasiswa	Fashion, Kesehatan	Hampir setiap hari	TikTok Live
Pria	20	S1	Mahasiswa	Fashion, Elektronik, Hobi dan Olahraga	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	21	S1	Mahasiswa	Fashion	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	19	SMA	Mahasiswa	Fashion, Hobi dan Olahraga	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	20	SMA	Mahasiswa	Fashion, Kesehatan	Sekitar satu kali setiap dua atau tiga hari	TikTok Live
Wanita	20	SMA	Mahasiswa	Fashion, Elektronik, Kesehatan, Hobi dan Olahraga	Sekitar dua kali dalam satu bulan	TikTok Live



Wanita	19	SMA	Mahasiswa	Fashion	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	19	SMA	Mahasiswa	Fashion	Satu kali dalam satu bulan	TikTok Live
Wanita	20	SMA	Mahasiswa	Fashion, Buku dan alat tulis	Sekitar satu kali setiap dua atau tiga hari	Shopee Live
Wanita	20	SMA	Mahasiswa	Fashion, Hobi dan Olahraga, Buku dan alat tulis	Sekitar satu kali setiap dua atau tiga hari	Shopee Live
Pria	21	S1	Mahasiswa	Elektronik, Hobi dan Olahraga	Satu kali dalam satu bulan	Shopee Live
Wanita	20	SMA	Mahasiswa	Fashion, Kesehatan	Sekitar dua kali dalam satu bulan	TikTok Live
Wanita	19	S1	Mahasiswa	Fashion	Satu kali dalam satu bulan	TikTok Live
Wanita	20	S1	Mahasiswa	Fashion, Buku dan alat tulis	Sekitar dua kali dalam satu bulan	TikTok Live



Lampiran 3 Screen Shoot Hasil Smart PLS

Outer Loadings

Matrix											
	ATT	CE	IC	PE	PU	TRUST	UBI	VD			
ATT 1	0.882										
ATT2	0.912										
ATT3	0.657										
CE1		0.837									
CE2		0.927									
CE3		0.894									
IC1			0.910								
IC2			0.918								
IC3			0.922								
PE2				0.957							
PE3				0.958							
PU1					0.896						

PU	TRUST	UBI	VD ^
0.896			
0.941			
0.849			
	0.937		
	0.937		
		0.935	
		0.801	
		0.918	
			0.941
			0.896
			0.731

Construct Reliability and Validity

Matrix	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance
	Cronbach's Alpha	rho_A	Composite Rel...	Average Varian...
ATT	0.756	0.791	0.862	0.681
CE	0.866	0.901	0.917	0.786
IC	0.905	0.908	0.940	0.840
PE	0.910	0.910	0.957	0.917
PU	0.879	0.909	0.924	0.803
TRUST	0.862	0.862	0.935	0.879
UBI	0.862	0.883	0.916	0.786
VD_	0.830	0.888	0.897	0.746

Discriminant Validity

	ATT	CE	IC	PE	PU	TRUST	UBI
ATT							
CE	0.731						
IC	0.833	0.635					
PE	0.885	0.567	0.865				
PU	0.815	0.560	0.669	0.592			
TRUST	0.786	0.642	0.884	0.695	0.729		
UBI	0.833	0.625	0.615	0.658	0.518	0.589	
VD_	0.848	0.680	0.889	0.767	0.715	0.852	0.646

Discriminant Validity

Fornell-Larcker Criteria										R Square		
	ATT	CE	IC	PE	PU	TRUST	UBI	VD_		Matrix	R Square	R Square Adjusted
ATT	0.825											
CE	0.616	0.887										
IC	0.701	0.586	0.917									
PE	0.748	0.520	0.787	0.958								
PU	0.664	0.498	0.612	0.543	0.896							
TRUST	0.639	0.567	0.781	0.615	0.647	0.937						
UBI	0.674	0.539	0.551	0.584	0.450	0.514	0.886					
VD_	0.680	0.574	0.798	0.687	0.602	0.738	0.548	0.863				

f Square

Matrix	f Square	Copy to Clipboard: Excel Format R Format									
		ATT	CE	IC	PE	PU	TRUST	UBI	VD_		
ATT											
CE		0.082									
IC		0.000	0.524								
PE		0.230									
PU		0.126									
TRUST		0.004					0.721				
UBI											
VD_					0.895						

Path Coefficients

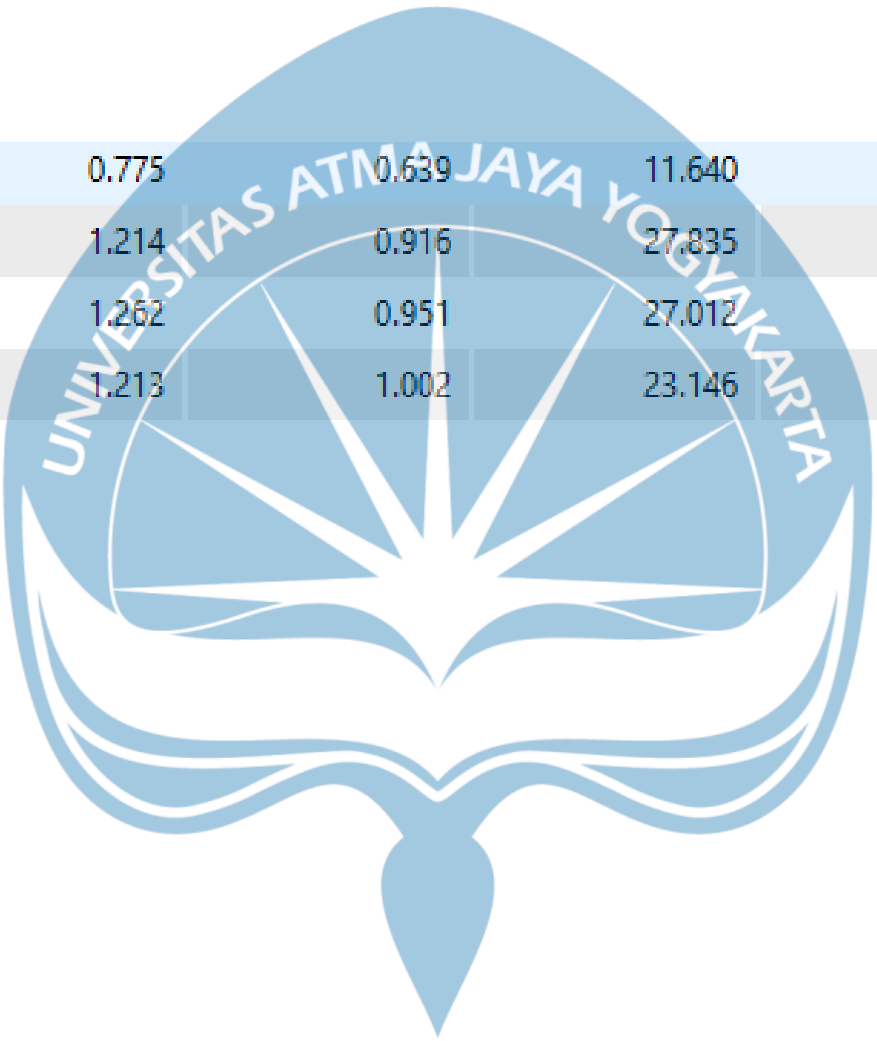
	Mean, STDEV, T-Values, P-Val...	Confidence Intervals	Confidence Intervals Bias Co...	Samples	
	Original Sampl...	Sample Mean (...)	Standard Devia...	T Statistics (O/...	P Values
ATT -> UBI	0.674	0.677	0.050	13.507	0.000
CE -> ATT	0.205	0.192	0.121	1.703	0.089
IC -> ATT	0.022	0.035	0.121	0.182	0.856
IC -> CE	0.586	0.592	0.064	9.138	0.000
PE -> ATT	0.440	0.444	0.095	4.643	0.000
PU -> ATT	0.272	0.274	0.082	3.329	0.001
TRUST -> ATT	0.059	0.056	0.093	0.634	0.526
TRUST -> PU	0.647	0.647	0.062	10.471	0.000
VD_ -> PE	0.687	0.690	0.043	15.907	0.000

Specific Indirect Effects

Mean, STDEV, T-Values, P-Val...	Confidence Intervals	Confidence Intervals Bias Co...	Samples		
	Original Sampl...	Sample Mean (...)	Standard Devia...	T Statistics (O/...	P Values
IC -> CE -> ATT	0.120	0.109	0.065	1.856	0.063
VD_ -> PE -> ATT	0.302	0.306	0.066	4.604	0.000
TRUST -> PU -...	0.176	0.177	0.055	3.214	0.001
CE -> ATT -> UBI	0.138	0.130	0.084	1.657	0.097
IC -> CE -> AT...	0.081	0.074	0.045	1.799	0.072
IC -> ATT -> UBI	0.015	0.024	0.082	0.181	0.856
PE -> ATT -> UBI	0.297	0.301	0.068	4.379	0.000
VD_ -> PE -> A...	0.204	0.207	0.047	4.324	0.000
PU -> ATT -> UBI	0.183	0.186	0.057	3.203	0.001
TRUST -> PU -...	0.119	0.120	0.039	3.055	0.002
TRUST -> ATT -...	0.040	0.037	0.063	0.630	0.529

