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WORLD ECONOMIC FORUM

ASEAN Digital Economy Outlook 2026

INSIGHT REPORT

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Contents

Foreword 4

Executive summary 5

Introduction 6

1 The state of ASEAN's digital economy integration 7

1.1 ASEAN's digital integration snapshot 8

1.2 The foundation layer 10

1.3 The transaction layer 11

1.4 The trust layer 12

1.5 The capability layer 12

2 Business adoption and digital participation 13

2.1 Awareness of key digital issues and tools 13

2.2 Adoption of digital tools in business operations 15

2.3 Participation in cross-border digital trade 17

2.4 Benefits perceived by firms 20

2.5 Awareness and preparedness for the ASEAN DEFA 21

3 Barriers and constraints 25

3.1 Barriers to digital participation 25

3.2 MSME gaps and barriers 27

3.3 Challenges faced by firms using digital technologies 29

4 Policy priorities for ASEAN DEFA implementation and deeper digital integration 31

4.1 From digital readiness to deeper digital participation 31

4.2 Policy Priority 1: Accelerate trusted, end-to-end digital trade 32

4.3 Policy Priority 2: Build trusted digital transaction ecosystems 33

4.4 Policy Priority 3: Strengthen trusted digital transaction infrastructure 34

4.5 Policy Priority 4: Make data governance practical and predictable for firms 35

4.6 Policy Priority 5: Support MSMEs in cross-border digital participation 36

Conclusion 37

Annex: Survey sampling guidelines 38

Contributors 43

Endnotes 44

Foreword



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ASEAN's digital economy is at a decisive moment. Over the past five years, the ASEAN Digital Master Plan, the Bandar Seri Begawan Roadmap: An ASEAN Digital Transformation Agenda to Accelerate ASEAN's Economic Recovery and Digital Economy Integration and other regional initiatives have helped build the foundations for a secure and connected regional digital economy. The ASEAN Digital Economy Framework Agreement (DEFA) takes this work further, providing a regulatory framework for deeper digital integration across the region. At a time when digital trade rules and regulatory approaches are evolving rapidly across the world, greater regional alignment through the ASEAN DEFA can also strengthen ASEAN's comparative advantage as an integrated, trusted and competitive digital market.

With the conclusion of the world's first regionwide digital economy agreement in May 2026, the focus of the ASEAN DEFA now turns to its effective implementation. The success of the ASEAN DEFA will ultimately be measured by how its commitments lead to tangible benefits for businesses and people. For businesses, this means enhancing their ability to conduct commercial transactions seamlessly through interoperable and trusted digital platforms, move data securely across borders, and navigate digital rules with greater ease. For micro, small and medium enterprises (MSMEs) in particular, ASEAN DEFA offers immense opportunities to scale up their businesses, expand markets for their goods and services, and overcome barriers to greater participation in ASEAN's digital economy. At the same time, for millions of online consumers, the digital economy should enhance economic welfare and expand choices, while safeguarding personal data and privacy within a trusted and secure digital ecosystem.

The *ASEAN Digital Economy Outlook (ADEO) 2026* is the first edition following the conclusion of the ASEAN DEFA. It comes at an important time as ASEAN shifts its focus towards implementation. Drawing from evidence from businesses and stakeholders across ASEAN, the report highlights insights into digital readiness, trade facilitation and regulatory conditions across the region. It provides a clear picture of where the region is making progress, where gaps or challenges remain, and what businesses see as the main obstacles to greater digital participation and economic growth.

More importantly, the Outlook is designed to provide practical evidence and recommendations to support greater policy alignment across all ASEAN Member States and identify areas where further regional cooperation can make a difference, as well as providing a basis for tracking progress over time. By strengthening these foundations, ASEAN can also enhance its collective readiness to harness the next wave of technological advancement, including artificial intelligence (AI) and other emerging technologies.

We hope this report helps inform that work and supports ASEAN's continued efforts towards a more connected, inclusive and competitive digital economy.

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Executive summary

The ASEAN Digital Economy Framework Agreement (DEFA) offers the region the opportunity to turn digital readiness into trusted and interoperable regional digital participation.

The Association of Southeast Asian Nations (ASEAN) has laid many of the foundations for a more integrated digital economy. Connectivity has expanded, digital trade facilitation has improved, cybersecurity capacity has strengthened, and businesses are increasingly adopting digital technologies. Yet stronger digital foundations alone do not guarantee deeper regional integration. The evidence in this report points to the challenges facing ASEAN to ensure that digital systems support firms to participate in regional digital markets.

Findings from macro analysis show clear strengths, but also uneven readiness. ASEAN performs above the global average in connectivity, digital trade facilitation and cybersecurity, but continues to lag behind digitally advanced economies in digital payments, digital trade logistics, regulatory openness, innovation and digital capabilities. There are also notable differences in digital readiness among ASEAN Member States (AMS), and this may limit the efficiency and predictability of digital trade.

Firm-level evidence suggests a similar analysis. Awareness and adoption of digital technologies among ASEAN firms is high, particularly for digital payments. Firms report that digital technologies improve efficiency, reduce costs, strengthen trust and streamline business processes. However, participation drops as firms move from domestic digital use to cross-border digital trade. Micro, small and medium enterprises (MSMEs) face the largest gaps, particularly in cross-border payments, authentication, e-signatures and digital trade participation.

The barriers to digital participation are implementation-related. Firms that have yet to adopt digital tools are mainly constrained by limited demand, information gaps, affordability and digital capabilities. Those already using digital technologies face a different set of challenges, including transaction costs, cybersecurity, regulatory uncertainty, legal validity, data governance and cross-border interoperability. Such constraints are particularly evident for MSMEs.

These findings have direct implications for the ASEAN DEFA. Business awareness of the ASEAN DEFA remains low, but firms that are aware of the agreement identify clear priorities: digital trade; cybersecurity; payments and e-invoicing; cross-border e-commerce; and cross-border data flows. These are the areas in which businesses expect practical improvements.

This report identifies five priorities for accelerating ASEAN's digital economy integration:

- **Accelerate trusted, end-to-end digital trade** by expanding paperless trade, strengthening recognition of electronic documents and improving National Single ow interoperability.
- **Build trusted and interoperable payment and e-invoicing systems** that reduce transaction costs, improve settlement speed and support seamless cross-border payments.
- **Strengthen trusted digital identity, authentication and e-signature ecosystems** to improve legal certainty, cybersecurity and cross-border recognition of digital transactions.
- **Make data governance practical and predictable for firms** through clearer business guidance, interoperable transfer mechanisms and transparent cross-border data governance.
- **Support MSMEs in cross-border digital participation** by strengthening digital capabilities, simplifying compliance and promoting affordable, low-friction digital solutions.

ASEAN is entering a decisive implementation phase. The ASEAN DEFA's success will be measured by whether firms, especially MSMEs, can use digital systems more confidently across regional markets.

Introduction

The ASEAN Digital Economy Outlook 2026 assesses whether ASEAN's digital foundations are translating into practical cross-border participation for firms.

ASEAN has made substantial progress in establishing the institutional and policy foundations for regional digital economy integration. Since the 1990s, the region's digital economy architecture has evolved through a set of interlinked and complementary initiatives, including the ASEAN Digital Integration Framework, the Digital Integration Framework Action Plan, the Bandar Seri Begawan Roadmap (BSBR), the ASEAN Agreement on Electronic Commerce and, most recently, the ASEAN Digital Economy Framework Agreement (DEFA).[1] These initiatives have expanded digital connectivity, strengthened digital trade facilitation, accelerated the use of digital services and enhanced the trust framework needed to support digital integration. Recent analysis by the Organisation for Economic Co-operation and Development (OECD) reports that ASEAN's digital trade exports have grown rapidly, reaching an estimated $387 billion in 2022, accounting for nearly one-fifth of total ASEAN exports, while market estimates show that South-East Asia's digital economy will surpass $300 billion in gross merchandise volume (GMV) in 2025, up from about $40 billion a decade earlier.[2]

ASEAN is now entering a new phase of its digital economy integration journey. The BSBR consolidated earlier initiatives into a structured roadmap and positioned the ASEAN DEFA as the next step in ASEAN's digital transformation agenda. This strategic direction is reinforced by the ASEAN Vision 2045 and the ASEAN Economic Community Strategic Plan 2026–2030, which placed digital economy integration at the centre of ASEAN competitiveness, resilience and inclusive growth. The conclusion[3] of negotiations on the ASEAN DEFA in May 2026 marks an important step towards ASEAN's digital economy agenda, providing that this agreement is intended to make digital participation easier, safer and more seamless for businesses and consumers, including micro, small and medium-sized enterprises (MSMEs).

The next challenge for ASEAN, however, is no longer simply expanding enabling foundations or increasing policy frameworks. It is to ensure that firms can use digital systems to trade, pay, authenticate, sign, transfer data and comply with rules across borders. This is particularly important for MSMEs, which account for the overwhelming majority of enterprises in ASEAN but continue to face greater barriers to participating in regional digital markets.[4]

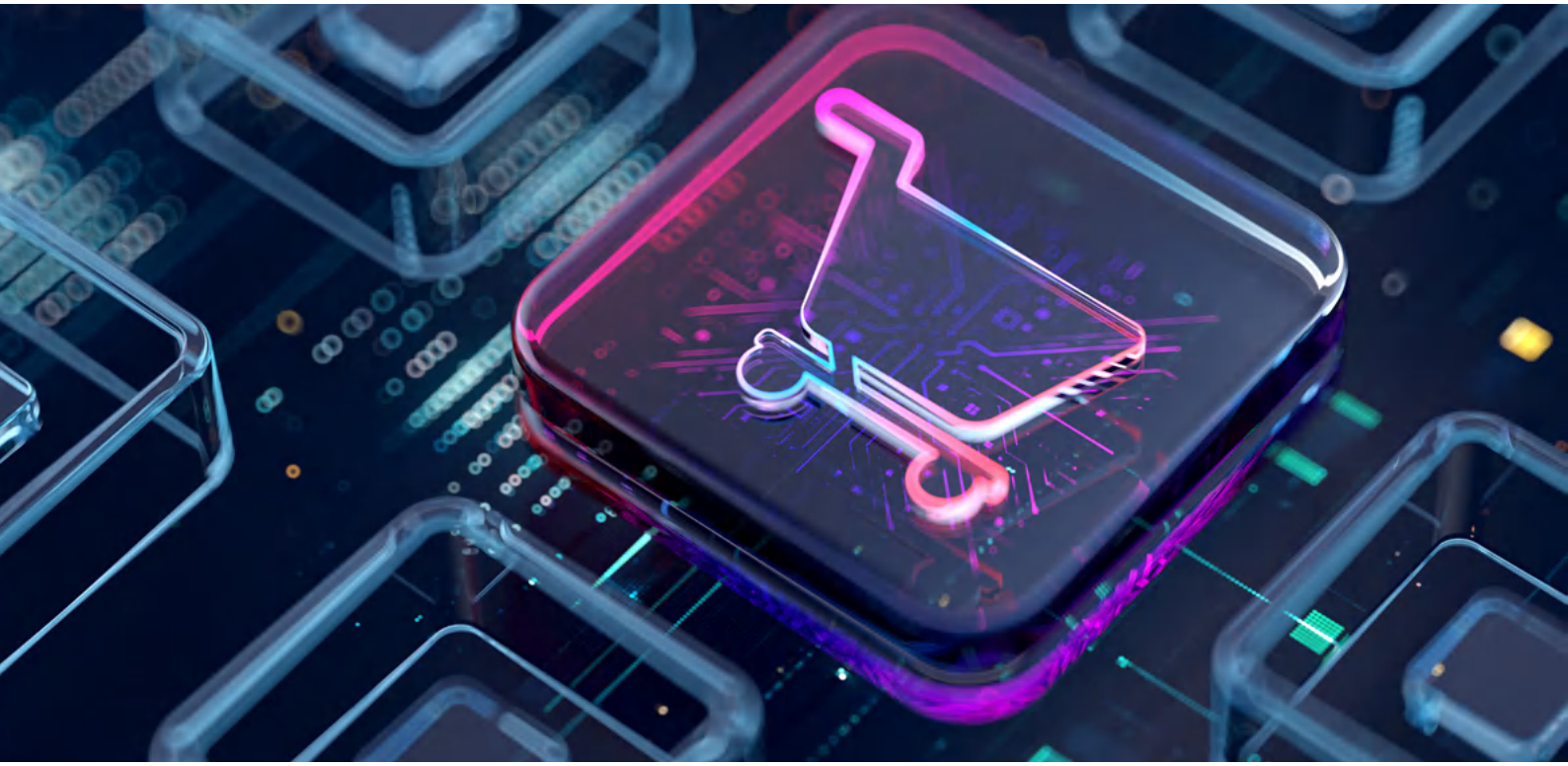
The *ASEAN Digital Economy Outlook 2026* (ADEO 2026) report supports the implementation of the ASEAN DEFA through evidence-based analysis and practical policy recommendations. The report combines international benchmarking with business survey evidence to assess ASEAN's digital readiness, identify the barriers that continue to constrain firms' participation in digital trade, and identify priorities for ASEAN DEFA implementation. Its purpose is to strengthen evidence-based policy-making and provide a practical framework for monitoring progress in digital economy integration.

