



<https://jurnal.universitasputrabangsa.ac.id/index.php/fokbis/index>
ISSN: 2623-2480/ P-ISSN: 1693-5209

Digital Skills and Digital Safety on Digital Literacy of Female Entrepreneurs and Their Impact on MSME Performance in Purbalingga Regency

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Article Information

History of Article:

Received May 23rd 2024

Accepted December 28th 2024

Published December 31th 2024

DOI:

doi.org/10.32639/t56f8297



ABSTRACT

The world has now entered the digital era in all aspects, including in entrepreneurial activities. This Increases Pressure On demands that MSME (Micro, Small, and Medium Enterprises) transform into the digital realm. 65% of entrepreneurs in Indonesia are women, totaling 37 million people, which calls for more attention to be given to knowledge regarding digital literacy, digital skills, and digital safety. This is essential to maximize business performance by developing potential through proficiency and security in optimizing digital tools. This was proven through research conducted on 72 female entrepreneurs who are members of the Muslimah Entrepreneur (ME) community in Purbalingga Regency. SPSS 25.0 was used with a quantitative approach. The outcomes of the tests demonstrate that digital literacy has a significant impact on digital safety for female entrepreneurs, and both have a significant influence that directly affects MSME performance. Meanwhile, the relationship between digital literacy and digital skills, as well as between digital skills and MSME performance, did not show a significant impact.

Keywords: Female Entrepreneurs, Digital Literacy, Digital Skill, Digital Safety, MSME

ABSTRAK

Dunia saat ini telah memasuki era digital dalam segala aspek termasuk dalam kegiatan berwirausaha, hal ini menuntut UMKM untuk bertransformasi kedalam ranah digital. 65% dari pelaku wirausaha di Indonesia adalah wanita mencapai angka 37 juta jiwa, sehingga mereka perlu mendapatkan perhatian lebih dalam pengetahuan mengenai digital literacy, digital skill dan digital safety. Agar mampu memaksimalkan kinerja usaha dengan mengembangkan potensi yang dimiliki melalui kemahiran dan keamanan dalam optimalisasi perangkat digital. Terbukti melalui riset yang dilakukan pada 72 wirausahawan Wanita yang tergabung pada komunitas Muslimah Entrepreneur (ME) di Kabupaten Purbalingga. Menggunakan pendekatan kuantitatif dengan menggunakan Path Analysis yang diuji dengan SPSS 25.0. Hasil pengujian menunjukkan digital skill dan digital safety memiliki pengaruh signifikan terhadap digital literacy dan berdampak secara signifikan terhadap kinerja UMKM.

Kata kunci: Wirausaha Wanita, Digital Literacy, Digital Skill, Digital Safety, UMKM

INTRODUCTION

The digitalization of the global economy is now an inescapable reality, leading the Indonesian government to accelerate digital transformation across four critical sectors consisting of : digital infrastructure, digital governance, digital society, and the digital economy (Setu, 2016). Ideally, the primary focus of digital economy development should be on SMEs, as data from the Ministry of Cooperatives and Small and Medium Enterprises of the Republic of Indonesia in 2021 reveals that there are 64.2 million SME entrepreneurs, who contribute significantly to the country's gross domestic product, accounting for 61.07% or IDR “8,573.89” trillion. These SMEs also provide jobs for 97% of the total workforce and absorb 60.4% of Indonesia's total investment (Sulastri, 2022). Of all SME entrepreneurs, 64.5% are women, making up 37 million individuals (Aditya, 2022).

Supporting the growth of women entrepreneurs is essential, and it is vital for them to possess strong digital literacy (Ayu et al., n.d.), (Rizqi Amelia et al., 2022). Digital literacy has been proven to have a significant positive effect on business performance in various studies (Rofaida & Ciptagustia, 2021), (Bidasari et al., 2023), (Firmansyah & Dede, 2022). Achieving success in enhancing digital literacy within communities is also a key objective for the government today. The Ministry of Communication and Information of the Republic of Indonesia has established the pillars of digital literacy, which are deemed essential for driving digital transformation. These pillars include digital skills, digital safety, digital culture, and digital ethics (Setu, 2021), (Nandang et al., 2019).