MV Prediction Summary

PLS LM PLS Prediction Error (Descriptives) PLS Predictions (Descriptives)				
	RMSE	MAE	MAPE	Q ² _predict
ATT 1	1.017	0.731	21.399	0.408
ATT3	0.862	0.655	12.487	0.170
ATT2	1.030	0.771	19.571	0.442
CE3	1.111	0.795	24.355	0.383
CE2	1.161	0.890	24.844	0.273
CE1	1.318	1.044	28.775	0.085
PE3	0.985	0.758	16.767	0.399
PE2	0.905	0.702	16.959	0.452
PU2	0.790	0.606	12.596	0.364
PU3	0.827	0.638	11.897	0.183
PU1	0.775	0.639	11.640	0.390
UBI 3	1.214	0.916	27.835	0.281



PU1	0.775	0.639	11.640	0.390
UBI 3	1.214	0.916	27.835	0.281
UBI2	1.262	0.951	27.012	0.256
UBI1	1.213	1.002	23.146	0.174

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An empirical investigation of the impact of influencer live-streaming ads in e-commerce platforms on consumers' buying impulse

Influencer-endorsed impulse buying

1633

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Abstract

Purpose – E-commerce live streaming is a new influencer advertising method that allows influencers to interact directly with consumers on e-commerce platforms. Although evidence suggests that influencer live-streaming advertisements (ads) on social media can increase consumers' buying impulses, little research examined how this similar but new advertising method on e-commerce platforms may influence consumers' urge to buy impulsively. This study explores the role of influencer credibility, celebrity effect, perceived entertainment, trust and perceived usefulness on consumers' attitudes toward influencer ads and their urge to buy impulsively.

Design/methodology/approach – A questionnaire containing seven constructs was developed and distributed to participants using a convenient sample and snowball sampling approach. The constructs were measured based on validated measurement items from the literature and adjusted according to this study's focus. A total of 236 valid responses were obtained from the survey and used for data analysis. A partial least squares structural equation modelling approach was employed for parameter estimation and model testing.

Findings – The empirical results show that all constructs influenced consumers' urge to buy impulsively via attitude toward influencer ads. The proposed research model explains 61.7% of the variance in attitude toward influencer ads and 19.4% of the urge to buy impulsively.

Originality/value – This is an early study investigating the relationship between influencer advertising and impulse buying. The results provide valuable insights into improving the design of influencer ads and marketing strategies.

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Highlights

- (1) I-eB model tests the mechanism of influencer ads on consumers' buying impulse.
- (2) Consumers' attitude towards influencer ads affects their urge to buy impulsively.
- (3) Influencer credibility affects consumer attitude via celebrity effect as a mediator.
- (4) Trust affects consumer attitude via perceived usefulness as a mediator.
- (5) Entertaining ads help develop favorable consumer attitude.

Keywords Influencer Advertising, e-commerce live streaming, impulse buying, Influencer credibility, Celebrity effect, Perceived entertainment, Trust, Perceived usefulness
Paper type Research paper

1. Introduction

Influencer live streaming has emerged as a new advertising tactic for e-commerce platforms in China. It uses influencers, people with a large number of followers with perceived social influence (Zafar *et al.*, 2020), to sell products directly to consumers on e-commerce platforms. According to iResearch (2021), China's influencer live-streaming commerce surpassed 1.2 trillion RMB in 2020, with an annual growth rate of 197.0%. They expected that the scale would exceed 4.9 trillion RMB in 2023. Over 430 million Chinese people watch live streams, and over 37% of China's Internet shoppers make live-stream purchases (Greenwald, 2020). As a result, popular Chinese e-commerce platforms such as Taobao, Tmall and Jingdong are investing in influencer live streaming to boost sales (Jin and Chaudhry, 2020). Holding also established an influencer incubator program to support the booming e-commerce industry (Ruhnn Holding Ltd., 2021). Unlike traditional broadcasting advertisements (ads), such as ads on television and video-sharing platforms (e.g. YouTube), influencer live streaming adds authenticity, visualization and interactivity to online shopping (Hu and Chaudhry, 2020). It is more intuitive and provides a better view of product information via real-time interactions between influencers and viewers (Hilvert Bruce *et al.*, 2018). In addition, compared with social media ads, influencer live streaming on e-commerce platforms (hereinafter called "e-commerce live streaming") focuses more on selling than pure entertainment. Hence, e-commerce live streaming relies on influencers' charisma and presentation skills. In other words, the influencer is at the heart of this new advertising approach. Therefore, we speculate that a consumer's purchase decision is influenced by how influencers present the product and their personal charisma. Additionally, influencer live streaming differs from traditional influencer endorsements because it can create an impulsive atmosphere that entices to make impulse purchases (Cheng, 2020). Consumers with similar interests are gathered in a chat room during a live-streaming session. However, they often do not know what specific products an influencer promotes. During the advertising process, an influencer promotes products by demonstrating them and encouraging the audience to buy them. Audiences can instantly interact with influencers and other viewers using text messages (Hu *et al.*, 2017; Hu and Chaudhry, 2020). They can also be ordered immediately by clicking the small button next to the video. Thus, compared to traditional influencer ads, influencer live streaming is meant to increase impulsive rather than planned purchases.

However, according to Abdelrehim *et al.* (2020), Iyer *et al.* (2020) and Chan *et al.*'s (2017) systematic literature reviews on impulse buying and our literature review (see Table 1), few studies have examined whether and how e-commerce live streaming could stimulate impulse buying, which is the essential purpose of e-commerce platforms. Previous research on influencer advertising mainly focused on conventional social media, such as Instagram, Facebook and WeChat, and how marketers can use social media to boost consumers' purchase intentions or attitudes toward brands or products (e.g. Evans *et al.*, 2017; Lamberton and Stephen, 2016; Jin *et al.*, 2019; Stubb and Colliander, 2019; Kim and Kim, 2021). Although some studies have attempted to investigate how influencer ads affect consumers' urge to buy

				Influencer-endorsed impulse buying
Authors	Ad nature	Advertising platform	Dependent variable(s)	
Alam <i>et al.</i> (2022)	Live streaming	Social media (not specified)	Online purchase intention	1635
Dinh and Lee (2022)	Social media posts (texts and pictures)	Social media (not specified)	Buying intention	
Faali-Salehi <i>et al.</i> (2022)	Pre-recorded videos	Social media (YouTube)	Trustworthiness, brand identification, communal-brand connection, purchase intention, willingness to pay a premium price, parasocial interaction	
Lee and Lee (2022)	Pre-recorded videos	Social media (YouTube)	Purchase intention	
Mawada <i>et al.</i> (2022)	Pre-recorded videos	Social media (YouTube)	Purchase intention	
Belanche <i>et al.</i> (2021)	Social media posts (pictures and pre-recorded videos)	Social media (Instagram)	Intention to purchase, intention to recommend	
Cross and Bartels (2021)	Pre-recorded videos	Social media (not specified)	Buying behavior	
Lee and Chen (2021)	Live streaming	Social media (not specified)	Urge to buy impulsively	
Silva and Costa (2021)	Social media posts (pictures and pre-recorded videos)	Social media (Instagram)	Purchase intention	
Thomas (2021)	Social media posts (texts and pictures)	Social media (not specified)	Intention to purchase recommended brand	
Xu <i>et al.</i> (2022)	Live streaming	E-commerce platforms (TikTok, Global)	Cross-border purchase intention	
Alghamdi and Boguei (2020)	Social media posts (pictures and pre-recorded videos)	Social media (Instagram and Snapchat)	Intention to purchase	
Folkord <i>et al.</i> (2020)	Social media posts (pictures and pre-recorded videos)	Social media (Instagram)	Purchase intention	
Jin and Ryu (2020)	Social media posts (pictures)	Social media (Instagram)	Buying intention	
Park and Kim (2020)	Live streaming	E-commerce (Taobao, YouTube)	Intention to buy	
Sekholiwasa and Kadi (2020)	Social media posts (pictures and pre-recorded videos)	Social media (Instagram and YouTube)	Purchase intention	
Zafar <i>et al.</i> (2020)	Social media posts (texts and pictures)	Social media (Facebook)	Impulse buying	
Alotaibi <i>et al.</i> (2019)	Social media posts (pictures and pre-recorded videos)	Social media (Instagram)	Purchase intention	
Ki and Kim (2019)	Social media posts (pictures and pre-recorded videos)	Social media (Instagram)	SWOCM, Purchase intention	
Source(s): Web of Science				Table 1. A literature overview of empirical studies relevant to influencer advertising.

impulsively (e.g. [Chen et al., 2016](#); [Chen et al., 2019](#); [Zafar et al., 2020](#)), they have mainly focused on ads in text, pictures, static audio and static video formats on social media. [Hou et al. \(2020\)](#) pointed out that live streaming differs from conventional social media because it

involves video content, real-time interaction and consumption. Cai and Wohn (2019) further illustrated that live streaming is a synchronous medium that involves simultaneity and authenticity. By contrast, social media is asynchronous, as its communication is only one-way. This difference may pose different stimuli to the consumers. As a result, despite the increasing deployment of influencer e-commerce live streaming, scientific knowledge on how they can contribute to consumers' urge to buy impulsively is limited. Until this question is answered, it is unclear how influencers and their ads can do better to help their endorsed brand increase sales, that is, increase consumers' urge to buy impulsively. To this end, this study aims to explore the mechanism by which consumers' buying impulses are stimulated by influencer live streaming ads on e-commerce platforms. A structural model, namely, the Influencer-endorsed Impulse Buying (IeIB) model, was built to explain the mechanism. This study distinguishes itself from previous literature by focusing on e-commerce live streaming and impulse buying. It should provide marketers, influencers and e-commerce platforms with a more comprehensive understanding of influencer live streaming ads on consumers' impulse buying behavior.