The report uses a simple analytical framework built around the pathway from digital readiness to digital participation. It begins by assessing ASEAN's enabling environment for digital economy integration, including digital infrastructure, digital trade facilitation, digital payments, regulatory openness, cybersecurity, innovation and digital capabilities. It then examines how firms respond to these conditions through awareness, adoption and use of digital technologies, with particular attention to cross-border digital trade and digital transactions. The analysis subsequently identifies the commercial, technical and regulatory barriers that continue to limit deeper participation, especially for MSMEs. Finally, the report translates these findings into actionable policy priorities for the ASEAN DEFA, focusing on trusted digital trade, interoperable payment systems, trusted digital transactions, data governance and inclusive business participation.

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1 The state of ASEAN's digital economy integration

ASEAN has built a strong foundation for digital economy integration. The next step is to narrow the gap with digitally advanced economies while reducing unevenness across the region.



This section assesses ASEAN's digital economy integration readiness. It asks where the region's enabling conditions are strongest, where gaps remain, and what these gaps imply for firm-level participation in the regional digital economy. The analysis is organized around four linked layers of digital economy integration.

- The first is **foundations**, including connectivity and digital trade facilitation.
- The second is the **transaction** layer, including digital payments and the regulatory environment for digitally enabled services.
- The third is **trust**, including cybersecurity, data protection and confidence in digital transactions.
- The fourth is **capability**, including digital skills, innovation and institutional readiness.

Throughout the section, ASEAN's enabling environment is benchmarked against global averages and a selected digitally advanced reference group comprising Australia, China, Japan, the Republic of Korea and the United States. The analysis also examines variation across ASEAN Member States to identify areas in which uneven digital readiness may constrain regional digital economy integration.

1.1 ASEAN's digital integration snapshot

The ASEAN Digital Integration Index (ADII) provides a useful starting point for benchmarking the region's digital economy integration readiness because it consolidates several enabling conditions into an ASEAN-focused diagnostic framework. The index is composed of six pillars:

- Digital trade and logistics
- Data protection and cybersecurity
- Digital payments and identities
- Digital skills and talent
- Innovation and entrepreneurship
- Institutional and infrastructural readiness

The ADII results in Figure 1 show that ASEAN's ADII 2.0 scores are higher than ADII 1.0 across all six pillars. The largest improvement is in digital payments and identities, which increased by 11.2 points. Data protection and cybersecurity rose by 7.2 points, while digital trade and logistics increased by 6.5 points. These improvements suggest that ASEAN has strengthened several of the transactional and trust foundations needed for digital economy integration.

FIGURE 1 **ADII progress**



Source: ASEAN Secretariat. (2024). ASEAN Digital Integration Index 2.0 report. ASEAN Secretariat. https://asean.org/book/asean-digital-integration-index-report-2-0/

At the same time, the progress across the ADII pillar is uneven. ASEAN's strongest ADII 2.0 pillars are digital payments and identities and data protection and cybersecurity, both scoring 70.0, followed by institutional and infrastructural readiness at 68.5. By contrast, digital skills and talent scores 50.0, while innovation and entrepreneurship scores 51.8. These lower scores point to continuing constraints in the capabilities and innovation ecosystem needed to support deeper digital participation.

ASEAN also remains notably below the comparator group across all six ADII pillars. The largest gaps are in digital trade and logistics at -29.5 points, data protection and cybersecurity at -26.5 points, and innovation and entrepreneurship at -21.9 points. The gap in digital payments and identities is also significant at -19.7 points, even though this is one of ASEAN's strongest pillars in absolute terms. The skills result needs careful interpretation. The digital skills and talent pillar has the lowest ASEAN absolute score, but also the smallest gap against the comparator group. The interpretation is twofold: first and foremost, skills remain a binding constraint for ASEAN firms; and, second, building digital skills and talent remains a broader challenge faced by many economies.

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TABLE 1 | **ADII benchmarking**

ADII pillar	ADII 1.0	ADII 2.0	Change	Comparator average	ASEAN–comparator gap
Digital trade and logistics	55.3	61.8	+6.5	91.3	-29.5
Data protection and cybersecurity	62.8	70.0	+7.2	96.5	-26.5
Digital payments and identities	58.8	70.0	+11.2	89.7	-19.7
Digital skills and talent	48.2	50.0	+1.8	54.9	-4.9
Innovation and entrepreneurship	49.3	51.8	+2.5	73.7	-21.9
Institutional and infrastructural readiness	62.9	68.5	+5.7	81.1	-12.6

Source: ASEAN Secretariat. (2024). ASEAN Digital Integration Index 2.0 report. ASEAN Secretariat. https://asean.org/book/asean-digital-integration-index-report-2-0/

Note: Comparator average refers to the mean score of the selected major economy reference group comprising Australia, China, Japan, the Republic of Korea and the United States. A negative gap means ASEAN's score is below the comparator average.



1.2 The foundation layer

Foundations comprise digital connectivity and trade facilitation or what is broadly known as digital infrastructure. In the context of the digital economy, digital infrastructure is a prerequisite; without it, firms cannot effectively participate in e-commerce, access digital services, exchange electronic documents or engage in cross-border digital transactions. The International Telecommunication Union (ITU)'s ICT Development Index (IDI) provides a useful measure of digital connectivity development. It is explicitly defined in terms of "universal and meaningful connectivity", not simply nominal access.

ASEAN performs relatively well in ICT development (Table 2). The region records an average IDI score of 84.4, exceeding the global average of 77.6 by 6.8 points. This suggests that ASEAN has established a relatively strong connectivity foundation to support digital participation and digital economy development. Yet this regional performance conceals significant internal disparities as reflected by score ranges from 69.7 to 97.7. This means that firms are not operating from the same starting point. While some economies are approaching frontier levels of digital connectivity, others continue to face infrastructure and access constraints that may limit participation in the digital economy. Compared with digitally advanced economies, ASEAN remains 10.2 points below the comparator average of 94.6 and therefore closing these gaps will remain important and should be a continuing agenda item.

TABLE 2 **Connectivity and digital trade facilitation benchmarking**

Indicator	Direction	ASEAN avg	ASEAN min	ASEAN max	Global avg	Comparator avg	ASEAN–global gap	ASEAN–comparator gap
ICT Development Index	Higher = better	84.4	69.7	97.7	77.6	94.6	+6.8	-10.2
Digital and sustainable trade facilitation implementation score	Higher = better	83.4	67.0	97.0	70.0	94.0	+13.4	-10.6

Source: International Telecommunication Union (ITU)'s ICT Development Index 2025. https://www.itu.int/itu-d/reports/statistics/idi2025/; and United Nations Global Survey on Digital and Sustainable Trade Facilitation 2025. https://www.unescap.org/our-work/trade-investment-innovation/untf-survey

Note: Gaps are calculated as ASEAN average minus benchmark average. A positive gap means ASEAN is above the benchmark; a negative gap means ASEAN is below the benchmark.

The second component of the foundational layer is **digital trade facilitation**. To assess this dimension, this report uses the Digital and Sustainable Trade Facilitation Implementation Score developed by the United Nations Global Survey on Digital and Sustainable Trade Facilitation. The index measures the extent to which economies have implemented measures that enable paperless and digitally enabled trade, including, among other factors, electronic customs procedures, electronic exchange of trade documents, cross-border data and information sharing among agencies, and institutional arrangements that support efficient and transparent trade processes. The score provides an indication of how effectively firms can complete cross-border trade transactions.

ASEAN's average implementation score is 83.4, which is 13.4 points above the global average of 70.0, indicating relatively strong performance. Yet, ASEAN remains 10.6 points below the comparator average of 94.0, highlighting that the region has yet to achieve the level of trade facilitation systems observed in more digitally advanced economies. The wide range of scores across Member States – from 67.0 to 97.0 – also suggests uneven readiness across them. Such a significant gap implies that firms continue to face different digital trade environments across ASEAN. This difficulty could arise from structural constraints that potentially reduce the predictability and seamlessness of cross-border business operations within the region.

Overall, ASEAN's digital foundations are stronger than the global average but remain below those of digitally advanced economies. Moving forward, it is important for ASEAN to not only strengthen broader and more reliable digital connectivity but also improve deeper implementation of paperless and digital trade facilitation.

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1.3 The transaction layer

Payments and regulations form the transaction layer of digital economy integration because they determine whether digital readiness becomes actual cross-border business capability. While ASEAN has made important progress on digital payments and digital identity initiatives, broad-based payment use remains weaker than the region's connectivity and trade facilitation foundations.

Across ASEAN, 53.6% of adults (aged 15 years or older) made or received digital payments, compared with a global average of 63.3% and a comparator average of 92.8% (Table 3). This places ASEAN 9.7 percentage points below the global average and 39.2 percentage points below the comparator average. At the same time, payment adoption varies considerably across the region, ranging from 9.1% to 98.9% across Member States. Such wide disparities reflect a highly uneven payment landscape across the region.

Digital trade depends on payment systems that are widely adopted, trusted, affordable and interoperable. As domestic payment ecosystems remain underdeveloped, firms are less likely to confidently engage in cross-border payments. For MSMEs in particular, this can create practical barriers to participating in regional digital markets because they face greater difficulties in receiving payments from customers, paying suppliers and expanding online sales across borders. As a result, payment readiness remains one of the most important constraints on translating ASEAN's digital foundations into deeper regional digital integration.

TABLE 3 **Digital payment readiness and regulatory openness benchmarking**

Indicator	Direction	ASEAN avg	ASEAN min	ASEAN max	Global avg	Comparator avg	ASEAN–global gap (pp)	ASEAN–comparator gap (pp)
Made or received a digital payment (% aged 15+)	Higher = better	53.6%	9.1%	98.9%	63.3%	92.8%	-9.7	-39.2
OECD Digital Services Trade Restrictiveness Index (DSTRI)	Higher = better	0.250	0.090	0.560	0.220	0.098	+0.030	+0.152

Source: The World Bank Global Findex database. https://www.worldbank.org/en/publication/globalfindex; and the OECD Digital Services Trade Restrictiveness Index database. https://www.oecd.org/en/topics/sub-issues/services-trade-restrictiveness-index/digital-stri.html

Regulatory openness is the other major transaction layer. As digital trade expands, rules become part of the operating infrastructure of the digital economy. Regulations on digitally enabled services, online payments, platforms, data, electronic transactions and market access shape whether firms can operate across borders with confidence. To function well, digital markets require rules that are clear, proportionate and less restrictive. This report uses the Digital Services Trade Restrictiveness Index (DSTRI) to measure digital trade openness. For this index, lower value means a more open regulatory environment. The ASEAN average score is 0.250, compared with a whole sample average of 0.220 and a comparator average of 0.098. This suggests that ASEAN has a notably more restrictive digital services trade environment. The ASEAN range, from 0.090 to 0.560, also shows that regulatory conditions for digitally enabled services vary considerably across the region.