Digital skills and digital safety have been proven through several previous studies to be key factors in adapting to digital literacy, and they are important part of digital literacy that everyone must be understood and considered when using digital devices (Nisa et al., 2023). Learning in the 21st century requires literacy and skills that are critical for good performance and for developing as independent learners (Toha et al., 2021). There is concrete evidence in research that is a significant relationship between digital skills and digital literacy (Arandas et al., 2024), (Cirius & Simonova, 2021), (Vodă et al., 2022). Digital skills make it easier for individuals to learn, operate, and even overcome difficulties in the process of digital literacy, thus becoming a key factor in adapting to digital literacy. Meanwhile, digital safety makes individuals more alert, cautious, and ensures their safety while navigating the online world (Tomczyk, 2020), (Curtis, 2022), (Sonck et al., 2011). Given the negative impacts of the expanding and sophisticated development of digital technology, which also increases digital crimes, law enforcement for such crimes remains difficult to implement (Curtis, 2022).

Purbalingga is one of the regencies in the Central Java region. According to data from the Provincial Cooperative Office, there are 2,602 SMEs in the area. This number is still lower compared to the number of SMEs in neighboring regencies such as Banyumas, Brebes, Cilacap, and Pemasang. Therefore, it is crucial to develop SMEs in Purbalingga to enhance economic growth and improve the prosperity of the community. Muslimah Entrepreneur is one of the many SME groups in Purbalingga, all of whose members are women. It has 250 active members, and its business base is focused on sales through digital platforms (Sonck et al., 2011). Considering the potential of this group, the need for development and support becomes essential.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Business competition for SMEs is currently facing many new challenges, especially after the Covid-19 pandemic, where many business activities have shifted to digital forms. Therefore, having digital skills and digital safety is essential for business actors, as it will positively impact the improvement of digital literacy and, in turn, enhance the performance of SMEs themselves.

Hypothesis

Digital skills are proven to be closely related to digital literacy, where digital skills will facilitate individuals in achieving good digital literacy (Nisa et al., 2023). Without practical knowledge of how to operate on digital platforms, it becomes difficult to comprehend the concepts of digital technology (Syah et al., 2019). These digital skills will continue to evolve as technology progresses, allowing individuals to more easily explore various available digital resources and acquire competent knowledge.

H₁: Digital Skill has a significant effect on Digital Literacy

Digital safety plays a crucial and integral role in strengthening digital literacy. Individuals who have a strong understanding of the dangers of media and online devices will certainly be more cautious (Nisa et al., 2023), act responsibly by helping others choose safe information sources, and will be more protective of their personal data from potential risks (Tomczyk, Ł., 2020).

H₂: Digital Safety has a significant effect on Digital Literacy

The key to improving the performance and competitiveness of SMEs is digital literacy, making it a fundamental necessity (Bindasari et al., 2023). High digital literacy will bring many benefits to SMEs, such as expanded market access, more efficient operations, innovation in products and services, stronger communication, and the ability to analyze market data. This, in turn, will automatically improve the performance of SMEs (Rofaida et al., 2020).

H₃: Digital Literacy has a significant effect on SME Performance

Good digital skills provide numerous advantages for a business, especially when applied to SMEs. As digital skills improve, they facilitate technology adaptation, operational and production efficiency, marketing and promotion, and easier access to data and analysis. This creates a competitive edge that allows SMEs to outperform their competitors (Sartika et al., 2023), (Tulungen et al., 2022).

H₄: Digital Skills has a significant effect on SME Performance

Digital safety is a key factor that determines the growth and sustainability of an organization in today's digital era, as digital crimes are rampant and can harm all parties. Investment in digital safety is crucial to improving performance, as it protects consumer data, defends against cybercrime attacks, sustains business communities, and ensures proper operational system control (Sonck et al., 2011).