This study addresses the following research questions in the context of e-commerce live streaming.

Whether and how influencer live streaming ads will affect consumers' urge to buy impulsively on e-commerce platforms?

The remainder of this paper is structured as follows. Section 2 provides a literature review, and Section 3 explains the theoretical development and specifications of the proposed research model. Section 4 illustrates the study's methodology, while Section 5 elucidates the data analysis and results. Section 6 discusses the study's findings. Finally, Section 7 concludes the study and presents the practical and theoretical implications and limitations.

2. Literature review

2.1. Influencer live streaming

The increase in Internet access has made ads in virtual environments common (Frade et al., 2021). Influencer advertising is a native advertising strategy that uses electronic word-of-mouth (Evans et al., 2017). Influencers promote advertising activities by sharing brand messages and spreading related information on the internet. Influencers can help companies increase brand awareness and consumer engagement (Kim and Kim, 2021). In comparison to conventional celebrities who achieved public recognition through their professional abilities, such as singing ability, influencers (also known as micro-celebrities) achieved renown by effectively branding themselves as experts in a particular area, such as beauty, fitness, food and fashion (Kiamus et al., 2017; Abrams et al., 2011). Traditional studies on influencer advertising usually focus on the impact of celebrities (e.g. Pradhan et al., 2016; Jin and Khun, 2014) and social media influencers (e.g. Lou and Yuan, 2019; Jin et al., 2019; Evans et al., 2017; Lee and Watkins, 2016; Van Reijmersdal et al., 2020; Kim and Kim, 2021) on consumers' attitudes toward a brand and the purchase of a product. They discovered that these influencers could promote advertising effectiveness.

Influencer live streaming is a new advertising method in which influencers connect with customers and sell things online via live streaming. It is growing in popularity and importance in the online influencer economy (Lee and Theokary, 2021). Unlike conventional static ads such as texts, still images and prerecorded videos, influencer live streaming enables consumers to connect directly with the influencer, observe products from diverse angles and ask questions in real-time (Sun et al., 2019). Geng et al. (2020) pointed out that interactions between online influencers and consumers could increase sales through promotions on live-streaming platforms. Ki et al. (2020) and Jin et al. (2019) argued that customers might become reliant on online influencers for purchasing decisions because of this interaction.

Theoretically, influencer live streaming stimulates consumers' impulse buying, similar to television (TV) shopping; that is, television celebrities introduce the products' benefits to persuade the audience to place an order right away (Cheng, 2020). In TV shopping, consumers have no idea about a product before watching television promotions. However, they may be persuaded to place an order after learning more about a product. Park and Lennon (2006) demonstrated that TV shopping programs (ads) could induce impulse buying tendencies in consumers. They pointed out that celebrities use a variety of conversational techniques to entice and persuade consumers. Consumers may develop feelings of intimacy or friendship with celebrities, leading to impulse purchase behavior (Park and Lennon, 2006). However, in contrast to conventional TV shopping channels, live streaming enables real-time dynamic interactions that arouse consumers' desire to participate. This type of interaction is a benefit that TV shopping cannot produce. Jiang and Cai (2021) posited that real-time dynamic interactions could arouse consumers' impulse buying behavior.

However, previous research seldom addresses the effects of influencer live streaming on impulse buying, especially in the context of e-commerce live streaming. In contrast to traditional ads, where consumers have time to evaluate, consider and purchase products based on their textual and image descriptions of the products (Desrochers *et al.*, 2019; Zhang *et al.*, 2018), e-commerce live streaming incorporates real-time social interactions between influencers and various consumers with limited time offers. In e-commerce live streaming, influencers must convince their audience to press the purchase button within a limited time. Consequently, e-commerce live streaming relies more on consumers' impulse buying than their planned buying intention.

2.2 Online impulse buying

Impulse buying refers to unexpected and compelling complex buying behavior that differs from planned purchases. If a consumer spends plenty of time exploring a product before buying it, the buying behavior is a planned purchase (Beatty and Ferrell, 1998). Prior research on impulse buying focused mainly on identifying the factors influencing impulse buying. While researchers generally agree that the product itself could operate as an activating stimulus for impulse buying (Sharma *et al.*, 2010), they also viewed other in-store stimuli (e.g. store layout, atmospherics and point-of-purchase advertising) as significant stimuli. These stimuli ignite an intense, instantaneous and persistent desire to buy something, making consumers feel temporarily out of control of their actions (Venkeman *et al.*, 2017). This desire to purchase is likely to obstruct critical deliberation and reduce consumers' awareness of the repercussions of their decisions (Venkeman *et al.*, 2017). Unlike offline shopping, consumers might have more opportunities to experience impulse buying online (Wu *et al.*, 2020). Consumers who shop online are freed from the constraints they might face in physical stores, which enhances the possibility of impulse purchase behavior (Chan *et al.*, 2017). Social media is a viable strategy for facilitating marketing efforts that can play a vital role in influencing consumers' purchasing decisions, such as impulse buying (Alalwan *et al.*, 2017; Kapoor *et al.*, 2018). Abdelsalam *et al.* (2020) and Chan *et al.* (2017) conducted systematic literature reviews on online impulse buying. They identified several triggers of impulse buying, including social-related factors (e.g. electronic word of mouth), website-related factors (e.g. visual appeal of websites), consumer characteristics (e.g. openness and neuroticism) and marketing-related factors (e.g. product availability, scarcity, vicarious expression and aesthetic appeal).

Because of the increasing popularity of influencer live streaming, recent studies have started focusing on this new advertising method, researching how and to what extent various factors in live streaming would affect consumers' impulse buying behavior. However, according to our literature search (see Table 1) and recent systematic literature reviews on impulse buying (Abdelsalam *et al.*, 2020; Iyer *et al.*, 2020; Chan *et al.*, 2017), little attention has been paid to the e-commerce context compared with the increasing number of studies on social media commerce

(s-commerce) live streaming. Although e-commerce and s-commerce are undergoing new development in delivering similar live-streaming functions, there are significant variations between e-commerce and s-commerce regarding market priorities, customer connections and system engagement (Huang and Benyoucef, 2013). E-commerce live streaming (our research focus) usually occurs on e-commerce or shopping platforms integrated with live streaming features, such as Taobao Live, Jingdong Live and Amazon Live. This type of platform focuses primarily on selling products. Brands and influencers use live streaming to engage consumers.

In contrast, s-commerce live streaming usually takes place on social media platforms initially designed for live streams but are now integrated with commercial activities, such as TikTok, Kuashou, Twitch and Facebook. This type of platform is not primarily aimed at selling products but for social networking and entertainment. However, influencers can implant links in streaming videos on shopping sites. Although these two types of live-streaming commerce look similar, the reasons for consumers heading to these platforms differ (Han and Kim, 2016). This variation in objectives may lead to different impulse buying behaviors on these two platforms. Consumers visit e-commerce platforms primarily to buy something. They often have something to purchase but have not decided on a specific product, brand, size, or price. During the live streaming meet-up on e-commerce platforms, influencers stimulate consumers' buying impulses by demonstrating and explaining the products from various perspectives based on their expertise and recommending that consumers purchase a specific product immediately with limited-time offers. By contrast, consumers visit social media platforms mainly because they want to have fun, relax, or meet friends (Loiacono and McCoy, 2018). They may not have to spend money on these platforms. However, their favorite influencers may still recommend products when they enter the influencers' channels. Although consumers are not looking for products initially, they may be persuaded to buy them because of a sudden emotional desire after watching live streams. In addition, ads may remind consumers of the products because they are out of stock at home. Consequently, because of the differences in needs and motivations for visiting e-commerce and social media platforms, the mechanism and magnitude of the effect of influencer ads on consumers' impulse buying could differ in the context of e-commerce and s-commerce. As e-commerce is also the future of the retail industry, it is worthwhile to investigate how e-commerce live streaming affects consumers' propensity to make impulsive purchases.

Given the above literature review, the primary research gaps were identified:

- (1) Compared to s-commerce live streaming, few studies have investigated influencer live-streaming ads in the context of e-commerce platforms.
- (2) Compared to planned purchase intention, little research has studied the mechanism of influencer live-streaming ads on consumers' impulse buying.

Based on these research gaps, this study tried to build a research model, namely the I-eIB model, to explain how consumers' buying impulses are affected by influencer live-streaming ads on e-commerce platforms.

3. Model development

The constructs used for the I-eIB model were derived from a qualitative study conducted by the same first author of the present study on 25 young adults (16 male and 9 female participants) regarding their views on e-commerce live streaming. Open-ended questions such as "What factors in the process of viewing e-commerce live streaming ads will generate the idea of impulse buying?" and "Do you think influencers in the e-commerce live streaming ads increase your intention to buy impulsively? Please explain why" were asked in the semi-structured interviews. Similar to Kwok *et al.* (2021) and Kwok *et al.* (2022), an inductive

content analysis method was used to inspect the interview data and generate themes and subthemes (i.e. underlying factors). The analysis began by transcribing the audio recordings of the interviews into textual transcripts, which the researchers reviewed to ensure their accuracy and completeness. The two researchers then repeated their readings until they understood the content and context of the conversation. During the comprehension phase, they understood the meaning of the conversation, recognized critical statements, created labels (or coding criteria) for the conversations and grouped similar ideas into themes and sub-themes. To ensure the reliability of the analysis, two researchers independently completed the comprehension procedure. After that, they met with a third researcher to compare and contrast the coding schemes, resolve any differences and finalize the themes and subthemes. Researchers counted the frequencies of the themes and subthemes to determine whether or not they were prevalent ("Yes" and "No" were employed to indicate the existence or absence of each subtheme). The most frequently mentioned facilitators for watching e-commerce live streaming were considered core components of the proposed research model.