The most important implication from the transaction layer findings is that ASEAN's digital integration agenda should focus on widening digital payment adoption, improving the affordability and reliability of payment services, strengthening trust in digital transactions and reducing unnecessary regulatory frictions affecting digitally enabled services.

1.4 The trust layer

Digital trust is becoming an essential part of economic infrastructure. Firms need confidence that transactions are secure, electronic records are reliable, customers are protected, data is being managed responsibly and cybersecurity systems are credible. ASEAN performs strongly against the global benchmark on cybersecurity capacity. The region's average Global Cybersecurity Index (GCI) score is 80.6, which is 28.6 points above the global average of 52.0 (Table 4). This suggests that ASEAN has built a solid cybersecurity foundation for digital economy participation. However, the comparison with digitally advanced economies points to a remaining notable gap. The ADII trust-related pillar reinforces this finding. ASEAN's data protection and cybersecurity score increased from 62.8 in ADII 1.0 to 70.0 in ADII 2.0 (Figure 1), yet ASEAN remains 26.5 points below the comparator average of 96.5, highlighting a sizeable frontier gap (Table 1).

At the same time, data shows that cybersecurity readiness is highly uneven across the region. This unevenness is important for deeper integration. In a cross-border digital economy, firms depend on the reliability of systems beyond their own jurisdiction. Wide variation in cybersecurity capacity can reduce confidence in digital transactions, data handling, online consumer protection and the security of digital services.

TABLE 4 **Cybersecurity benchmarking**

Indicator	Direction	ASEAN avg	ASEAN min	ASEAN max	Global avg	Comparator avg	ASEAN–global gap	ASEAN–comparator gap
Global Cybersecurity Index	Higher = better	80.6	36.9	100.0	52.0	96.9	+28.6	-16.3

Source: International Telecommunication Union (ITU)'s Global Cybersecurity Index 2024. https://www.itu.int/epublications/zh/publication/global-cybersecurity-index-2024/en



1.5 The capability layer

Capability is the cross-cutting constraint in ASEAN's digital economy integration. Even where digital infrastructure, payment systems and trust frameworks are in place, firms need the skills and organizational capacity to use them. ASEAN's digital skills and talent score is 50.0, the lowest ADII 2.0 pillar (Table 1). It also shows the smallest improvement from ADII 1.0, rising by only 1.8 points. The low absolute score suggests that capability may remain a binding constraint for firms seeking to adopt digital tools, comply with digital rules and participate in cross-border digital trade.

Innovation and entrepreneurship point to a related challenge. ASEAN's ADII score for innovation and entrepreneurship is 51.8, compared with a comparator average of 73.7, leaving a gap of 21.9 points (Table 1). This reflects that the broader ecosystem for digital business dynamism remains less developed than in major reference economies.

The combined evidence throughout this section indicates that ASEAN has built many of the enabling conditions for digital economy integration. The remaining challenge is to ensure that firms can translate these foundations into practical cross-border participation. Section 2 examines how businesses are responding to this enabling environment through awareness, adoption and participation in the regional digital economy.

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2 Business adoption and digital participation

Businesses are adopting digital technologies, but cross-border trade participation remains low and uneven.

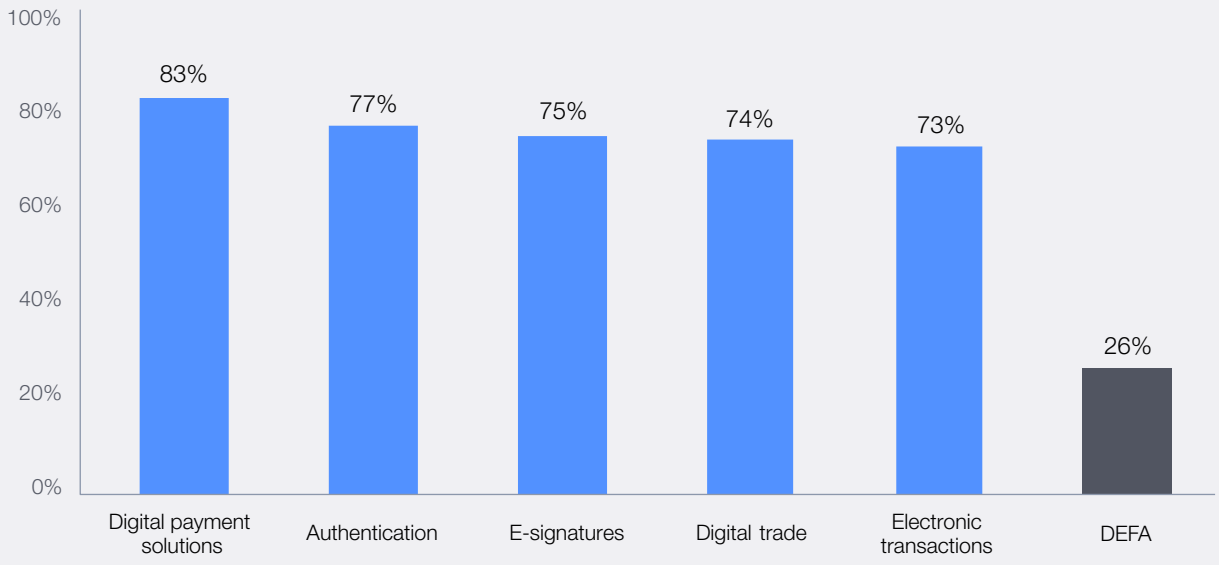
2.1 Awareness of key digital issues and tools

Awareness is the starting point for digital participation. Businesses cannot fully use digital trade systems or take advantage of regional digital economy cooperation if they are not familiar with the tools and frameworks that support them. Developed by the World Economic Forum in the context of the ASEAN DEAL initiative,[5] the survey captures firms' awareness of digital tools such as electronic transactions, digital trade, digital payments, electronic authentication and e-signatures as well as awareness of the regional digital economy frameworks. The methodology note on data collection is described in the Annex to this report.

The results show a significant awareness gap, with firms considerably more familiar with practical business tools than with regional policy frameworks. Specifically, awareness is highest for digital payment solutions at 83%, followed by electronic authentication at 77%, e-signatures at 75%, digital trade at 74% and electronic transactions at 73%. By contrast, only 26% of surveyed firms are aware of the ASEAN DEFA (Figure 2). One important interpretation is that many ASEAN firms may already be engaging with the operational layer of the digital economy without yet connecting those practices to the regional policy architecture intended to support them.

It is important to be cautious. This gap should not be interpreted as evidence that the ASEAN DEFA lacks business relevance. Rather, it reflects the current stage of the policy cycle: the ASEAN DEFA is moving from policy design and negotiation towards implementation and business uptake. However, this low awareness implies implementation challenges in promoting business-facing communication, practical guidance and targeted outreach.

FIGURE 2 **Awareness of digital economy tools and the ASEAN DEFA, 2026**



Source: ASEAN digital economy business survey 2026

Note: For electronic transactions, digital trade, digital payments, electronic authentication and electronic signatures, "aware" includes firms reporting that they are fully aware or generally aware. For DEFA, "aware" refers to firms reporting that they have heard of the ASEAN DEFA.

Awareness gaps by firm size are modest, but larger for trust-enabling tools

Firm size provides an important layer in digital economy awareness. For the analysis, firms with 300 or fewer employees are treated as MSMEs, while firms with more than 300 employees are treated as large firms. Table 5 suggests that the awareness gap across digital tools between MSMEs and large firms is not uniform. Awareness of digital payment solutions is almost identical across firm size groups: 88.9% among MSMEs and 88.7% among large firms. This means that digital payments have become a broadly visible business tool regardless of size.

However, awareness differences become more notable for more trust-enabling tools. Large firms report higher awareness of digital trade by 5.7 percentage points, electronic transactions by 6.5 percentage points, electronic authentication by 9.7 percentage points and electronic signatures by 10.7 percentage points. The largest gaps are more closely linked to legal certainty, identity verification, trusted transactions and cross-border interoperability.

This pattern is important for ASEAN DEFA implementation because MSMEs might not necessarily be disconnected from the digital economy, but they may be less exposed to the more technical and regulatory components of digital integration. Electronic authentication and e-signatures, in particular, require firms to understand not only the tool itself but legal recognition, security and compliance. Larger firms may be better equipped to access this information because they often have dedicated compliance, legal or IT teams. ASEAN DEFA awareness among MSMEs is only 23.8%, compared to 54.5% in large firms. The firm-size gap is significant at 30.7 percentage points. This reinforces the earlier finding that the ASEAN DEFA is not yet highly visible to the business community, especially MSMEs.

TABLE 5 **Awareness of digital economy topics by firm size**

Digital economy topic	MSMEs (≤300 employees)	Large firms (>300 employees)	Difference (pp)
Digital payment solutions	88.9%	88.7%	-0.2
Digital trade	78.5%	84.2%	5.7
Electronic transactions	76.8%	83.3%	6.5
Electronic authentication	80.4%	90.1%	9.7
Electronic signatures	78.5%	89.2%	10.7
ASEAN DEFA	23.8%	54.5%	30.7

Source: ASEAN digital economy business survey 2026

Note: Difference is calculated as the large-firm share minus the MSME share.

Country-level awareness reveals a wider policy visibility challenge

Country-level results show that awareness of digital economy topics varies substantially across ASEAN Member States. The biggest gaps appear in areas where digital tools depend on legal recognition, regulatory clarity or institutional implementation. More specifically, awareness of electronic transactions ranges from 14.6% to 95.4%, while awareness of e-signatures ranges from 30.5% to 99.3%. Digital trade awareness also varies widely, from 31.8% to 97.4% (Table 6).

ASEAN DEFA awareness ranges from 4.9% to 68% across countries, suggesting that the ASEAN DEFA is highly visible in only a few markets and remains largely unfamiliar to firms in most others. Again, this does not mean that the ASEAN DEFA lacks business relevance. Rather, the next challenge is to raise awareness and business outreach in relation to DEFA.

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TABLE 6 **Awareness of digital economy topics varies across countries**

Topic	ASEAN average	Lowest country value	Highest country value	Range (pp)
Digital payment solutions	83.5%	58.1%	99.4%	41.3
Digital trade	74.2%	31.8%	97.4%	65.6
Electronic transactions	72.4%	14.6%	95.4%	80.8
Electronic authentication	76.4%	50.3%	98.7%	48.4
Electronic signatures	74.6%	30.5%	99.3%	68.8
DEFA	26.1%	4.9%	68.0%	63.1

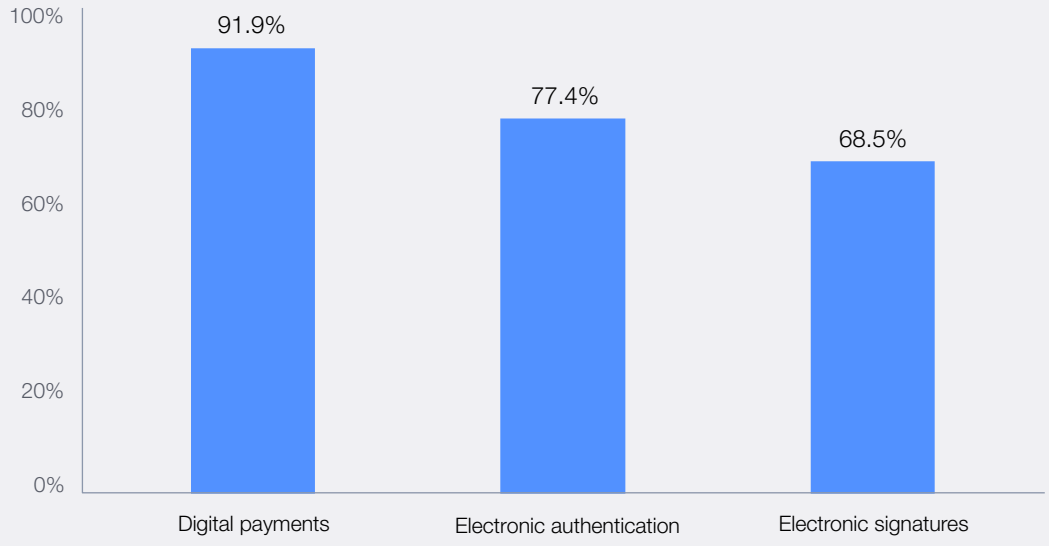
Source: ASEAN digital economy business survey 2026

2.2 Adoption of digital tools in business operations

The next stage of digital participation is operational use. The survey focuses on three transaction-enabling tools: digital payments, electronic authentication and electronic signatures. These tools are important because they allow firms to complete digital transactions: paying and receiving money, verifying identity, authenticating communications and signing documents electronically.