H₅: Digital Safety has a significant effect on SME Performance

METHOD

This study uses explanatory research, which aims to clarify the causal relationships between variables through hypothesis testing, where the hypotheses to be tested include five, consisting of one dependent variable and three independent variables. The research method applied is Regression Analysis using SPSS 25.0, complemented by quantitative analysis to examine the relationship between digital skills and digital safety with the digital literacy of female

entrepreneurs, as well as their effects on SME performance in Purbalingga Regency. The population in this study includes all members of Muslimah Entrepreneur, totaling 250 individuals. The sample size is determined using the Slovin formula with a 10% margin of error, as follows:

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{250}{1 + 250(0.1)^2}$$

$$n = 72$$

Thus, the sample size used in this study is 72 respondents. The data collection technique is through the use of a questionnaire, supported by interviews and observations. The research instrument is measured using a Likert scale of 1-5, with the criteria: strongly agree, agree, neutral, disagree, and strongly disagree, in the form of statements or questions. The research instruments can be described as follows:

Table 1. Variable and Indicator

No	Variable	Indicator
1	Digital skill (X1)	1. Accustomed to comparing various information sources to determine their truthfulness. 2. Accustomed to checking whether the information found on websites is correct or false. 3. Able to interact using various digital communication devices. 4. Capable of storing data, information, and content in digital media. 5. Capable of locating and retrieving data, information, and content on digital media as required. 6. Able to upload files to the internet. 7. Able to connect my device to the internet network (Wi-Fi, LAN, mobile data). 8. Able to download files/applications from the internet.
2	Digital safety (X2)	1. Able to distinguish between emails that contain spam/virus/malware and those that do not. 2. Using applications/software to find and remove viruses on mobile phones/computers. 3. Performing backups or saving data in multiple locations, not just one. 4. Knowing how to 'report abuse' on social media if there are posts containing negative or harmful content. 5. Not uploading personal data on social media. 6. Able to disable the option to show geographic location/GPS. 7. Habitually generates strong passwords using a mix of numbers, letters, and punctuation marks. 8. Social media accounts: able to control who can see posts (timeline).
3	Digital Literacy (Y)	1. Enthusiasm and Productivity 2. Computer Anxiety 3. Computer Skills 4. Ability to work using applications 5. Frequency of working using applications
4	MSME Performance (Z)	1. The presence of planned work that proceeds according to the work plan. 2. Frequent work errors that cause repetition. 3. The presence of sales growth. 4. The reduction of fixed costs. 5. The ability to anticipate production when demand increases. 6. Assurance of on-time delivery to customers. 7. Product conformity with the specifications offered.

Source: Literature Review (2024)

RESULT AND DISCUSSION

The study was carried out by distributing questionnaires to gather primary data from 72 female entrepreneurs who are members of Muslimah Entrepreneur (ME) Purbalingga, and all respondents provided full responses. The respondents' characteristics are outlined in the table below:

Table 2. Age of Respondent

Age	Quantity
< 25	0
25 - 35	20
35 - 45	30
>45	22
Total	72

Source: Processed Data, 2024

Table 3. Educational Level of Respondents

Educational Level	Quantity
Elementary	0
Junior High	0
Senior High	15
Diploma/ Barchelor	57
Total	72

Source: Processed Data, 2024

Table 4. Duration of Business

Duration	Quantity
< 1 year	13
1 s.d 3 year	17
> 3 year	42
Total	72
Duration	Quantity

Source: Processed Data (2024)

It can be concluded from the data analysis above that the majority of women entrepreneurs in Purbalingga Regency have received higher education, at 79%. The respondents' age is also mostly productive, with 60% falling between the ages of 25 and 40. Most respondents have had their businesses for more than 3 years, at 59%, and on average, they have expanded to online business platforms.

Testing Results

The initial stage of regression analysis is to conduct validity and reliability tests for each indicator in the variables used. Validity is assessed by comparing the significance value of the computed r (r -count) to the r -table or the highest correlation coefficient, which should be 0.05. Reliability is measured with the criterion that if the Cronbach's Alpha coefficient is greater than 0.60, the question is considered reliable. Conversely, if the Cronbach's Alpha coefficient is less than 0.60, the question is considered unreliable. The results show that all question items are valid and reliable. The results of these tests are presented in the table below:

Table 5. Validity Test

No.	Variable	Item	R count	R table	Sig.	Description
1.11 1.	MSME Performance (Z)	Z.1	0,874	0,213	0,000	Valid
		Z.2	0,901	0,213	0,000	Valid
		Z.3	0,900	0,213	0,000	Valid
		Z.4	0,789	0,213	0,000	Valid
		Z.5	0,854	0,213	0,000	Valid
		Z.6	0,897	0,213	0,000	Valid
		Z.7	0,871	0,213	0,000	Valid
2.	Digital Literacy (Y)	Y.1	0,902	0,213	0,000	Valid
		Y.2	0,906	0,213	0,000	Valid
		Y.3	0,919	0,213	0,000	Valid
		Y.4	0,874	0,213	0,000	Valid
		Y.5	0,883	0,213	0,000	Valid
		Y.5	0,824	0,213	0,000	Valid
3	Digital Skill (X1)	X1.1	0,834	0,213	0,000	Valid
		X1.2	0,801	0,213	0,000	Valid
		X1.3	0,868	0,213	0,000	Valid
		X1.4	0,924	0,213	0,000	Valid
		X1.5	0,878	0,213	0,000	Valid
		X1.6	0,743	0,213	0,000	Valid
		X1.7	0,821	0,213	0,000	Valid
		X1.8	0,893	0,213	0,000	Valid
4.	Digital Safety (X2)	X4.1	0,872	0,213	0,000	Valid
		X4.2	0,908	0,213	0,000	Valid
		X4.3	0,912	0,213	0,000	Valid
		X4.4	0,902	0,213	0,000	Valid
		X4.5	0,874	0,213	0,000	Valid
		X4.6	0,922	0,213	0,000	Valid
		X4.7	0,904	0,213	0,000	Valid
		X4.8	0,931	0,213	0,000	Valid

Source: Processed Data (2024)

Reliability Test

Table 6. Reliability Test

No.	Variable	Crobach's Alpha	Description
1.	Digital Skill (X1)	0,934	Reliable
2.	Digital Safety (X2)	0,931	Reliable
3.	Digital Literacy (Y)	0,914	Reliable
4.	MSME (Z)	0,943	Reliable

Source: Processed Data (2024)

This study also utilizes classical assumption testing to ensure that the research model which used is unbiased, consistent, and accurate in its estimation. The following are the results of classical assumption tests using Normality Test, Multicollinearity Test, and Heteroscedasticity Test:

Table. 7 Normality Test (One-Sample Kolmogorov-Smirnov Test)

		<i>Unstandardized Residual</i>
<i>N</i>		72
<i>Normal Parameters^{a,b}</i>	<i>Mean</i>	.0000000
	<i>Std. Deviation</i>	1.84682917
<i>Most Extreme Differences</i>	<i>Absolute</i>	.091
	<i>Positive</i>	.083
	<i>Negative</i>	-.091
<i>Test Statistic</i>		.091
<i>Asymp. Sig. (2-tailed)</i>		.076 ^c

Source: Processed Data (2024)

The goal of the normality test in this research is to determine if the residuals or error terms in the regression model follow a normal distribution. The nonparametric Kolmogorov-Smirnov (K-S) test was employed for this purpose. According to the criteria, if the significance value exceeds 0.05, the data is deemed to have a normal distribution. The results in the table indicate that the significance value is higher than 0.05.

Table 8. Multicollinearity Test

Model	<i>Collinearity Statistics</i>	
	<i>Tolerance</i>	<i>VIF</i>
X1	0,230	4,349
X2	0,163	6,146
Y	0,205	4,889
Z	0,315	3,172

Source: Processed Data (2024)

The multicollinearity test is conducted to determine whether there is a high correlation among variables in the regression model. This can be observed by looking at the Tolerance value >0.1 and VIF <10. If these conditions are met, there is no multicollinearity among the variables. The data from the multicollinearity test processed using the SPSS program is presented in the following table.

Table 9. Heteroscedasticity Test

Model	<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>	t	Sig.
	<i>B</i>	<i>Std. Error</i>	<i>Beta</i>		
(Constant)	1.111	.592		1.876	.064
1	X1	.099	.387	1.724	.088
	X2	.012	.067	.177	.860
	Y	-.026	-.100	-.419	.676
	Z	-.084	-.355	-1.854	.067

Source: Processed Data (2024)

The heteroscedasticity test is used to ensure that in the regression model, there is no unequal variance of the residuals between one observation and another. The Glesjer method was used, and the criterion is that if the significance value is greater than 0.05, the model does not have heteroscedasticity.