3.1 Urge to buy impulsively

The urge to buy impulsively refers to a sudden and spontaneous urge to buy something (Parboteeah *et al.*, 2009; Zhang *et al.*, 2018). This was the dependent variable in this study's model. This study uses and measures consumers' urge to buy impulsively instead of their actual impulsive buying behavior because measuring consumers' impulsive behavior is practically difficult and problematic (Chen *et al.*, 2016). This construct (urge to buy impulsively) is regarded as an appropriate, effective and accurate proxy for impulse buying (Liu *et al.*, 2014). It has been widely used in the well-recognized literature (e.g. Chen *et al.*, 2016; Liu *et al.*, 2013; Zafar *et al.*, 2020).

3.2 Attitude toward influencer ads

Consumer attitude is a commonly used construct in marketing research to measure advertising effectiveness (e.g. Pfeiffer *et al.*, 2020; Evans *et al.*, 2017; Tran, 2017; Schouten *et al.*, 2020). Referring to Lutz (1989), this study defines construct attitude toward influencer ads as consumers' tendency to respond favorably or unfavorably to influencer ads. It was included in this study's model because the theory of reasoned action asserts that a person's behavior is determined by their motivation to engage in the behavior, which is, in turn, influenced by their attitude. Numerous studies have examined the link between consumer attitudes and buying behavior. For example, Istiao and Chen (2018) demonstrated that customers' desire to purchase a smartwatch is influenced by their positive attitude and perception of its value. Troadi and Bouyrougui (2020) found that customer attitudes are antecedents of green purchasing behavior. This study hypothesized that the attitude toward influencer ads would affect the urge to buy impulsively, a critical indicator of impulse buying behavior because consumer behavior is a psychological process (Liu and Fang, 2016). A consumer's attitude is a trained proclivity that reacts consistently (positively or negatively) to the offered products. Consumer attitude is linked to consumer intention and can thus predict consumer behavior (Liang *et al.*, 2021). Hence, consumers are more likely to feel buying impulses if they have a favorable attitude toward influencer ads. Thus, the following hypothesis is proposed:

- H1. Attitude toward influencer ads has a significant positive effect on the urge to buy impulsively.

3.3 Celebrity effect

Celebrity is known for its popularity (Bourstin, 1992). In this study, the celebrity effect refers to the ability of influencers to influence others. This is a collective term for the effect of a famous person's presence on drawing attention, reinforcing messages and expanding

influence. Moreover, this is a psychological phenomenon of individuals emulating celebrities. This construct was included in the study because previous research and practices have demonstrated that the employment of famous people in advertising could attract customers' attention and strengthen a brand or message. For example, Kim *et al.* (2018) discovered that celebrity expertise is closely associated with brand equity. Similarly, Wang *et al.* (2017) showed that celebrity attractiveness, trustworthiness and expertise could influence purchase intention via favorable brand attitude and credibility.

Influencers enjoy the acknowledgment of their followers, sizable popularity and remarkable reputation in their specialized sectors. Their participation in advertising activities, particularly the direct endorsement of products, could be more attractive, infectious, persuasive and credible than other forms of advertising, thereby helping to attract consumers' attention, interest and desire to purchase (Qu *et al.*, 2021; Janssen *et al.*, 2022). Therefore, firms are now competing for market share via influencer advertising (Kim and Kim, 2021), using their celebrity effect. Nevertheless, to the best of our knowledge, previous research has not examined the celebrity effect as an independent construct. Considering that the influencer is a type of celebrity (known as a micro-celebrity) according to Boorstin's (1992) definition in this digital era, this study introduces this construct to measure the overall impact on customer purchasing decisions exerted by an influencer due to their attributes or performance in a marketing campaign.

It should be emphasized that the celebrity effect differs from the celebrity endorsement effect, which has been widely discussed in prior research. The celebrity endorsement effect focuses on how celebrity endorsement triggers endorsement-related cognitive responses in consumers (Bergkvist *et al.*, 2016). In contrast, the celebrity effect proposed in this study centered on influencers' influence, that is, their ability to amplify the message when they appear. According to Kelman's (1961) theory of opinion change, an individual adopts an attitude or behavior from another person when that attitude or behavior is linked to a self-defining connection with that person. Hence, the more outstanding the perceived social image of an influencer is, the more appealing it will be to the audience (Lamirault and Kip, 2014). Moreover, it is believed that people's perceptions of an influencer would apply to endorsed products or services when the influencer is the source of information (Visentin *et al.*, 2019). Therefore, this study proposes the following hypothesis:

H2: Celebrity effect has a significant positive effect on the attitude toward influencer ads.

3.4 Influencer credibility

Source (or information) credibility plays a vital role in interactive marketing. The source of a message has long been known to impact its persuasiveness and the recipients' subsequent behaviors toward the message (Todd and Melancon, 2018). Source credibility is defined as the extent to which a consumer believes that an identified source claims (Hussain *et al.*, 2017). In this vein, a credible source is a communication medium that delivers accurate and relatively bias-free information (Visentin *et al.*, 2019). Customers usually encounter promotional messages and recommendations when seeking online product and service information. Source credibility is one aspect that readers can use to navigate these messages and recommendations (Dou *et al.*, 2012). If they perceive the messages as credible, they are more likely to incorporate them into their decision-making processes (Aladwaini and Dwivedi, 2018). Compared to conventional face-to-face word-of-mouth communication, which often occurs between persons with strong social links, online word-of-mouth marketing typically entails indirect and public contact between people with weak social ties (Bragulova *et al.*, 2020). Kang and Namkung (2019) mentioned that credibility is vital for decision-making in an ambiguous online environment, as it affects how much people believe in information. Existing research has also shown that source credibility is closely related to consumers' attitudes toward online ads (Teng *et al.*, 2014; Pfeiffer *et al.*, 2019).

As the influencer is the core source of an e-commerce live-streaming ad, it is crucial to understand the role of influencer credibility in consumers' attitudes toward influencer ads. With reference to MacKenzie and Lutz (1989), influencer credibility in this study refers to the degree to which a consumer perceives the influencer in ads to be truthful and honest. Martins *et al.* (2018) showed that the credibility of a person (journalist or scientist) influences one's belief about pieces of information. Choi and Rifon (2002) indicated that consumers' perceived credibility of the advertisers would affect their perceived credibility of the ads, which positively impacts consumers' favorable attitudes toward the ads. Kim and Choi (2012) reported similar results. Hence, the following hypothesis is proposed:

H3. Influencer credibility has a significant positive effect on the attitude toward influencer ads.

Additionally, according to Martins *et al.* (2018), a person's credibility affects their amount of influence. Yuan and Lou (2020) examined the parasocial links between social media influencers and their followers. They discovered a positive correlation between credibility-related criteria and the strength of parasocial interaction between influencers and followers. Kouzes and Posner (1990) asserted that followers expect their leaders to be credible. Therefore, reputable celebrities are hesitant to advocate unreliable products despite financial incentives because doing so might negatively impact their reputation and influence (Lili *et al.*, 2022). As a result, it was predicted that influencers' credibility would positively impact their ability to influence others. Hence, we propose the following hypothesis:

H4. Influencer credibility has a significant positive effect on the celebrity effect.

3.5 Perceived entertainment

Entertainment has been identified as a critical driver of streaming service usage (Syblom and Hamari, 2017; Hübert-Beuze *et al.*, 2018). Lou and Yuan (2019) claimed that entertainment is a critical feature of influencer ads. They pointed out that entertainment captures positive cognitive and affective advertising values. Hence, this study also viewed entertainment as a vital factor influencing consumers' attitudes toward influencer ads. Therefore, perceived entertainment is included in the research model.

Multiple studies have shown that the entertainment value of digital advertising can positively influence consumers' attitudes toward ads (Bhatia, 2020; Yang *et al.*, 2017). According to the advertising value model (Ducoté, 1995, 1996), perceived entertainment in this study refers to the extent to which a customer views influencer ads as pleasant and enjoyable. Ducoté (1996) considered entertainment an essential positive source of advertising value for consumers. This could enhance the communication experience between sellers and consumers. Such an experience could build a stronger emotional connection with consumers by evoking their affective feelings and moods (Bati *et al.*, 2020). Consequently, it was believed that consumers would be more likely to form a positive attitude toward an influencer ad if they felt the ad was entertaining. Thus, we propose the following hypothesis:

H5. Perceived entertainment has a significant positive effect on the attitude toward influencer ads.

3.6 Perceived usefulness

Perceived usefulness was first described by Davis (1989). Accordingly, perceived usefulness is the extent to which an individual believes that employing a specific system will enhance their work performance. Davis (1989) and Davis *et al.* (1989) used the theory of reasoned action as a theoretical foundation for establishing relationships between attitudinal beliefs (perceived usefulness and perceived ease of use), attitude and the adoption of a given

technology. Perceived usefulness in this study refers to the degree to which a consumer perceives the information offered by influencer ads to be helpful, such that they can make an informed judgment on buying behavior. Perceived usefulness has long been an essential metric for measuring advertising effectiveness (Bleier and Eisenbeiss, 2015; Shavitt *et al.*, 1998). Hence, this study also included the perceived usefulness of the proposed model. Khan *et al.* (2017) highlighted that when customers had to make a purchase decision, they often depended on the ad material to undertake a cost vs. benefit analysis. Kim *et al.* (2007) added that when considering the purchase of a product, buyers often undergo a cognitive and emotional evaluation process. Lee (2009) also noticed that consumers' desire to rely on a thing directly correlates with their perceived advantage and usefulness.