Figure 3 suggests that digital payments are now widely used in business operations. In 2026, 91.9% of surveyed firms report using digital payment solutions. Electronic authentication is also widely used, at 77.4%, while 68.5% report using electronic signatures. This suggests that businesses across ASEAN are increasingly adopting digital technologies in day-to-day operations, notably for digital payment transactions.

FIGURE 3 **Adoption of core digital transaction tools, 2026**



Source: ASEAN digital economy business survey 2026

Firm-size gaps widen for trust-enabling tools

Firm-size differences show that digital adoption is not uniform across transaction tools. Data shows that digital payments have been widely adopted by MSMEs and large firms. The gap between MSMEs and large firms is very small, at only 2.1 percentage points (Table 7). This means that across ASEAN, digital payments have become a broadly embedded business tool, even among smaller firms. However, the gap becomes much larger for more advanced transaction tools. Large firms are 14.7 percentage points more likely than MSMEs to use electronic authentication and 15.6 percentage points more likely to use electronic signatures. The fact that adoption gaps are wider for authentication and e-signatures suggests that MSMEs may face greater difficulty in moving from basic digital use to more advanced forms of trusted digital participation.

TABLE 7 **Adoption of core digital transaction tools by firm size, 2026**

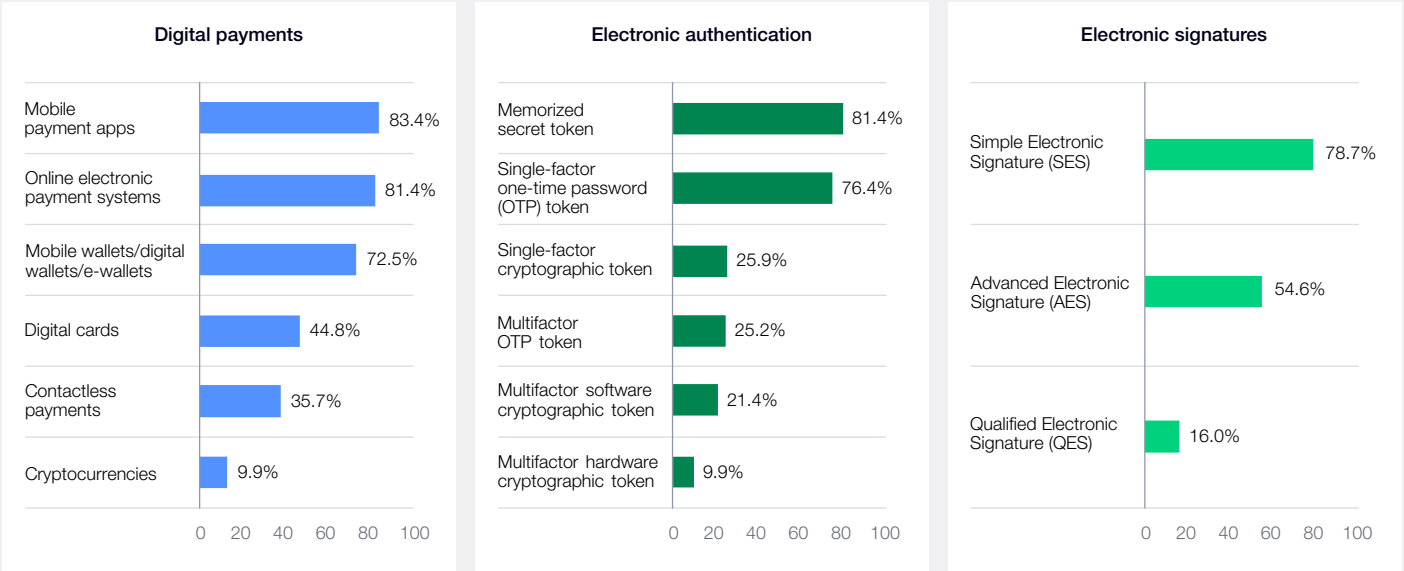
Tool	MSMEs (≤300 employees)	Large firms (>300 employees)	Large-firm gap (pp)
Digital payments	91.6%	93.7%	2.1
Electronic authentication	75.4%	90.1%	14.7
Electronic signatures	66.4%	82.0%	15.6

Source: ASEAN digital economy business survey 2026

Adoption is widespread, but use remains concentrated in basic digital transaction tools

Among firms using digital payments, adoption is concentrated in mainstream and commercially familiar instruments. Mobile payment apps are used by 83% of users, followed by online electronic payment systems at 81% and mobile or digital wallets at 73%. More specialized or infrastructure-dependent payment tools are less common: digital cards are used by 45%, contactless payments by 36% and cryptocurrencies by only 10% (Figure 4). This suggests that firms' payment digitalization is being driven mainly by widely available retail and platform-based payment channels, rather than by more complex or less conventional instruments.

FIGURE 4 **Types of digital transaction tools used by firms, 2026**



Source: ASEAN digital economy business survey 2026

Note: Percentages refer to firms using the relevant tool. Multiple responses were allowed, so shares do not total 100.

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For electronic authentication, the pattern points to relatively basic authentication practices. Memorized secret tokens, such as usernames and passwords, are used by 81% of authentication users, while single-factor one-time password (OTP) tokens are used by 76%. By contrast, more advanced cryptographic authentication methods are much less common: single-factor cryptographic tokens are used by 26%, multifactor OTP tokens by 25%, multifactor software cryptographic tokens by 21%, and multifactor hardware cryptographic tokens by 10%. This implies that many firms may still rely on relatively simple authentication methods rather than stronger assurance tools.

The e-signature results show a similar pattern. Simple electronic signatures are the most common, used by 79% of e-signature users. Advanced electronic signatures are used by 55%, while qualified electronic signatures are used by only 16%. This indicates that many firms are using e-signatures for convenience and process efficiency, but fewer are using higher-assurance forms that may be more important for legal certainty, identity verification and cross-border recognition.



2.3 Participation in cross-border digital trade

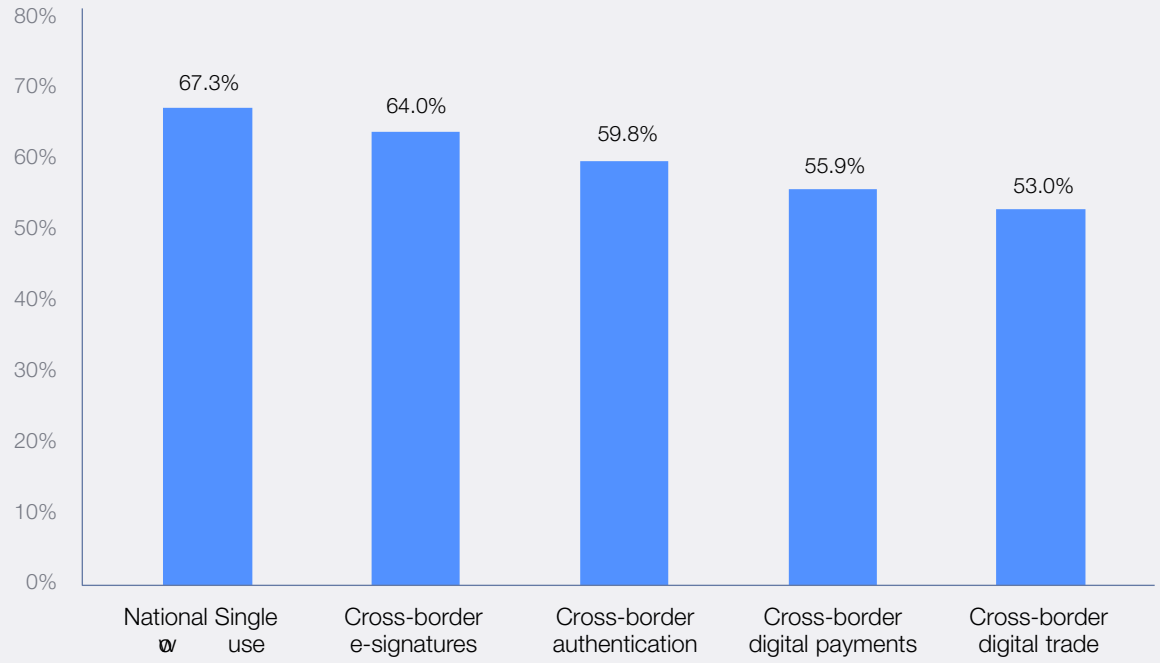
Cross-border participation is emerging, but remains relatively low and uneven

The core success indicator of ASEAN digital economy integration is not whether firms use digital tools domestically, but whether they can use those tools to participate in cross-border markets. The survey captures this by asking whether firms engage in cross-border transactions that are digitally ordered, digitally facilitated or digitally delivered, and whether they use supporting systems such as the National Single ow, cross-border digital payments, electronic authentication and e-signatures.

The results show that cross-border digital participation is already meaningful but not yet universal and remains uneven across different transaction activities. Just over half of surveyed firms, 53%, report engaging in cross-border digital trade (Figure 5). This suggests that a substantial number of digitally active ASEAN firms are moving beyond domestic digital adoption into regional digital activity. However, it also means that nearly half of surveyed firms are not yet participating in cross-border digital trade.

The use of cross-border transaction tools is relatively strong: 55.9% report using digital payments for cross-border transactions, 59.8% use electronic authentication for cross-border trade activities, and 64% use e-signatures for cross-border trade. The reported use of the National Single ow is highest, at 67.3%. The results indicate that firms appear to be adopting parts of the cross-border digital transaction ecosystem, but this has not yet translated into broad-based participation in cross-border digital trade.