This study formulated five hypotheses, all of which are accepted. The partial effects between variables were measured using a t-test, with the acceptance criteria that the t-value is greater than the t-table value or the significance value is less than 0.05. The t-table value obtained is ($df = n - k - 1$), which is 1.6647. Therefore, it can be concluded that all hypotheses are accepted. The results of hypothesis testing between variables are presented in the table below:

Table 10. Research Hypothesis Test Results

Hypotesis	T-calculate	Signifikansi	Description
H1: Digital Skills has a significant impact on Digital Literacy.	2.351	0,022	Accepted
H2: Digital Safety has a significant impact on Digital Literacy.	3.139	0,002	Accepted
H3: Digital Literacy has a significant impact on MSME Performance.	1.921	0,031	Accepted
H4: Digital Skills have a significant impact on MSME Performance.	1.852	0,043	Accepted
H5: Digital Safety has a significant impact on MSME Performance.	1.687	0,046	Accepted

Source: Processed Data (2024)

Table 11. Coefficient of Determination (R²) Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.372 ^a	.239	.201	2.422

Source: Processed Data (2024)

The purpose of the coefficient of determination test is to determine how much the independent variables contribute to the dependent variable. To assess this, we look at the Adjusted R Square value. From this value, it can be concluded that the independent variables influence the dependent variable by 0.201 (20.1%), while the remaining 0.799 (79.9%) is influenced by other variables not examined in this study.

Discussion

Five hypotheses were formulated to test the effects between the variables of digital skill, digital safety, digital literacy, and the performance of UMKM. Data analysis was conducted using regression analysis with SPSS 25.0 software, and the results are as follows:

Partial Effect of Digital Skill and Digital Safety on Digital Literacy

The calculations obtained using SPSS resulted in a t-value of 2.351 for digital skill and 3.139 for digital safety. The criteria for rejecting the null hypothesis (Ho) are that if the t-value is greater than the t-table value, with a significance level (α) of 5%, we refer to the t-distribution table. For a sample size of 72 and 3 variables ($df = n - k - 1$), the t-table value is 1.67. We can also check the significance value (sig t); if it's smaller than 0.05, it shows significant results. Based on the calculations, Ho is rejected, which means that there is an influence of digital skill and digital safety on digital literacy, which in turn impacts the performance of UMKM. Hypotheses 1 and 2 are accepted, thus concluding that both digital skill and digital safety have a significant partial effect on digital literacy.

Partial Effect of Digital Skill, Digital Safety, and Digital Literacy on UMKM Performance

The criteria for rejecting Ho are that if the t-value is greater than the t-table value, with a significance level (α) of 5%. From the SPSS calculations, it was found that for digital skill, the t-value is $1.852 > 1.667$, for digital safety, the t-value is $1.687 > 1.667$, and for digital literacy, the t-value is $1.921 > 1.667$. Therefore, Ho is rejected, and Hypotheses 3, 4, and 5 are accepted, meaning that digital skill, digital safety, and digital literacy have a partial effect on the performance of UMKM. Referring to the R square value, which is 20.1%, the remaining 79.9% is influenced by other factors not studied in this research.

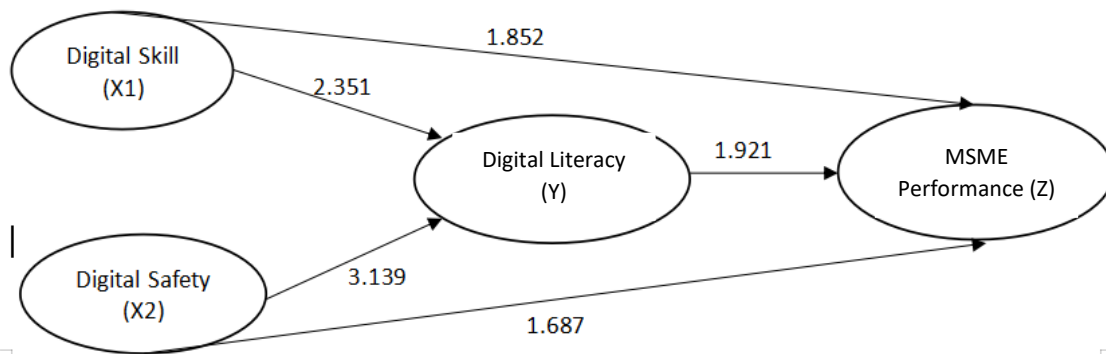


Figure 1. Results of t-test within the Research Framework

The image above illustrates the direct influence between variables, showing that overall, digital skill (X1), digital safety (X2), and digital literacy (Y) are all partially related to performance (Z).