Moreover, while explaining the importance of personalized online advertising, Bleier and Eisenbeiss (2015) shared that consumers might be more eager to explore advertised content if they find it useful. Thus, this study expected that consumers would have a favorable attitude toward influencer ads if they perceived them as useful. Hence, we propose the following hypothesis:

H6: Perceived usefulness has a significant positive effect on the attitude toward influencer ads.

3.7 Trust

Advertising has always been morally and practically concerned with trust. This study defines trust as a psychological state comprising the intention to accept the vulnerability of influencer ads based on favorable assumptions of influencers' intentions or conduct (Rousseau *et al.*, 1998). Trust is of utmost importance in online shopping, as it can reduce the perceived risk of being a victim of opportunistic behavior (Haps, 2015). Notably, trust cues gained via face-to-face encounters are diminished in online shopping (Zhang and Mo, 2008), increasing the perceived risk of shopping. Hence, consumer-perceived trust is a crucial factor that may affect consumers' online purchasing decisions (Jadh *et al.*, 2022). As a result, this study included trust in the proposed model. The influence of trust on attitudes toward ads has been widely reported in the literature. Tran (2017) claimed that trust might capture favorable views of ads. Ead *et al.* (2020) demonstrated a significant positive impact of Internet users' trust in social media sites on their attitudes toward social media ads. In addition, Yang *et al.* (2017) exhibited that consumers develop a favorable attitude toward ads if consumers believe that such ads are informative, enjoyable and trustworthy. Consequently, it was believed that if a customer trusts an influencer ad, they will have a favorable attitude toward the ad. Thus, the following hypothesis is proposed:

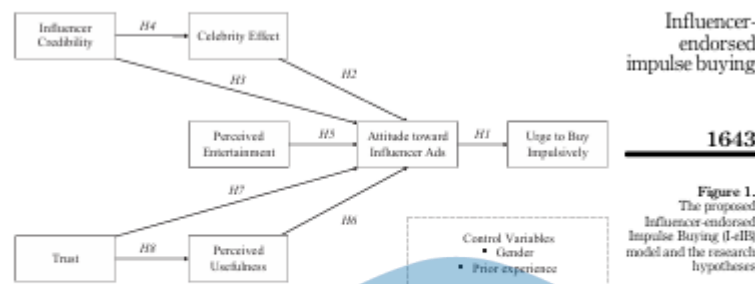
H7: Trust has a significant positive effect on attitude toward influencer ads.

In addition, several prior information systems studies have established that consumers' trust could increase the perceived usefulness of e-commerce applications (e.g. Qin and Kong, 2015; Asward *et al.*, 2020). Accordingly, previous studies observed that the more trustworthy the applications are, the more benefits customers see when using them. Similarly, the greater the perceived trust of influencer ads, the greater the perceived value for customers who watch the ads. In other words, if customers do not continue to trust influencer ads and become skeptical of them, they would be less likely to use that ad as a source of prescription shopping information and more likely to rely on other trustworthy sources. Therefore, we propose the following hypothesis:

H8: Trust has a significant positive effect on perceived usefulness.

3.8 The I-eB model

The I-eB model was developed based on the construct specifications (see Figure 1).



Influencer-endorsed impulse buying

1643

Figure 1.
The proposed Influencer-endorsed Impulse Buying (I-eIB) model and the research hypotheses

4. Methodology

4.1 Measurement instrument

The measurement instrument used in this study was a well-designed questionnaire comprising three major sections. The first section briefly introduces the study's background and objectives. Specifically, a detailed introduction about e-commerce live streaming was presented to the participants so that those unfamiliar with this advertising method could have a general idea of it, and those with prior experience with e-commerce live streaming shopping could have a refreshed impression of this advertising method. The second section was developed to collect sociodemographic information about the participants, including their age, gender and relevant information about their personal experiences with influencer ads. The third section was developed to understand the participants' opinions and ideas about influencer-endorsed impulse buying. The seven constructs specified in the research model were included in the questionnaire and measured based on literature-validated scales (see Table 2). The measurement items were adjusted according to the focus of this study through expert review. Seven-point Likert scales ranging from 1 (very strongly disagree) to 7 (very strongly agree) were used to rate the measurement items.

Survey respondents may provide inaccurate results due to response bias, such as common methods, social desirability, extreme responses and non-response bias. Both procedural and statistical controls were employed to avoid such biases, following Podsakoff *et al.* (2003). Concerning procedural control, the following remedies were performed to ensure that the survey content fit the audience's knowledge level. First, appropriate language was used so that respondents could easily understand it. Second, background information was provided when necessary during the survey completion. To achieve this, two researchers independently reviewed the measurement instruments. They then worked together with a third researcher to reconcile discrepancies and reach a consensus. A pilot test was conducted on five local university students. Cognitive interviewing was used to ensure that the measurement items were comprehended as intended by the target audience and to reduce the sources of response errors. The test revealed that all questions were correctly understood, and it took an average of seven minutes to complete the survey, which was considered appropriate to avoid response bias. The detailed statistical control method is introduced in the following data analysis and results section.

4.2 Data collection

An online survey (via the Star Customer Questionnaire platform) with a self-administered questionnaire consisting of three sections was created to collect empirical data. The participants

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1644

Construct and Supporting Literature	Definition	Item description ^a
Perceived usefulness (PU) (Besser and Eisenbeiss, 2015; Davis, 1989; Stavari et al., 1998)	The degree to which a consumer perceives the information offered by the influencer ads to be helpful, such that they can make an informed judgment on buying behavior	PU1: I think viewing influencer ads is a good source of product information PU2: I think influencer ads provide relevant information about the product PU3: I think influencer ads provide timely and sufficient information about the product UEH1: As I watched the influencer ads, I had the urge to purchase items other than or in addition to my specific shopping goal UEH2: Watching influencer ads, I wanted to buy items that did not pertain to my specific shopping goal UEH3: Because of the influencer ads, I was inclined to purchase items outside my specific shopping goal spontaneously
Urge to buy impulsively (UBI) (Purbotohah et al., 2009)	Consumers experience a sudden and spontaneous urge to buy something	PE1: It is enjoyable when I am viewing influencer ads PE2: The process of viewing influencer ads is pleasing PE3: I find it fun to view influencer ads
Perceived entertainment (PE) (Dacosta, 1995, 1996)	The degree to which a consumer perceives the influencer ads to be pleasant and enjoyable on top of the perceived value of the products or services	TR1: When I plan to buy a new product or buy a product for the first time, I will rely on influencer ads as a source of product information TR2: We can depend on getting the truth in most influencer ads TR3: I think influencer ads are a reliable source of information to get to know the quality and properties of the product
Trust (TR) (Morgan and Hunt, 1994; Liu and Yuan, 2019; Morgan et al., 1997; Davis, 1989)	The degree to which a consumer accepts the veridicality of the influencer ads is based on favorable assumptions of the intents or conduct of the influencers	ATT1: I like to view influencer ads ATT2: I think most influencer ads are engaging ATT3: In my opinion, influencer ads are an excellent way to promote products
Attitude toward influencer ads (ATT) (Taylor and Todd, 1996; Ajzen, 1991; Lutz, 1985)	Consumers' tendency to respond favorably or unfavorably to influencer ads	CEL1: I will pay more attention to ads featured by the influencers I like or am familiar with CEL2: I would be more interested in viewing the ads if influencers are involved CEL3: I think influencer ads are more convincing
Celebrity effect (CE) (Ryu et al., 2021; Janaseni et al., 2022; Boorstin, 1992)	The degree of perceived influencers' ability to influence others	

Table 2.
Constructs and
measurement items
in the questionnaire

(continued)

Construct and Supporting literature	Definition	Item description ^a	Influencer-endorsed impulse buying
Influencer credibility (IC) (MacKenzie and Lutz, 1989; Choi and Rifon, 2002)	The degree to which a consumer perceives the influencer in the ads to be truthful and honest	IC1: I think influencers are generally trustworthy IC2: I think influencers, in most cases, know the product being endorsed well or have experience using the product IC3: In general, I think influencers are attractive to me	1645

Note(s): ^aThe measurement items in the questionnaire were in Chinese. They were translated and cross-checked by two bilinguals to ensure translation quality

Table 2.

in this study were mainly young adults who were generally exposed to the internet and had used e-commerce or online shopping in the past. The participants were recruited using a convenience sample and snowball sampling approach by distributing the online survey link in WeChat groups, inviting group members to join and spreading the messages to other groups. The snowball sampling method was used because it can help locate hidden populations (Voicu, 2011), which could help to soften the non-response bias. Zhang *et al.* (2018) used a similar approach to obtain a sample to study consumers' impulse buying behavior.