FIGURE 5 | **Cross-border digital participation among surveyed firms, 2026**



Source: ASEAN digital economy business survey 2026

Digital trade services are used unevenly across the trade process

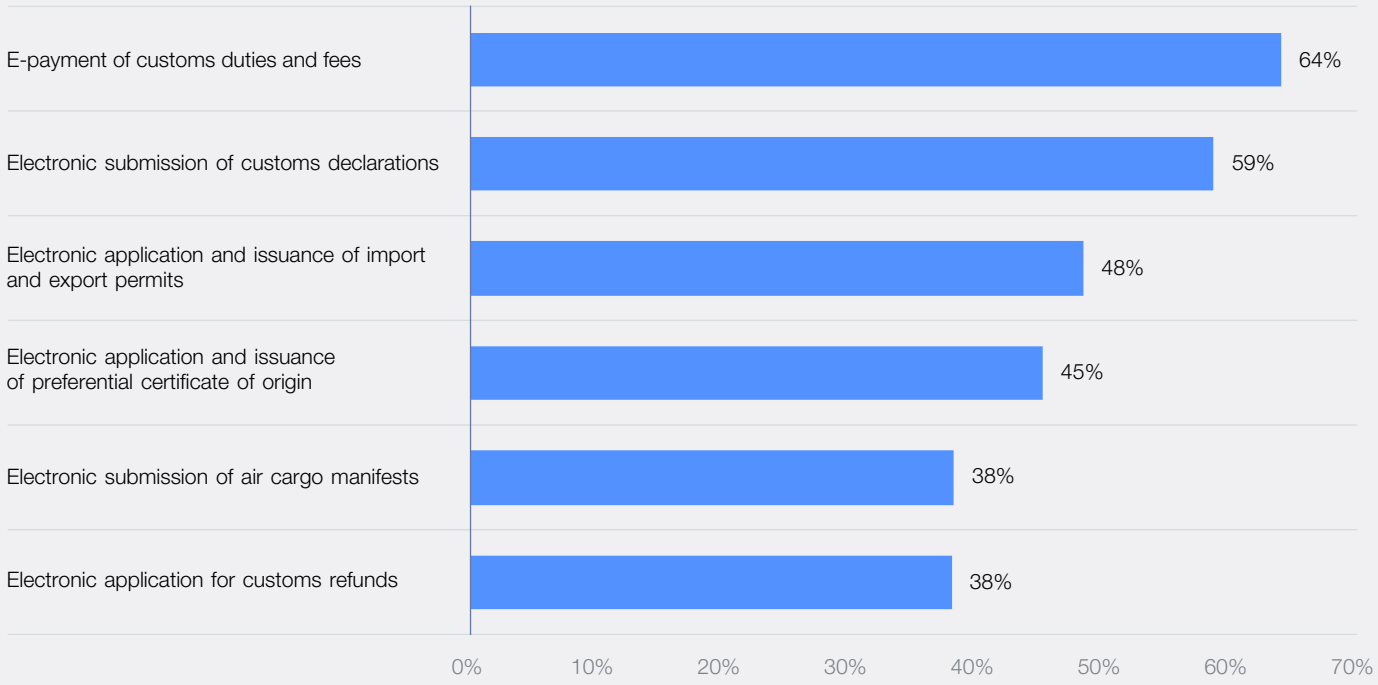
Among firms that engage in cross-border digital trade, customs-related digital services are the most widely used (Figure 6). The most common activity is electronic payment of customs duties and fees, reported by 64% of firms, followed by the electronic submission of customs declarations (59%). These findings suggest that digitalization has advanced progress in customs administration.

The use of more specialized trade facilitation services is comparatively lower. About 48% of firms use electronic systems to apply for import and export permits, while 45% obtain certificates of origin electronically. The use is lower still for the electronic submission of air cargo manifests and electronic applications for customs refunds, each reported by 38% of firms. These services are often relevant only to specific types of traders, products or logistics operations, which may partly explain their lower usage.



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FIGURE 6 | **Services used by firms for cross-border digital trade activities, 2026**



Source: ASEAN digital economy business survey 2026

Note: Percentages refer to firms engaging in cross-border digital trade activities and selecting each service used. Multiple responses were allowed, so shares do not total 100.

Firm-size gaps widen at the cross-border stage

The results disaggregated by firm size show that the cross-border digital participation gaps become more visible. Large firms report higher participation than MSMEs across nearly all cross-border indicators. The largest gap is in cross-border digital payments, with 83.2% of large firms reporting using digital payments for cross-border transactions, compared with 51.6% of MSMEs (Table 8).

Large firms also report substantially higher use of cross-border authentication and cross-border e-signatures, with gaps of 24.5 and 25.1 percentage points, respectively. These tools are important because cross-border digital trade depends not only on payment capability but also on trust, identity verification, legal certainty and confidence in electronic documents. The gap in cross-border digital trade itself is also substantial: 73.4% of large firms report engaging in cross-border digital trade, compared with 49.9% of MSMEs. The significant gaps suggest that larger firms may be better equipped to navigate the technical, legal and compliance requirements associated with cross-border digital transactions.

The exception is National Single ow use, where the gap is only 1.2 percentage points. This should be interpreted cautiously. Similar use rates do not necessarily mean that firms experience the system in the same way. MSMEs may still face greater challenges in understanding procedures, meeting documentation requirements or using the system efficiently. These barriers are explored in greater detail in section 3.

TABLE 8 | **Cross-border digital participation by firm size, 2026**

Cross-border activity	MSMEs (≤300 employees)	Large firms (>300 employees)	Large firm–MSME gap (pp)
National Single ow use	66.9%	68.1%	+1.2
Cross-border e-signatures	60.1%	85.2%	+25.1
Cross-border authentication	56.0%	80.5%	+24.5
Cross-border digital payments	51.6%	83.2%	+31.6
Cross-border digital trade	49.9%	73.4%	+23.5

Source: ASEAN digital economy business survey 2026

Note: The large-firm gap is calculated as the large-firm share minus the MSME share.



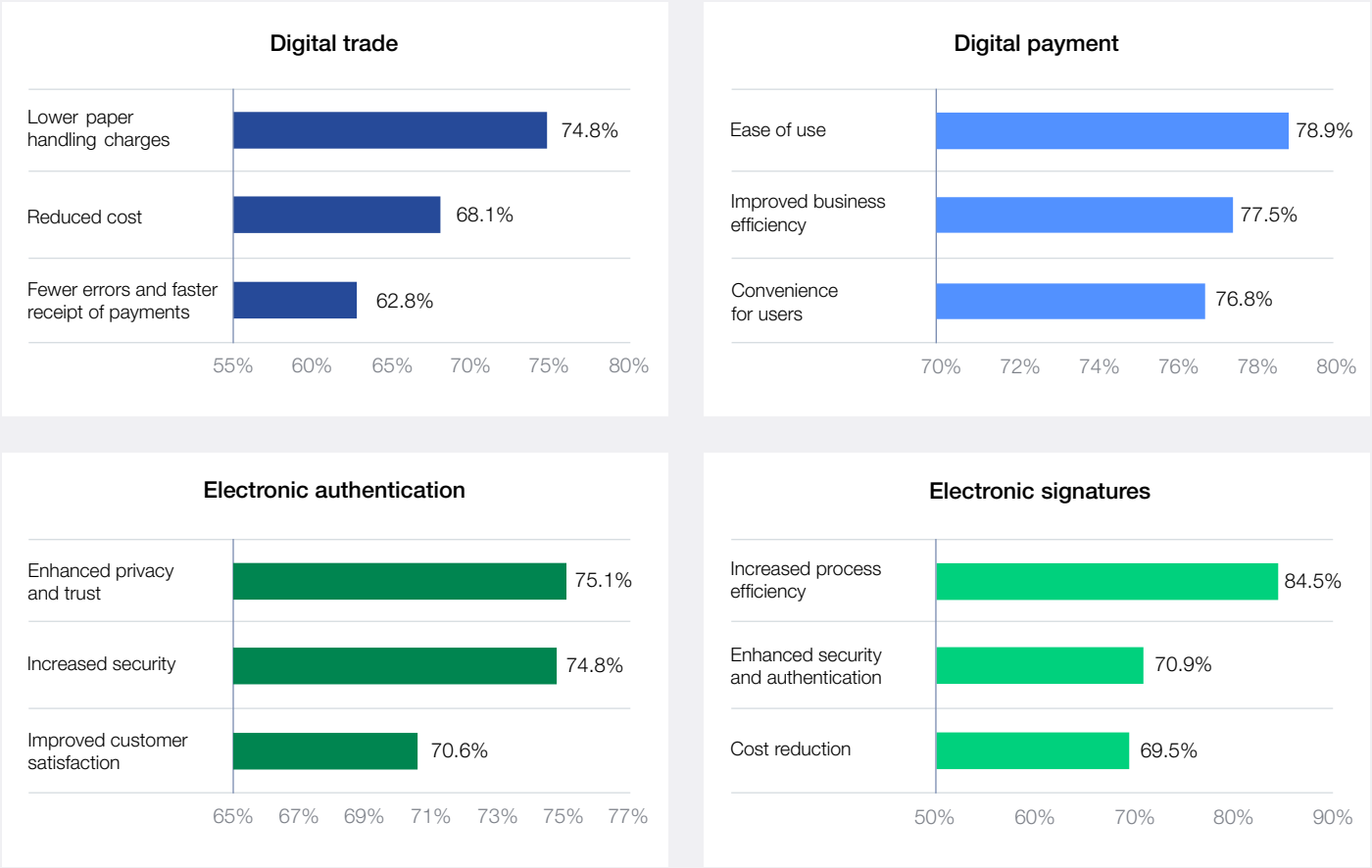
2.4 Benefits perceived by firms

Firms adopt digital tools when they create clear business value. The survey asks firms about the perceived benefits of four digital tools or activities: digital trade, digital payments, electronic authentication and electronic signatures. These responses help us to understand why they find them useful.

For digital trade, the main benefits are lower paper-handling charges (74.8%), reduced costs (68.1%) and fewer errors and faster receipt of payments (62.8%) (Figure 7). This suggests that firms see digital trade as a means to reduce administrative frictions and make cross-border transactions more efficient. For digital payments, the strongest benefits are ease of use (78.9%), followed by improved business efficiency (77.5%) and convenience for consumers and businesses (76.8%). In broader terms, firm use digital payments because they simplify everyday commercial activity.

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FIGURE 7 | **Top three business benefits of digital tools, 2026**



Source: ASEAN digital economy business survey 2026

For electronic authentication, the benefits are more closely linked to trust. Firms identify enhanced privacy and trust in digital communications and transactions (75.1%) and increased security (74.8%) as the leading benefits, followed by improved customer satisfaction (70.6%). This reinforces the idea that authentication is part of the trust infrastructure of the digital economy.

For electronic signatures, the strongest perceived benefit is increased process efficiency (84.5%), followed by enhanced security and authentication (70.9%) and cost reduction (69.5%). This implies that firms value e-signatures not only as a legal or compliance tool but also as a practical way to reduce delays and make business processes faster.

Across the different digital tools, firms consistently report improvements in efficiency, cost savings, trust, security and business processes. These perceived benefits demonstrate that digital technologies are becoming an integral part of modern business operations and provide a strong economic rationale for policies that promote wider adoption and deeper participation in cross-border digital trade.

2.5 Awareness and preparedness for the ASEAN DEFA

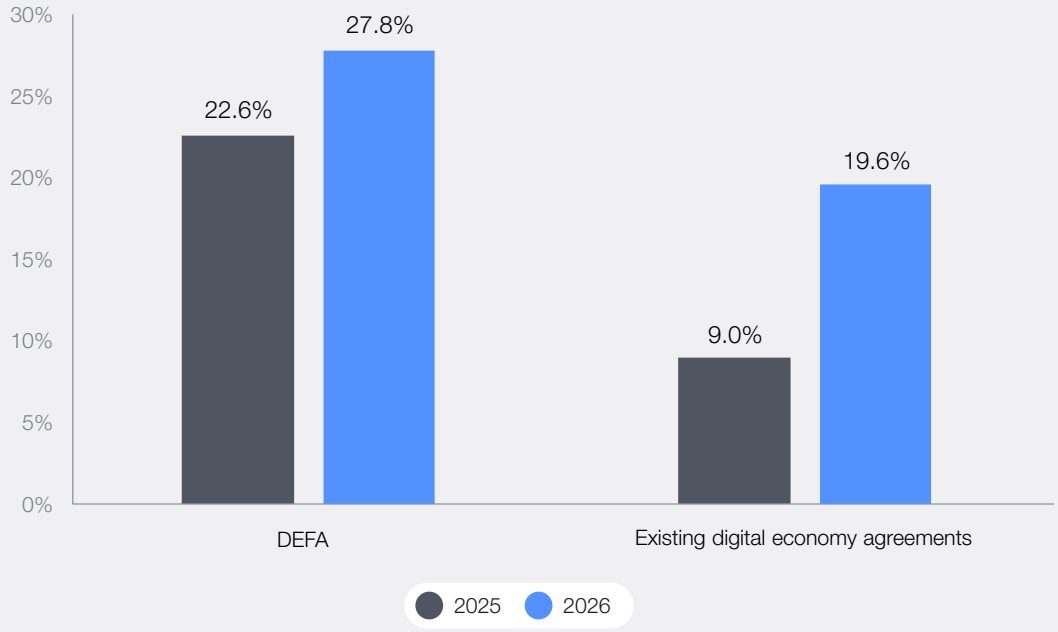
The ASEAN DEFA is the central policy anchor for ASEAN's next phase of digital economy integration. Its practical impact will depend primarily on whether firms understand its relevance and whether implementation addresses the digital economy issues that matter most to business. The survey asks firms whether they have heard of the ASEAN DEFA, how they rank the proposed ASEAN DEFA elements, whether they are aware of existing digital economy agreements, and whether such agreements have benefited their transactions in the digital economy.