Digital Skill among Women Entrepreneurs Owning SMEs in Purbalingga District

UNESCO defines digital skills as an individual's ability to access and process information obtained from digital sources. These skills can be used to create, collaborate, communicate, share, and solve problems. The digital skills possessed by women entrepreneurs in SMEs in Purbalingga are quite good. Data tabulation calculations show a score of 2.556, indicating that most respondents answered "agree" or "strongly agree." It can be concluded that respondents are accustomed to checking and verifying information before concluding its accuracy. They are able to interact through various devices, store data and information, and use gadgets effectively for several purposes, such as connecting to the internet, uploading, and downloading files. This high level of digital skills reflects the high educational background of the respondents, with 79% having attended higher education. Most respondents (about 60%) are in the productive age range of 25 to 40 years. Additionally, the majority (59%) have been in business for more than three years and have started venturing into online business platforms.

Digital Safety among Women Entrepreneurs Owning SMEs in Purbalingga District

Digital safety refers to efforts to protect users of digital technology from various risks that arise due to its use. The National Institute of Standards and Technology (NIST) defines it as the protection of information and systems from illegal access, use, disclosure, disruption, modification, destruction, or denial. The research results based on respondents' answers indicate a high score of 2.463, meaning that most respondents answered "agree" or "strongly agree." The majority of respondents can distinguish between harmful emails or links containing spam, viruses, or malware. They have installed antivirus software or security applications on their devices. They perform backups in multiple locations, know how to report the misuse of information or harmful content, limit the sharing of personal information, regularly create secure passwords, can activate GPS, and manage the privacy settings of their social media accounts.

Digital Literacy among Female MSME Entrepreneurs in Purbalingga Regency

Discussion about digital literacy, a concept first introduced by Paul Gilster [18] in his book "Digital Literacy," is defined as the ability to comprehend and utilize information in various formats as digital technologies evolve. The questionnaire results indicate that the level of digital literacy among female MSME entrepreneurs in Purbalingga is already high, with a score of 1,451, signifying that the majority of respondents selected "agree" and "strongly agree." These respondents demonstrate high enthusiasm and productivity in digital activities, exhibit low levels of computer anxiety, are skilled in operating digital devices, capable of using applications effectively, and engage with digital tools frequently.

Business Performance among Female MSME Entrepreneurs in Purbalingga Regency

In general, performance is the result of work achieved according to the goals set by an organization (Yuliantika et al., 2023). For MSMEs, performance is defined as the outcomes produced by individuals in relation to their roles or tasks within an organization over a specific period, measured against the company's established standards or values (Mutegei et al, 2015). The research results show that the performance level of MSME owned by female entrepreneurs is good, evidenced by a score of 1,933, indicating that the majority of respondents answered "agree" and "strongly agree." The results align with the work plan, and there are minimal work errors, reflecting these responses. They demonstrate sales growth, reduced production costs, the ability to anticipate demand surges, efficiency, and product alignment with offerings.

CONCLUSION

Although the results of the research indicate that all the proposed hypotheses have been accepted and meet the regression test using the SPSS 25.0 analysis tool, the small R square value of 20.1% suggests that the selected variables only contribute minimally to improving the performance of MSME in Purbalingga District. There is still 79.9% of other factors that have a greater impact, so further research should be conducted by considering additional variables. A qualitative approach or the use of open-ended questionnaires could be utilized, as this study only used closed-ended questionnaires, which limit the responses that could be provided.

For the development of future research, it is recommended to increase the sample size and expand the scope of the research area to allow the results to be generalized to all MSME. Adding other variables, such as digital ethics and digital culture, which are essential components of the four pillars of digital literacy, is also advised. This would provide a clearer understanding of the impact of these variables on the efforts to improve the performance of SMEs, ultimately contributing to the prosperity of all people in Indonesia.

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