Before the survey, the participants were asked to recall their favorite influencers in their preferred fields, including but not limited to those in beauty, fitness, food and fashion. A detailed introduction to e-commerce live streaming was presented at the beginning of the survey to give respondents a general idea and impression of this advertising method. Recall bias that reflects a respondent's inaccurate recollection of particular events may arise during self-reported questionnaire administration. To minimize its impact, one should shorten the length of the recall period because a more extended period of recall can result in greater information loss (Clarke *et al.*, 2006). Hence, the participants were instructed to instantly visit or revisit e-commerce live streaming videos before the commencement of the survey if they found it difficult to recall any. This method may provide respondents with memory aids to enhance recall (Khare and Vedel, 2019), which helps capture respondents' true feelings about purchase impulsivity.

This study asked participants to respond to the survey based on their favorite influencers and fields instead of particular influencer ads because each individual would have a different level of interest in different fields and presentation methods. For example, asking someone fond of a video game streamer to comment on or rate a beauty influencer is difficult. This study primarily focused on young adults' opinions because they are the main stakeholders and practitioners of online purchasing. The participants' demographic information and measurements of each construct were collected for data analysis.

4.3 Sample

A total of 328 participants voluntarily participated in the online survey from October to December 2019. Ninety-two participants were excluded based on the following screening criteria: (1) completed the questionnaire in less than 15 min and (2) returned invariable and extreme responses. After screening, this study yielded 236 valid responses (effective rate: 72.6%), which was considered sufficient for the partial least squares structural equation modeling (PLS-SEM) analysis (Asyabucci, 2010). Among the valid responses, 140 (59.3%) participants reported that they had followed influencers on major online platforms or Internet communities. Nearly half of the participants (47.5%) reported that they had been viewing influencer ads daily or once every two or three days. Participants with and without prior experience viewing influencer ads on any online

INTR
33,4

1646

platform were included in the data analysis because this study sought to examine a more general rationale that explains young adults' influencer-endorsed impulse buying. Prior experience and gender were set as control variables in the model examination. Age was not posited as a control variable because this study primarily focused on young adults. Because the recall technique and the instant visit and revisit approach were employed during the data collection, it is reasonable to expect that the data collected from the study sample are valid and representative of the investigation of our research question, that is, to explore consumers' buying impulse under the effect of influencer live streaming ads in e-commerce platforms. The demographic characteristics of the study participants are presented in Table 3.

5. Data analysis and results

Descriptive statistics of the measures, including the mean, standard deviation (SD), 95% confidence interval (CI), skewness and kurtosis, were evaluated to determine the nature of the data using IBM SPSS Statistics 24. A PLS-SEM approach was employed to test the research model using SmartPLS version 3.

Table 4 presents the descriptive statistics for the constructs. It was noted that participants averagely rated the urge to buy impulsively at 3.33 (SD = 1.12) on a seven-point Likert scale, implying a general dissenting tendency of impulse buying behavior. The average value of the other constructs ranged from 3.49 to 4.17 (also on a seven-point Likert scale).

Item	n (%)
<i>Gender</i>	
Male	115 (49.2)
Female	121 (50.8)
<i>Age group</i>	
Under 18	3 (1.3)
18–25	229 (97.0)
26–30	4 (1.7)
<i>The frequency of seeing influencer ads</i>	
Never	56 (23.7)
Once a month	35 (14.4)
Semi-monthly	33 (14.0)
Once every two or three days	67 (28.4)
Every day	45 (19.1)
<i>Reported types of influencer ads¹</i>	
Tourism	54 (23.0)
Games	92 (51.1)
Cosmetic	126 (70.0)
Apparel	107 (59.4)
Food	106 (58.9)
Digital products	72 (40.0)
Others	10 (5.6)
<i>Reported platforms for influencer ads¹</i>	
Daigou	66 (36.7)
Weibo	112 (62.2)
Bilibili	119 (65.1)
Taobao	81 (44.4)
Others	43 (23.9)

Table 3.
Demographic statistics
of the study
sample (*n* = 235)

Note(s): ¹Noted that this question is a multi-choice question

5.1 Measurement model assessment

5.1.1 Reliability, convergent validity and discriminant validity. The reliability and validity of the measures were evaluated according to the following criteria (Hair *et al.*, 2011, 2016; Fornell and Larcker, 1981): Cronbach's alpha and composite reliability of each construct should be greater than 0.7; the average variance extraction (AVE) of each construct is adequate if it is higher than 0.5; each construct's AVE must be higher than its squared correlations with any other constructs (Fornell-Larcker criterion); and the heterotrait-monotrait (HTMT) ratio of correlations value should be less than 0.9. Furthermore, each measurement item's outer loading on its associated construct should be higher than any of its cross-loadings on other constructs.

Cronbach's alpha, composite reliability, AVE and the Fornell-Larcker test of the study's constructs are summarized in Table 5. The values of Cronbach's alpha and composite reliability of all constructs ranged from 0.79 to 0.94, indicating that the measurement's internal consistency was satisfactory. All the AVE values were greater than 0.5, indicating sufficient convergent validity. The Fornell-Larcker criterion was fulfilled as each construct's AVE value was higher than its squared correlations with other constructs. In addition, as shown in Table 6, the HTMT values were all less than 0.9, demonstrating that discriminant validity was established for each construct. Table 7 shows that the outer loadings of the items were above 0.7, which is greater than their cross-loadings, revealing the reasonable reliability and validity of the measurement items. Hence, the overall reliability and validity of the measurement are sufficient for the measurement model assessment.

5.1.2 Multicollinearity and common method bias. Multicollinearity issues may occur when the endogenous construct is predicted by multiple exogenous constructs, affecting the

Construct	Mean	SD	95% CI	Skewness	Kurtosis
PU	4.17	0.90	[4.05, 4.25]	-0.00	1.54
UHI	3.33	1.12	[3.19, 3.47]	-0.28	0.08
PE	3.83	1.01	[3.70, 3.95]	-0.57	1.39
TR	3.49	0.88	[3.38, 3.61]	-0.20	0.65
ATT	4.08	0.90	[3.92, 4.15]	-0.71	1.78
CE	3.53	0.93	[3.71, 3.95]	-0.48	0.67
IC	3.52	0.97	[3.39, 3.64]	-0.47	0.42

Note(s): PU, perceived usefulness; UHI, urge to buy impulsively; PE, perceived entertainment; TR, trust; ATT, attitude toward influencer ads; CE, celebrity effect; IC, influencer credibility.

Table 4.
Descriptive statistics
of the constructs

Construct	Cronbach's alpha	Composite reliability	AVE	Fornell-Larcker criterion						
				PU	UHI	PE	TR	ATT	CE	IC
PU	0.87	0.92	0.60	0.89						
UHI	0.86	0.92	0.78	0.47	0.89					
PE	0.91	0.94	0.85	0.34	0.31	0.92				
TR	0.82	0.89	0.73	0.54	0.44	0.45	0.86			
ATT	0.79	0.88	0.71	0.49	0.36	0.72	0.49	0.84		
CE	0.83	0.90	0.74	0.61	0.51	0.39	0.57	0.54	0.89	
IC	0.84	0.90	0.76	0.59	0.53	0.48	0.65	0.57	0.68	0.87

Note(s): AVE, average variance extracted; PU, perceived usefulness; UHI, urge to buy impulsively; PE, perceived entertainment; TR, trust; ATT, attitude toward influencer ads; CE, celebrity effect; IC, influencer credibility.

Table 5.
Cronbach's alpha,
composite reliability,
AVE, and the Fornell-
Larcker test of the
constructs

INTR
33,4

1648

Table 6. Note(s): PU, perceived usefulness; UBI, urge to buy impulsively; PE, perceived entertainment; TR, trust; HTMT criterion results ATT, attitude toward influencer ads; CE, celebrity effect; IC, influencer credibility

	PU	UBI	PE	TR	ATT	CE	IC
PU	–						
UBI	0.54	–					
PE	0.38	0.35	–				
TR	0.64	0.53	0.53	–			
ATT	0.59	0.45	0.85	0.61	–		
CE	0.72	0.60	0.45	0.69	0.67	–	
IC	0.69	0.62	0.55	0.78	0.70	0.82	–

Item	PU	UBI	PE	TR	ATT	CE	IC
PU1	0.90	0.48	0.32	0.53	0.44	0.55	0.51
PU2	0.87	0.37	0.26	0.43	0.41	0.54	0.53
PU3	0.91	0.41	0.32	0.49	0.46	0.54	0.54
UBI1	0.40	0.92	0.32	0.43	0.32	0.48	0.49
UBI2	0.44	0.91	0.28	0.41	0.33	0.50	0.48
UBI3	0.42	0.83	0.23	0.34	0.32	0.36	0.42
PE1	0.28	0.23	0.89	0.39	0.65	0.31	0.38
PE2	0.32	0.31	0.66	0.43	0.69	0.40	0.46
PE3	0.34	0.32	0.92	0.43	0.55	0.38	0.48
TR1	0.46	0.39	0.40	0.82	0.41	0.43	0.46
TR2	0.42	0.37	0.39	0.86	0.43	0.50	0.58
TR3	0.51	0.38	0.37	0.89	0.42	0.52	0.62
ATT1	0.32	0.27	0.65	0.41	0.85	0.44	0.44
ATT2	0.35	0.32	0.66	0.41	0.88	0.46	0.49
ATT3	0.46	0.34	0.49	0.40	0.79	0.46	0.52
CE1	0.50	0.45	0.35	0.48	0.48	0.81	0.57
CE2	0.55	0.45	0.37	0.46	0.51	0.89	0.56
CE3	0.53	0.41	0.29	0.52	0.39	0.88	0.64
IC1	0.53	0.40	0.46	0.60	0.54	0.60	0.89
IC2	0.53	0.41	0.34	0.47	0.45	0.56	0.85
IC3	0.48	0.56	0.44	0.61	0.50	0.62	0.87

Table 7. Outer loadings and cross-loadings for the measurement items Note(s): PU, perceived usefulness; UBI, urge to buy impulsively; PE, perceived entertainment; TR, trust; ATT, attitude toward influencer ads; CE, celebrity effect; IC, influencer credibility

parameter estimation accuracy in the model assessment. To examine the multicollinearity of the research model, we calculated the variance inflation factor (VIF) of the exogenous constructs in the subparts of the model. A VIF value between 0.2 and 5.0 indicates the absence of multicollinearity issues in the model (Hair *et al.*, 2011). Based on the specification of the research model, a multicollinearity test was conducted among influencer credibility, celebrity effect, perceived entertainment, trust and perceived usefulness in predicting attitude toward influencer ads. The results show that the present study's inner (factor-level) VIF values in the present study ranged from 1.363 to 2.502, indicating the absence of multicollinearity issues.