Policy awareness is rising, but remains at an early stage

Awareness of regional digital economy policy frameworks is increasing, although it remains limited among firms. Between 2025 and 2026, the share of firms that had heard of the ASEAN DEFA rose from 22.6% to 27.8%, suggesting that the ASEAN DEFA is gradually becoming more visible to the business community (Figure 8). Awareness of existing digital economy agreements also increased substantially, from 9% to 19.6%, which indicates growing business exposure to digital trade and digital economy policy frameworks.

This trend suggests that digital economy agreements are becoming more visible to firms. The increase in awareness of existing agreements is particularly notable, more than doubling between the two survey rounds. However, the overall levels remain modest. Even in 2026, fewer than one-third of surveyed firms report awareness of the ASEAN DEFA, and fewer than one-fifth report awareness of existing digital economy agreements.

FIGURE 8 **Awareness of the ASEAN DEFA and existing digital economy agreements, 2025–2026**



Source: ASEAN digital economy business survey 2025 and 2026

It is important to interpret these findings in the context of the ASEAN DEFA's stage of development. At the time of the survey, the ASEAN DEFA was presented as a regional initiative under negotiation, launched in 2023, with the objective of accelerating digital trade, enhancing interoperability, promoting a safe online environment and increasing MSME participation. Consequently, the relatively low level of business awareness is not unexpected. However, as ASEAN DEFA negotiations are now concluded, attention moves to its implementation, hence business awareness and engagement will become more and more important. Firms will need practical guidance on how the ASEAN DEFA can facilitate digital trade, support cross-border transactions, enable interoperable digital payments and e-invoicing, strengthen digital identity and authentication, and provide a more secure and predictable environment for cross-border data flows and digital business.

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Business priorities for the ASEAN DEFA centre on digital trade, trust and transaction efficiency

The survey asks ASEAN DEFA-aware firms to rank nine proposed ASEAN DEFA elements: digital trade; cross-border e-commerce; payments and e-invoicing; digital ID and authentication; online safety and cybersecurity; cross-border data flows and protection; competition policy; talent mobility and cooperation; and cooperation on emerging topics.

Digital trade emerges as the highest business priority for the ASEAN DEFA. Among firms that are aware of the agreement, 66.4% rank digital trade among their top three priorities, while 29.6% identify it as the single most important element (Figure 9). The prominence of digital trade in firms' priorities suggests that businesses expect the ASEAN DEFA to play a practical role in facilitating cross-border transactions, reducing trade frictions and enabling greater participation in the regional digital economy.

The second-highest priority is online safety and cybersecurity, with 51% of ASEAN DEFA-aware firms ranking it among their top three priorities and 15.2% ranking it first. This means businesses view digital economy integration as more than a means of expanding market access. Firms also place a high value on a secure and trusted digital environment, recognizing that cybersecurity and online safety are fundamental to building confidence in cross-border digital transactions.

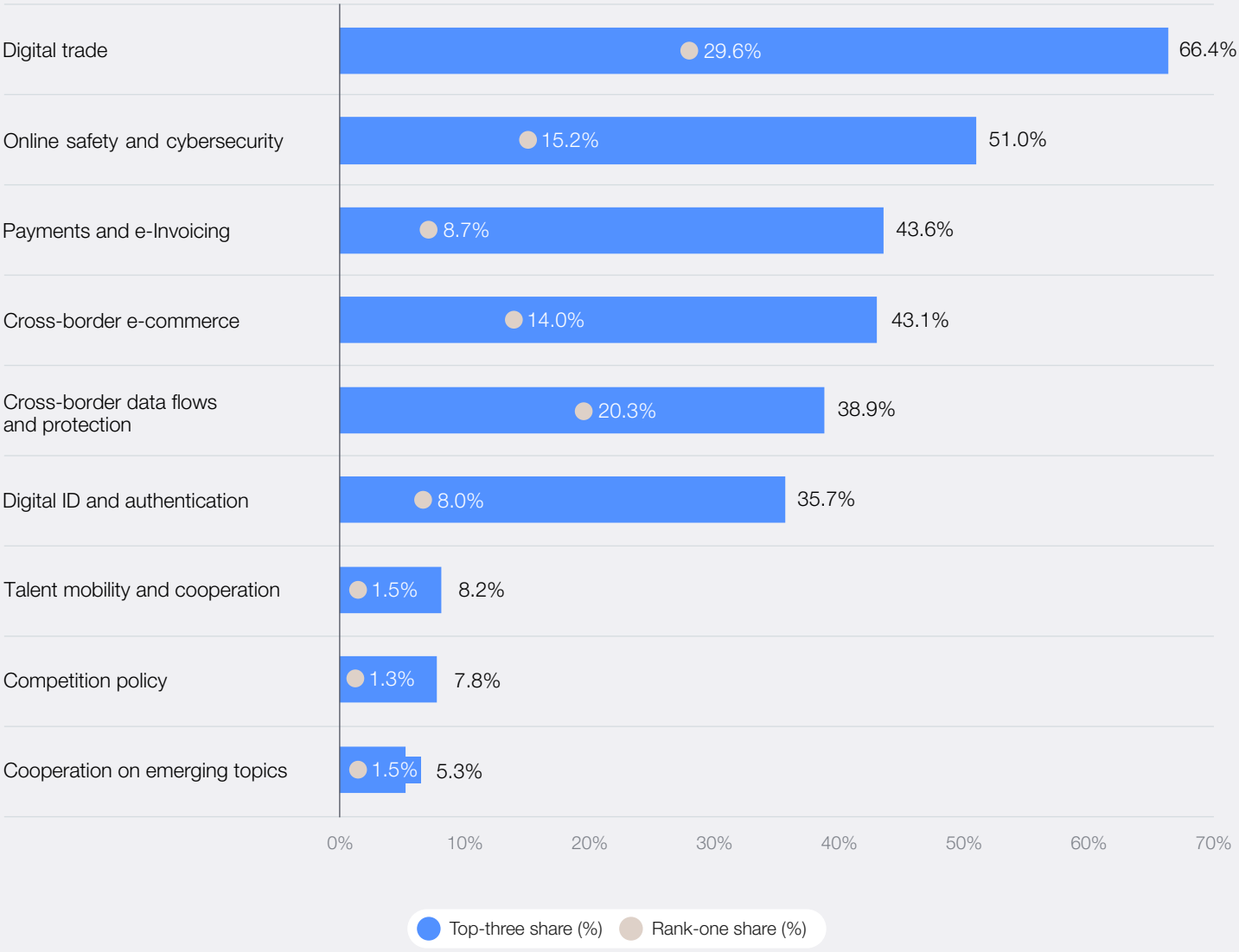
A third set of priorities centres on improving the efficiency of cross-border transactions and expanding market opportunities. Payments and e-invoicing are ranked among the top three priorities by 43.6% of firms, closely followed by cross-border e-commerce (43.1%). Many businesses expect the ASEAN DEFA to deliver practical solutions that facilitate digital transactions across borders, including more efficient payment and invoicing systems, easier access to regional customers and suppliers, and reduced administrative and regulatory frictions in digital commerce.

Cross-border data flows and protection is ranked in the top three by 38.9% of firms, but it has the second-highest rank-one share at 20.3%. By contrast, digital ID and authentication is ranked among the top three priorities by 35.7% of firms, while only 8% rank it as their highest priority. This suggests that firms recognize digital identity and authentication as important enablers of trusted digital transactions but view them primarily as supporting infrastructure rather than immediate business priorities. Talent mobility and cooperation, competition policy and cooperation on emerging topics receive comparatively lower rankings, with fewer than one in 10 firms placing each among their top three priorities.

Overall, firms place the greatest emphasis on digital trade, online safety and cybersecurity, payments and e-invoicing, cross-border e-commerce and cross-border data flows and protection because these areas can directly influence the efficiency, security and predictability of digital transactions. While lower-ranked elements remain important for strengthening ASEAN's long-term digital economy, the immediate business value of the ASEAN DEFA is likely to come from measures that make cross-border digital transactions simpler, safer, more trusted and more interoperable.



FIGURE 9 | **ASEAN DEFA elements ranked as business priorities, 2026**



Source: ASEAN digital economy business survey 2026

In summary, ASEAN firms are increasingly prepared to participate in the digital economy. Awareness and adoption of digital technologies are high, and firms recognize clear commercial benefits from their use. However, participation in cross-border digital trade remains low, especially among MSMEs.

While businesses view the ASEAN DEFA as an important mechanism for reducing cross-border frictions, effective implementation will be needed to translate digital adoption into deeper regional digital participation. Section 3 examines the barriers that continue to constrain this transition.

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3 Barriers and constraints

The main barriers to ASEAN digital economy integration are increasingly about usability and trust rather than basic access.



3.1 Barriers to digital participation

The barrier evidence in Figure 10 shows that firms face a layered set of constraints when moving from digital adoption to deeper digital participation. These constraints concern whether digital tools are commercially useful, easy to understand, affordable, trusted, legally certain and interoperable across borders.

The first layer is the business case for adoption. For digital trade and digital payments, the most frequently reported barriers relate to business demand and transaction volume. Specifically, low volume of operations (67%) is the leading constraint preventing firms from applying digital tools in cross-border trade, while low transaction volume (59%) and limited consumer demand (56%) are the main reasons for not using digital payments.

The second layer is knowledge, access and usability. For digital trade, 50% of firms that do not use digital tools in cross-border trade cite lack of information on paperless trade platforms, while 53% cite lack of internet access. For electronic authentication, 54% of non-users cite lack of understanding, 54% cite lack of appropriate solutions, 50% cite the complexity of multiple passwords and 42% cite the inconvenience of physical authentication tokens. The results suggest that wider adoption will depend not only on technology availability but also on improving business awareness, digital capabilities and the user experience of trusted digital services.

The third layer is cost and suitability. Among firms not using digital payments, 41% cite service fees or additional costs, while 37% cite high initial set-up or operational costs. For electronic authentication, 40% of non-users cite high initial set-up or operational costs. These results indicate that adoption also depends on whether available tools are affordable and suited to business needs.

The fourth layer is trust, legal certainty and interoperability. Among firms not using digital payments, 45% cite cybersecurity risks and 21% cite mistrust of new solutions. Among firms not using e-signatures, 31% report security concerns, 31% identify verification challenges, 27% cite compliance, 27% cite interoperability across jurisdictions and 25% cite legal validity. The implication from these findings is that firms need confidence that digital tools are secure, legally recognized and accepted across markets.

Overall, the perception from ASEAN firms on barriers clearly indicates the need to build digital systems that are visible, affordable, trusted and usable across jurisdictions. For ASEAN DEFA implementation, this means policy efforts should focus on reducing the frictions that prevent deeper participation: weak business incentives, information gaps, usability problems, costs, cybersecurity concerns, legal uncertainty and cross-border interoperability barriers.

FIGURE 10 | **Main barriers to using digital tools or participating in cross-border digital trade, 2026**

Barrier	Digital trade (not applying)	Digital payments (not using)	Electronic authentication (not using)	Electronic signature (not using)
Low volume of operations/ low transaction volume	67%	59%	–	–
No consumer demand	–	56%	–	–
Lack of internet access/no internet connection	53%	25%	–	–
Lack of access to information on paperless trade platforms	50%		–	–
Lack of appropriate solutions	–	44%	54%	–
High initial set-up/operational costs	–	37%	40%	–
Service fees/additional costs	–	41%	–	–
Cybersecurity risks/security concerns	–	45%	–	31%
Mistrust of new solutions/bias against new solutions	–	21%	15%	–
Lack of protection/certainty from regulatory framework	–	22%	–	–
Lack of understanding of digital authentication	–	–	54%	–
Complexity of multiple passwords	–	–	50%	–
Inconvenience of physical authentication tokens	–	–	42%	–
Bias against new solutions	–	–	15%	–
Legal validity	–	–	–	25%
Compliance	–	–	–	27%
Interoperability across different jurisdictions	–	–	–	27%
Ensuring identity verification	–	–	–	31%
Storing and archiving of documents	–	–	–	18%
Privacy concerns	–	–	–	21%

Source: ASEAN digital economy business survey 2026

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3.2 MSME gaps and barriers

The nature and intensity of the barriers differ considerably among firms of different sizes and at varied stages of digital maturity. The largest differences relate to knowledge, information and digital capabilities. More than half of MSMEs that do not use electronic authentication cite a lack of understanding of digital authentication (56.8%), compared with only 20.5% of large firms – a gap of 36.3 percentage points (Table 9). MSMEs are also considerably more likely to report lack of internet access for digital trade (54.2% versus 33.9%), lack of information on paperless trade platforms (51.4% versus 37.3%) and the complexity of managing multiple passwords (51.4% versus 33.3%). These patterns illustrate that many MSMEs are still overcoming foundational capability barriers before they can participate fully in digital transactions.

MSMEs also report greater concerns about trust and the cross-border operating environment. Compared with large firms, they are more likely to identify cybersecurity risks (46.1% versus 28.6%), legal validity of electronic signatures (26.4% versus 11.1%), compliance requirements (28.5% versus 11.1%) and interoperability across jurisdictions (28.5% versus 14.8%) as barriers. The interpretation from the findings is that smaller firms face greater uncertainty in navigating the legal, technical and institutional requirements associated with cross-border digital trade.

TABLE 9 **Main barriers to using digital tools or participating in cross-border digital trade by firm size, 2026**

Barrier	Tool	MSMEs	Large firms	Gap (pp)
Lack of understanding of digital authentication	Authentication	56.8%	20.5%	**+36.3**
Lack of appropriate solutions	Authentication	54.5%	41.0%	**+13.5**
No consumer demand	Digital payments	57.1%	31.4%	**+25.7**
Lack of internet access	Digital trade	54.2%	33.9%	**+20.3**
Complexity from multiple passwords	Authentication	51.4%	33.3%	**+18.1**
Compliance	E-signatures	28.5%	11.1%	**+17.4**
Cybersecurity risks	Digital payments	46.1%	28.6%	**+17.5**
Security concerns	E-signatures	31.8%	25.9%	**+5.9**
Legal validity	E-signatures	26.4%	11.1%	**+15.3**
Lack of information on paperless trade platforms	Digital trade	51.4%	37.3%	**+14.1**
Interoperability across jurisdictions	E-signatures	28.5%	14.8%	**+13.7**
Low transaction volume	Digital payments	58.8%	57.1%	**+1.7**
Low volume of operations	Digital trade	66.8%	67.8%	**-1**
High set-up/ operational cost	Digital payments	36.4%	45.7%	**-9.3**
Storing and archiving documents	E-signatures	16.7%	33.3%	**-16.6**

Source: ASEAN digital economy business survey 2026

By contrast, commercial viability appears to constrain firms of all sizes. MSMEs and large firms report broadly similar levels of concern regarding low volume of operations and low transaction volume, suggesting that insufficient business scale limits the incentive to invest in digital technologies regardless of firm size. Interestingly, large firms are more likely to identify high set-up or operational costs for digital payments (45.7% versus 36.4%) and document storage and archiving for electronic signatures (33.3% versus 16.7%) as barriers. This likely reflects the greater complexity of implementing and managing enterprise-scale digital systems, rather than a lack of access or capability.

To make the policy implications clearer, this report groups the barriers into six diagnostic areas:

- Information and capability
- Access and demand
- Usability and solution fit
- Trust and cybersecurity
- Legal certainty and interoperability
- Large-firm-specific operational issues

Such framing helps distinguish between barriers that require awareness and capability support, those that require better infrastructure or market access, and those that require stronger rules, trust and interoperability.

This diagnosis shows that MSME participation cannot be addressed through a single policy intervention. Some barriers are foundational, such as lack of internet access and limited information on paperless trade platforms. Others are capability-related, including lack of understanding of authentication and difficulty managing complex authentication systems. A further group concerns trust and legal certainty, including cybersecurity risks, e-signature validity, compliance and cross-border interoperability. These are precisely the areas in which ASEAN DEFA implementation will need to move beyond high-level commitments and provide practical business-facing support.

The evidence also suggests that MSMEs should not be treated simply as “less digital” versions of large firms. Their constraints are different in nature. MSMEs are more likely to need guidance, simplified processes, affordable solutions and confidence that digital tools will be recognized across borders. Large firms, by contrast, appear more exposed to enterprise-level implementation issues such as payment system costs and document storage. This points to the need for differentiated implementation support: simplified and accessible pathways for MSMEs and interoperable, scalable systems for larger firms.

TABLE 10 **MSME barrier diagnosis**

Barrier area	Evidence from the survey	Interpretation for MSME participation
Information and capability gaps	Lack of understanding of authentication: MSMEs 57%, large firms 21%; lack of information on paperless trade platforms: MSMEs 51%, large firms 37%	MSMEs appear more constrained by knowledge, guidance and internal capability
Access and demand constraints	Lack of internet access for digital trade: MSMEs 54%, large firms 34%; no consumer demand for digital payments: MSMEs 57%, large firms 31%	MSMEs may face weaker digital demand conditions and less reliable access to enabling infrastructure
Usability and solution-fit barriers	Lack of appropriate authentication solutions: MSMEs 55%, large firms 41%; multiple passwords: MSMEs 51%, large firms 33%	Available solutions may be too complex or poorly matched to smaller firms’ business processes
Trust and cybersecurity concerns	Cybersecurity risks in digital payments: MSMEs 46%, large firms 29%; e-signature security concerns: MSMEs 32%, large firms 26%	Trust risks appear more binding for MSMEs, which may have weaker cyber-risk management capacity
Legal certainty and interoperability	E-signature compliance: MSMEs 29%, large firms 11%; legal validity: MSMEs 26%, large firms 11%; interoperability across jurisdictions: MSMEs 29%, large firms 15%	MSMEs may face greater uncertainty on recognition, compliance and cross-border legal reliability
Large firm-specific operational issues	Payment set-up/operational cost: MSMEs 36%, large firms 46%; document storage/archiving: MSMEs 17%, large firms 33%	Some barriers are more salient for large firms, likely reflecting more complex systems, higher compliance exposure and larger document-management needs

Source: ASEAN digital economy business survey 2026

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3.3 Challenges faced by firms using digital technologies

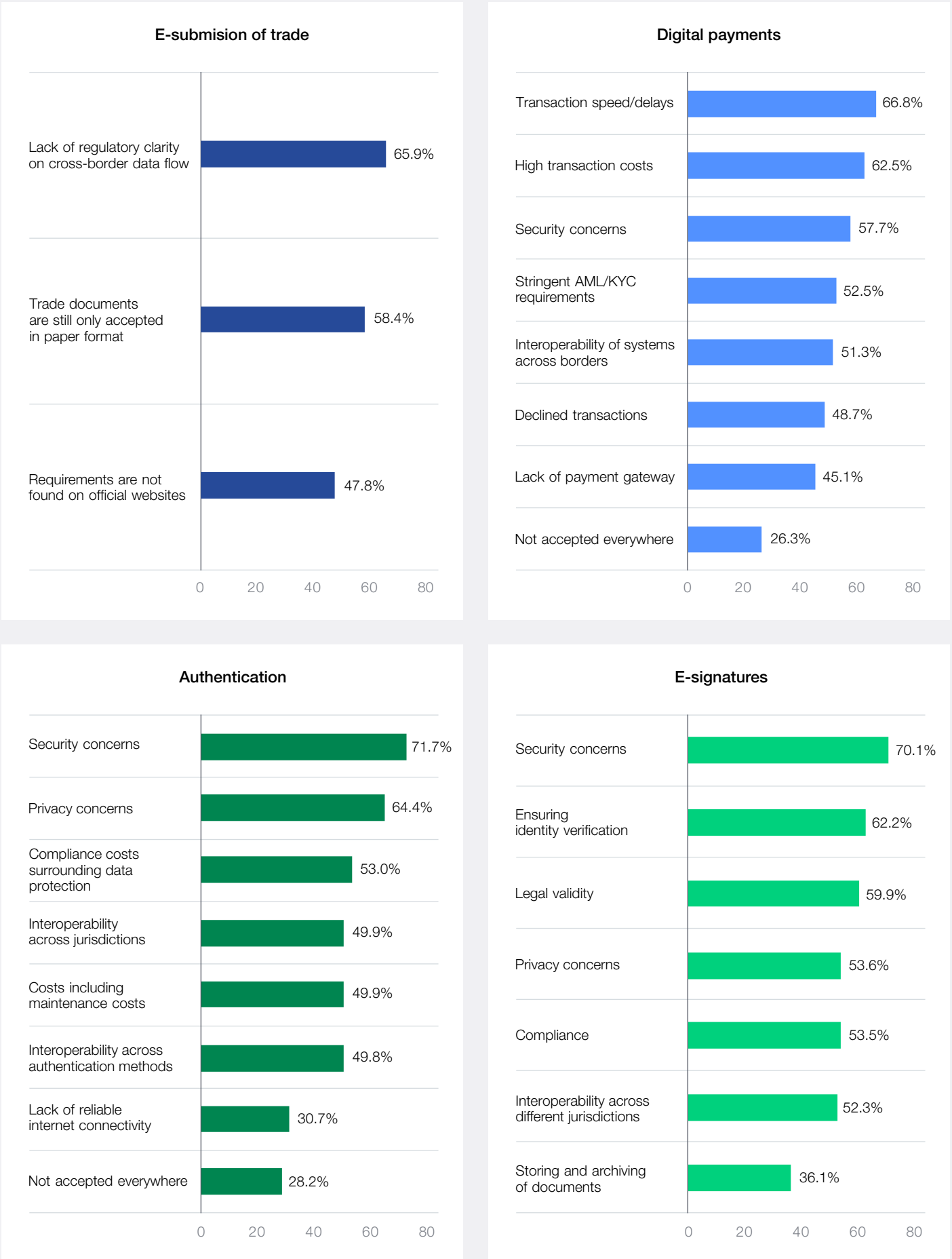
Firms that already use digital tools continue to face significant challenges. For e-submission of trade documents, the main challenges are regulatory and procedural: 66% of firms report a lack of regulatory clarity on cross-border data flows, while 58% say trade documents are still accepted only in paper format (Figure 11). A further 48% report that requirements are not found on official websites. This is important because digital submission systems may exist, but firms still face paper-based requirements, incomplete procedural transparency and uncertainty over how digital trade data can be used across borders.

For digital payments, the challenges are mainly operational and cost-related. Specifically, 67% of firms report transaction delays, while 63% cite high transaction costs. Security concerns are also significant at 58%, followed by stringent anti-money laundering/know your customer (AML/KYC) requirements at 53% and weak cross-border interoperability at 51%. So digital payment frictions that affect speed, cost, compliance and reliability remain significant issues.

For authentication and e-signatures, the dominant issues relate to trust, recognition and legal certainty. Security concerns are the most frequently cited challenge for both authentication (72%) and e-signatures (70%). Privacy concerns are also high for authentication (64%), while firms using e-signatures report concerns over identity verification (62%) and legal validity (60%).

One important policy implication from these findings is that adoption is not enough. Firms that already use digital tools need those tools to work across borders in ways that are secure, interoperable, affordable and legally reliable. This reinforces the importance of ASEAN DEFA implementation in areas such as digital trade, cybersecurity, digital payments, data flows, digital identity, e-signatures and interoperability.