Common method biases resulting from multiple sources, such as social desirability and consistency motives, can be produced using self-reported data (Podsakoff *et al.*, 2003). Kock (2015) argued that a VIF value greater than 3.3 indicates that a model may be contaminated by common method bias. In this regard, this may not be a serious concern for this study because all the VIF values derived from the multicollinearity test were lower than 3.3.

To further justify these results, a statistical remedy was performed following the approaches of [Liang et al. \(2007\)](#) and [Liu et al. \(2018\)](#). First, we convert each indicator in the research model into a single-indicator construct (first-order). We then linked this to the corresponding second-order construct, which is the previous first-order construct. Subsequently, a common method construct, whose indicators included all the principal constructs' indicators, was introduced in the converted model. The variances of each indicator substantively explained by the principal construct and the common method construct were compared to determine whether the common method explained the majority of the covariance. As shown in [Table 8](#), the substantive factor loading ($R1$) of each indicator was significant at $p < 0.01$ level, whereas none of the method factor loadings ($R2$) were significant. Additionally, the ratio of substantive variance ($R1^2$) to method variance ($R2^2$) was notably high (approximately 192:1), confirming that this study was not threatened by common method bias.

5.2 Structural model assessment

5.2.1 Model fit, parameter estimation and bootstrapping. To examine the structural model, the path coefficient of each hypothesized path was estimated, and the corresponding statistical significance was ascertained using 5,000 bootstrap subsamples with observations randomly picked from the available dataset. The coefficients of determination of the R^2 values of the endogenous constructs were calculated to determine the overall variance that could be justified using the predictor constructs.

The PLS algorithm was applied to test the fitness between the collected data and the structural model. Therefore, the threshold cut-off of the model fit criterion values has not been adequately proven, as there is no global goodness-of-fit index for PLS-SEM ([Hair et al., 2016](#); [Henseler et al., 2016](#)). The model fit indices are usually not reported whenever bootstrapping

Construct	Indicator	Substantive factor		Method factor	
		loading ($R1$)	$R1^2$	loading ($R2$)	$R2^2$
Perceived usefulness	PU1	0.854**	0.719	0.055	0.003
	PU2	0.823**	0.652	-0.059	0.003
	PU3	0.905**	0.820	0.001	0.000
Urge to buy impulsively	UB1	0.927**	0.859	-0.002	0.000
	UB2	0.893**	0.798	0.022	0.000
	UB3	0.834**	0.695	-0.023	0.001
Perceived entertainment	PE1	0.935**	0.875	-0.062	0.004
	PE2	0.937**	0.878	0.015	0.000
	PE3	0.887**	0.787	0.045	0.002
Trust	TR1	0.818**	0.668	-0.010	0.000
	TR2	0.874**	0.763	-0.008	0.000
	TR3	0.877**	0.770	0.016	0.000
Attitude toward influencer ads	ATT1	0.923**	0.852	-0.089	0.008
	ATT2	0.873**	0.763	0.005	0.000
	ATT3	0.715**	0.511	0.091	0.008
Celebrity effect	CE1	0.709**	0.503	0.112	0.012
	CE2	0.919**	0.845	-0.029	0.001
	CE3	0.949**	0.901	-0.074	0.005
Influencer credibility	IC1	0.869**	0.755	0.021	0.000
	IC2	0.995**	0.991	-0.145	0.021
	IC3	0.793**	0.591	0.117	0.014
Average		0.874	0.769	0.000	0.004

Note(s): ** $p < 0.01$; PU, perceived usefulness; UB, urge to buy impulsively; PE, perceived entertainment; TR, trust; ATT, attitude toward influencer ads; CE, celebrity effect; IC, influence credibility.

Table 8.
Common method bias
analysis

and blindfolding techniques are applied in the PLS approach. Some researchers have argued for the utilization of the Standardized Root Mean Square Residual (SRMR) and Normed Fit Index (NFI) as model fit measures for PLS-SEM to avoid model misspecification (Hu and Bentler, 1998; Bentler and Bonett, 1980; Henseler *et al.*, 2016). It is generally recognized that the value of SRMR is less than 0.08, and the value of NFI ranges from 0 to 1 (the closer it is to 1, the better), indicating a good model fit. In this study, the SRMR and NFI values were 0.067 and 0.810, respectively, indicating a satisfactory level of fit.

As summarized in Table 9, which presents the results of the path coefficient estimation and bootstrapping of the I-eB model, our results show that five of the eight hypotheses were supported. These hypotheses are as follows.

H1, consumers' favorable attitude toward influencer ads has a significant positive effect on their urge to buy impulsively ($\beta = 0.368, p < 0.01$). **H2**, the celebrity effect, has a significant positive effect on consumers' favorable attitude toward the ads ($\beta = 0.150, p < 0.05$). **H4**, influencer credibility has a significant positive effect on the celebrity effect ($\beta = 0.683, p < 0.01$). **H5**, the perceived entertainment level of the ad has a significant positive effect on consumers' favorable attitude toward the ads ($\beta = 0.556, p < 0.01$). **H6**, the perceived usefulness of the ad has a significant positive effect on consumers' favorable attitude toward the ads ($\beta = 0.140, p < 0.05$). **H8**, consumers' trust in influencer ads has a significant positive effect on their perceived usefulness of the ads ($\beta = 0.540, p < 0.01$).

In addition, the results showed that gender had a significant impact on respondents' urge to buy impulsively ($\beta = 0.238, p < 0.01$). In contrast, prior experience viewing influencer ads revealed a non-significant relationship with individuals' buying impulses.

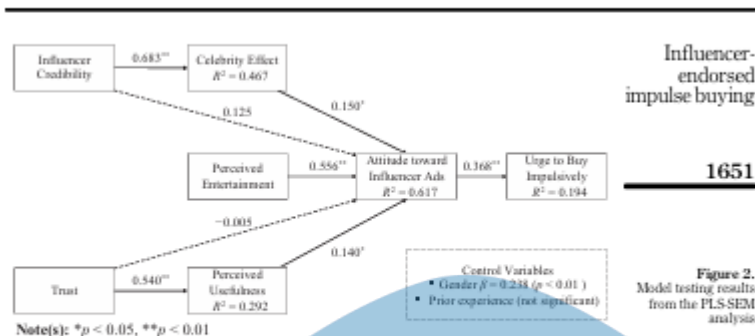
Overall, the I-eB model explained 61.7% of the variance in attitude toward influencer ads and 19.4% in the urge to buy impulsively. The model testing results are shown in Figure 2.

5.2.2 Mediation analysis. The test of the mediation effect aims to analyze the process and mechanism of the influence of the independent variable on the dependent variable, whereby more in-depth results may be obtained. The specification of the research model implies the

Path	Hypothesis	Path coefficient (direct effect)	t-value for path coefficient	Total effect	t-value for the total effect
PU → UBI				0.067	1.763
PU → ATT	H6 (Supported)	0.140*	2.025	0.140*	2.025
PE → UBI				0.202**	5.803
PE → ATT	H5 (Supported)	0.556**	8.607	0.556**	8.607
TR → PU	H8 (Supported)	0.540**	9.807	0.540**	9.807
TR → UBI				0.026	0.810
TR → ATT	H7 (Not supported)	-0.005	0.067	0.070	0.878
ATT → UBI	H1 (Supported)	0.368**	5.604	0.364**	5.604
CE → UBI				0.064	1.767
CE → ATT	H2 (Supported)	0.150*	1.984	0.150*	1.984
IC → UBI				0.082*	2.527
IC → ATT	H3 (Not supported)	0.125	1.739	0.247**	3.154
IC → CE	H4 (Supported)	0.683**	17.885	0.683**	17.885
GEN → UBI				0.238**	4.141
EXP → UBI					
EXP → CE		-0.048	0.909	-0.048	0.909

Table 9.
Path coefficient estimation and bootstrapping results of the I-eB model

Note(s): * $p < 0.05$, ** $p < 0.01$; PU, perceived usefulness; UBI, urge to buy impulsively; PE, perceived entertainment; TR, trust; ATT, attitude toward influencer ads; CE, celebrity effect; IC, influencer credibility; GEN, gender; EXP, Prior experience



existence of potential mediators between two of the hypothesized paths (i.e. "influencer credibility → celebrity effect → attitude toward influencer ads" and "trust → perceived usefulness → attitude toward influencer ads"). To further explore the mediation effect, a bootstrap approach to evaluate the statistical significance of the indirect effect was selected because it is recommended as a better approach than Sobel's test in the causal steps approach (Preacher and Hayes, 2008; Zhao *et al.*, 2010). Zhao *et al.* (2010) concluded that the only requirement to establish mediation is to test the significance of the indirect effect. Accordingly, three mediation types and two non-mediation types can be identified.

For mediation types, the first is complementary mediation; that is, indirect effect and direct effect both exist and point in the same direction. Second, competitive mediation, that is, indirect effect and direct effect, both exist and point in opposite directions. Third, indirect-only mediation, that is, indirect effect exists, but no direct effect.

As for non-mediation types, one is direct-only non-mediation, that is, direct effect exists, but no indirect effect, while the other is no-effect non-mediation, that is, neither direct effect nor indirect effect exists.

As shown in Table 10, the indirect effects of influencer credibility on attitude toward influencer ads ($\beta = 0.103$, $t\text{-value} = 1.965$) and trust in attitude toward influencer ads ($\beta = 0.075$, $t\text{-value} = 1.972$) were both significant. However, the direct effects were not, implying an indirect-only mediation type in the two hypothesized paths. Therefore, it is believed that the mediators identified in our research model were consistent with the hypothesized theoretical framework, and potential omitted mediators were unlikely to exist.

6. Discussion

Through a literature review on influencer advertising, impulse buying and relevant behavior research, this study was conducted to develop a theoretical model (i.e. the I-eIB model) that

Effect of	Direct effect (β -value)	Indirect effect (β -value)	Mediation type
IC → CE → ATT	0.124 (1.735)	0.103* (1.965)	Indirect-only mediation
TR → PU → ATT	-0.005 (0.057)	0.075* (1.972)	Indirect-only mediation

Note(s): * $p < 0.05$, ** $p < 0.01$; PU, perceived usefulness; TR, trust; ATT, attitude toward influencer ads; CE, celebrity effect; IC, influencer credibility

Table 10.
Test of mediation by the bootstrap approach

explains how influencers' live streaming ads on e-commerce platforms create an urge for consumers to buy impulsively. Seven constructs were included in the model, and eight hypotheses were proposed to test the interactive relationships among the constructs. The results show that six hypotheses were supported, and the I-eB model explained 61.7% of the variance in attitude toward influencer ads. Additionally, as expected, this study demonstrated that consumers' favorable attitude toward influencer ads significantly affect their urge to buy impulsively. However, the amount of variance in the urge to buy impulsively, which can be explained by the model, was relatively modest (19.4%). This was probably due to its posited antecedent (i.e. attitude toward influencer ads). Hence, future studies should examine other factors that may directly impact impulse buying behavior.

The present study finds that the celebrity effect significantly impacts attitude toward influencer ads. Although the direct effect of influencer credibility on attitude toward influencer ads was shown to be insignificant, it was imposed on consumers' attitudes via the celebrity effect as a mediator. As revealed by the results of the mediation test, the celebrity effect played a partial mediation role in the "influencer credibility → celebrity effect → attitude toward influencer ads" path, with its indirect effect accounting for 45.37% of the total effect. This result implies, as also pointed out by Till and Busler (2000), that personal attributes such as expertise, trustworthiness and attractiveness of the influencers would substantially affect their levels of influence and appeal among the audience and eventually affect consumers' favorable attitudes toward influencer ads and their buying intention. Consistent with previous research (Ducoffe, 1996), this study found that the perceived entertainment level of ads had a significant effect on consumers' attitudes toward influencer ads, suggesting that brands should take advantage of various methods to impress, delight and attract the audience.

Additionally, the study results reveal that consumers' perceived usefulness of influencer live-streaming ads positively affected their attitudes toward the ads, suggesting that brands should create valuable advertising content to increase their persuasive power. While consumers' trust in influencer live-streaming ads showed a non-significant influence on their attitude toward the ads, the direct effect of trust on perceived usefulness was significant, which is consistent with previous research (Qin and Kong, 2015; Ashraf et al., 2020). This result indicates that the higher the level of trust in influencer live-streaming ads, the more informational value consumers perceive from the ads. By contrast, consumers who are more skeptical of influencer ads may perceive them as less useful.

Regarding the measurement accuracy of respondents' purchasing impulsivity, Yüksel (2017) reported that a high rate of response bias might affect the measurement accuracy of respondents' opinions, perceptions and attitudes and hinder the generalizability of the study conclusions. Nevertheless, the researchers' acknowledgment of the response bias was low. In the present study, we conducted both procedural and statistical analyses to resolve the risks of such biases. However, as Khare and Vedel (2019) argued, some biases, such as recall bias, could not be eliminated when the study involved self-reported data. Considering that a self-reported survey is one of the most popular approaches to examining impulse buying in the literature (Zafar et al., 2020) and that satisfactory results were revealed in the common method bias analysis, the findings of this study are believed to be reliable.

7. Conclusions

This study proposes the I-eB model and eight hypotheses to examine the influence of influencer credibility, celebrity effect, perceived entertainment, perceived usefulness and trust on consumers' attitudes toward influencer ads and their urge to buy impulsively. Notably, this study provides a theoretical reference for designing influencer advertising campaigns and practical insights and recommendations for improving influencer advertising strategies in the context of e-commerce live streaming.

7.1 Practical implications

In today's advertising market, increasingly more brands prefer hyperactive influencers on social media, such as vloggers and Instafamous personalities, to traditional celebrity endorsers (Schouten *et al.*, 2020). However, the marketing implications of influencer live-streaming advertising strategies on e-commerce platforms and their effect on consumers' impulse buying behavior is still unclear and require further studies. Supporting this trend, the results of this study provide several insights for marketing practitioners. Regarding the credibility of influencers and their ads, it is suggested that brands seeking influencers for product endorsement should not only consider the external appeal of the candidates but also pay attention to their intrinsic nature as well as the fitness between their expertise and the product (Park and Lin, 2020). In particular, brands should avoid collaborating with those involved in scandals, as this may negatively affect consumer perceptions of brands (Campbell and Farrell, 2020). Moreover, research has shown that multiple endorsements by the same celebrity might reduce the effectiveness of celebrity endorsements, especially when consumers view that celebrities are engaged in too many product endorsements simultaneously (Bergkvist and Zhou, 2016). Hence, brands should also consider such measures when seeking collaborations.

In addition, our study demonstrates that the entertainment elements of ads are indispensable in advertising campaigns. Therefore, a straightforward solution is to seek endorsements from influencers who entertain the audience. Meanwhile, brands and advertisers should consider the potential influence of different cultural backgrounds of the audience, as this may affect their understanding of the contents of the ads.

In light of the positive connection between trust and perceived usefulness, and their effects on consumers' attitudes toward influencer ads, brands and influencers should provide objective and truthful information in their ads. Informative advertising content is advised because consumers tend to be more motivated to seek useful product information and prudent in identifying it in ads (Tran, 2017).

7.2 Theoretical contributions

This study contributes to the existing literature on advertising and Internet research in three ways.

7.2.1 Research context. E-commerce live streaming is a relatively new advertising strategy in the industry and academic research stream. As noted in the literature review, previous research seldom investigated the effect of influencer live-streaming advertising on consumers' buying impulses on e-commerce platforms. This study built a model in the context of emerging e-commerce live streaming to explore the mechanism by which consumers' buying impulses are stimulated by influencer advertising from influencer credibility, the celebrity effect, perceived entertainment, perceived usefulness and trust. This study is novel in extending Internet advertising research in the context of e-commerce live streaming for impulse buying.

7.2.2 Research model. This study's research model (I-eIB) targets a new advertising channel: e-commerce live streaming. Our proposed research model was developed through a thorough literature review and examined consumers' urge to buy impulsively, mainly from an influencer advertising perspective. Specifically, this study introduces a novel construct, the celebrity effect, to examine the potential impact of influencers' intrinsic ability to influence consumers' perceptions and opinions about influencer ads. Therefore, this study provides unique insights into consumers' impulse buying in the context of e-commerce live streaming.

7.2.3 Research findings. This study conducts an in-depth discussion to unveil the rationale behind the influence of the proposed constructs on consumers' buying impulses. The I-eIB model contributes to understanding influencer-endorsed impulse buying. It showed that all

7.3 Limitations of this study and future work

This study has several limitations. First, this study used the urge to buy impulsively as a proxy to measure consumer impulse buying behavior because it is a commonly used indicator in previous research (e.g. Chen *et al.*, 2016; Liu *et al.*, 2013; Zafar *et al.*, 2020). However, consumers feeling the urge to buy does not necessarily imply that they will carry out, although Zhang *et al.* (2018) found a significant and positive relationship between the urge to buy impulsively and impulse buying behavior. Hence, further research is required to examine the relationship between these two variables in the context of influencer advertising. Second, our study focuses mainly on young consumers. Hence, this study's results may not necessarily apply to consumers of other ages. Third, this study only considered seven constructs in the research model and identified one direct antecedent for the urge to buy impulsively. Future studies should explore the influence of other potential factors on consumer impulse purchase behavior, such as social influence (Yan and Or, 2018, 2019; Zhang *et al.*, 2018), degree of urgency (Leong *et al.*, 2017; Wessel *et al.*, 2019), the visual design of the ads (Hoffmann *et al.*, 2019) and gender differences (Ng and Chan, 2018). In particular, future research should explore the impact of interaction, which serves as the key feature that distinguishes e-commerce live streaming from conventional shopping modes (e.g. TV shopping) on consumers' impulse buying behaviors.

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