FIGURE 11 | **Challenges faced by firms using digital tools in cross-border trade**



Source: ASEAN digital economy business survey 2026

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4 Policy priorities for ASEAN DEFA implementation and deeper digital integration

ASEAN's next digital economy challenge is not building systems, but making them trusted, interoperable and usable by firms.



4.1 From digital readiness to deeper digital participation

ASEAN has established strong digital foundations, and firms are increasingly adopting digital technologies in their business operations. However, digital readiness does not automatically translate into deeper cross-border digital participation. The next phase of ASEAN's digital economy agenda is therefore less about expanding digital systems and more about ensuring that they are trusted, interoperable and usable across borders.

A macro-level analysis shows that ASEAN performs above the global average in connectivity, digital trade facilitation and cybersecurity, but continues to lag behind digitally advanced economies in areas such as digital payments, regulatory openness, innovation and digital trade logistics. At the firm level, awareness and adoption of digital technologies are high, and businesses report clear commercial benefits from using them. Yet participation narrows as firms move from domestic digital adoption to cross-border digital trade, particularly among MSMEs.

This report also shows that the remaining barriers have shifted. Rather than access to technology alone, firms increasingly face challenges related to commercial viability, digital capabilities, trust, legal certainty and cross-border interoperability. At the same time, firms already using digital technologies continue to face implementation challenges such as transaction costs, cybersecurity, regulatory uncertainty and fragmented digital systems.

As ASEAN moves into ASEAN DEFA implementation, the priority is to convert digital readiness into deeper regional participation. The following sections translate the report's evidence into practical policy priorities that strengthen trusted digital transactions, improve interoperability, reduce business frictions and support more inclusive participation in ASEAN's digital economy.

4.2 Policy Priority 1: Accelerate trusted, end-to-end digital trade

Accelerating digital trade should be the first implementation priority for the ASEAN DEFA because it is where macro readiness, business demand and implementation barriers converge most clearly. ASEAN's largest comparator gap in the ADII is in digital trade and logistics, while firms rank digital trade as the highest ASEAN DEFA priority, with 66.4% placing it among their top three priorities and 29.6% ranking it first. This clearly show that businesses see digital trade as the area where the ASEAN DEFA can deliver the greatest immediate commercial value.

The survey also shows that firms are already using key digital trade services, particularly e-payment of customs duties (64%) and electronic customs declarations (59%), but adoption is lower for permits, certificates of origin and other specialized trade procedures. Firms also continue to face significant implementation challenges. Among users of electronic trade documents, 66% report regulatory uncertainty over cross-border data flows, 58% cite continued paper-based document requirements and 48% report difficulty accessing official guidance. Firms that have not adopted digital trade tools identify low business volume, limited internet access and lack of information on paperless trade platforms as the main barriers. Together, these findings suggest that the remaining constraints are about **interoperability**, **regulatory certainty** and **business usability**.

For ASEAN DEFA implementation, the priority should be to **move from partial digitalization to end-to-end digital trade**. This requires strengthening the cross-border recognition of electronic trade documents, treating National Single ows as regional interoperability infrastructure, providing practical business guidance on digital trade procedures and designing implementation that reflects the needs of MSMEs and lower-volume traders.

TABLE 11 **Recommended action for Policy Priority 1**

Action area	What ASEAN and AMS could do	Why it matters
Recognize electronic trade documents	Promote acceptance of e-documents for customs declarations, permits, certificates of origin and logistics documents across agencies and borders	Firms will not benefit fully from digital trade if electronic documents are still converted back into paper
Strengthen National Single ow (NSW) interoperability	Improve data exchange, procedural alignment and system-to-system connectivity among NSWs	NSWs should function as regional trade infrastructure, not only as domestic portals
Improve transparency of digital trade procedures	Publish clear official guidance on digital procedures, document requirements, accepted formats and relevant data-flow rules	Lack of official information remains a practical barrier to adoption
Clarify cross-border data rules for trade processes	Provide guidance on how trade-related data can be exchanged, stored and used across borders	Regulatory uncertainty on data flows is the most cited challenge among firms using e-submission
Support MSME use of digital trade systems	Develop simple guides, helpdesks, training and low-friction onboarding for smaller and lower-volume traders	MSMEs face stronger information, capability and scale constraints
Pilot end-to-end digital trade corridors	Test fully digital trade processes for selected products, sectors or corridors before scaling regionally	Pilots can demonstrate commercial value and reveal implementation bottlenecks

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4.3 Policy Priority 2: Build trusted digital transaction ecosystems

Developing trusted digital payments should be the second implementation priority for the ASEAN DEFA because these payments form the transaction layer of cross-border digital trade. At the macro level, ASEAN remains well below the digitally advanced comparator group in digital payment readiness, and payment adoption varies widely across Member States. Payments and e-invoicing are also among the highest-ranked ASEAN DEFA priorities, with 43.6% of ASEAN DEFA-aware firms placing them among their top three priorities. For businesses, they view efficient payment systems as essential to expanding cross-border digital commerce.

Evidence also shows that cross-border payment use remains much lower among ASEAN firms. Firms already using cross-border digital payments continue to report significant implementation challenges, including transaction delays, high transaction costs, security concerns, very strict AML/KYC requirements and interoperability problems. These findings suggest that the remaining challenge is not payment adoption, but payment performance across borders.

The priority should be to make cross-border payments and e-invoicing interoperable, transparent, secure and MSME-friendly. This requires strengthening interoperability among domestic payment systems, integrating e-invoicing more closely with digital trade processes, reducing unnecessary compliance frictions while maintaining appropriate safeguards and providing MSMEs with practical guidance on payment options, costs, settlement processes and cybersecurity risks.

TABLE 12 **Recommended action for Policy Priority 2**

Action area	What ASEAN and AMS could do	Why it matters
Strengthen cross-border payment interoperability	Promote interoperability among domestic fast payment systems, QR payment systems and other digital payment infrastructure	Digital payment adoption will not support regional trade unless payments can move efficiently across borders
Improve transparency on fees and settlement times	Encourage clearer disclosure of cross-border payment costs, settlement timelines and transaction conditions	Firms, especially MSMEs, need predictable payment costs and timelines to manage cash flow and pricing
Advance e-invoicing as part of the transaction layer	Support common principles, data fields and interoperability for e-invoicing systems, especially where they connect to tax, customs and trade documentation	E-invoicing can reduce administrative costs, support compliance and strengthen trust in cross-border transactions
Streamline risk-based AML/KYC processes	Promote proportionate, risk-based approaches to AML/KYC compliance and explore interoperable digital identity or verification tools	Strong safeguards are essential, but excessive compliance frictions can deter legitimate MSME transactions
Strengthen payment security and fraud prevention	Provide practical guidance on payment fraud, cybersecurity, authentication and dispute resolution for firms	Security concerns remain a major barrier to cross-border payment use
Support MSME payment readiness	Develop MSME-focused guidance on payment options, fees, settlement risks, platform payments and cross-border payment compliance	MSMEs face the largest gap in cross-border digital payment use

4.4 Policy Priority 3: Strengthen trusted digital transaction infrastructure

Strengthening digital trust should be the third implementation priority for the ASEAN DEFA because cross-border digital trade depends on secure systems, recognized identities, valid electronic signatures and confidence in digital transactions. At the macro level, ASEAN performs well against the global cybersecurity benchmark but remains behind the digitally advanced comparator group, with considerable variation among Member States. Also important is that firms rank online safety and cybersecurity as the second-highest ASEAN DEFA priority.

The survey evidence also shows that trust infrastructure remains one of the weakest links in cross-border digital participation. Large firms are significantly more likely than MSMEs to use authentication and e-signatures, particularly in cross-border transactions. Firms that are already using these tools continue to report substantial implementation challenges. Authentication users cite security concerns (72%), privacy concerns (64%), data protection compliance costs (53%) and interoperability challenges (50%). Firms using e-signatures report similar concerns, including security (70%), identity verification (62%), legal validity (60%), compliance (54%) and cross-border interoperability (52%). Businesses are not simply seeking stronger security; they need greater confidence that digital tools will be recognized, accepted and enforceable across ASEAN markets.

The priority should be to strengthen the regional trust infrastructure that underpins digital transactions. This requires promoting common assurance principles for digital identity and authentication, strengthening the mutual recognition of electronic signatures and trust services, providing practical guidance on trusted digital transactions, expanding cybersecurity support, particularly for MSMEs, and fostering stronger public–private trust frameworks involving governments, financial institutions, logistics providers and digital service providers.

TABLE 13 **Recommended action for Policy Priority 3**

Action area	What ASEAN and AMS could do	Why it matters
Strengthen digital identity assurance	Promote common assurance principles, identity verification standards and interoperable authentication methods	Trusted digital identities are the foundation of secure cross-border transactions
Promote mutual recognition of e-signatures	Strengthen legal recognition of electronic signatures and trust services across ASEAN Member States	Firms need confidence that electronically signed documents will be accepted across jurisdictions
Publish business guidance on trusted transactions	Develop practical guidance on authentication, e-signatures, identity verification and electronic document retention	Many firms remain uncertain about how trusted digital tools should be used in practice
Strengthen MSME cybersecurity capability	Develop practical cybersecurity toolkits, awareness programmes and incident guidance for MSMEs	Security concerns remain one of the largest implementation challenges reported by firms
Promote public–private trust frameworks	Strengthen cooperation among governments, financial institutions, logistics providers, platforms and trust-service providers	Trusted digital transactions require consistent expectations across the entire digital ecosystem

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4.5 Policy Priority 4:
Make data governance practical and predictable for firms

Improving cross-border data flows and protection should be the fourth implementation priority for the ASEAN DEFA because these elements underpin digital business across ASEAN markets. Firms rank cross-border data flows and protection among the highest ASEAN DEFA priorities, with 38.9% placing it in their top three priorities and 20.3% ranking it first – the second-highest rank-one share of all ASEAN DEFA elements. This suggests that, while data governance may not affect every business equally, it is a critical issue for firms that rely on cross-border data to deliver digital services.

The survey also shows that uncertainty about data governance remains a practical constraint on digital business. Among firms using electronic trade documents, 66% report a lack of regulatory clarity on cross-border data flows. Firms also identify contractual complexities, compliance with data protection regulations, limited awareness of data-transfer mechanisms and the costs of those mechanisms as key challenges. These findings indicate that firms need more than data protection rules; they need practical guidance on how to transfer data lawfully and comply with different regulatory requirements across ASEAN markets.

The priority should be to make cross-border data governance practical, predictable and business-friendly. This requires translating data-flow rules into practical guidance for businesses, promoting greater awareness and use of mechanisms such as the ASEAN model contractual clauses, simplifying contractual and compliance processes where possible, clarifying local data storage requirements, strengthening cooperation among trade, digital, cybersecurity and data protection authorities, and developing sector-specific guidance that reflects different business needs.

TABLE 14 **Recommended action for Policy Priority 4**

Action area	What ASEAN and AMS could do	Why it matters
Translate data-flow rules into practical business guidance	Provide clear explanations of how firms can manage personal data, transfer data and comply with data protection rules	Firms need practical guidance rather than legal texts alone
Promote ASEAN model contractual clauses and transfer mechanisms	Increase awareness and practical use of ASEAN model contractual clauses and other recognized transfer mechanisms	Many firms remain unfamiliar with the available mechanisms for lawful cross-border data transfers
Simplify contractual and compliance processes	Develop model documentation, templates and practical guidance to reduce contractual complexity and compliance burdens	Contractual complexity and compliance are the two most frequently reported data-transfer challenges
Clarify local data storage requirements	Publish guidance on the scope, exceptions, compliance expectations and cross-border implications of local storage requirements	Greater certainty reduces unnecessary compliance costs and supports cloud-enabled business models
Strengthen regulatory cooperation	Improve coordination among data protection, cybersecurity, trade and digital economy authorities	Trusted regional data flows require coherent regulatory approaches across ASEAN
Develop sector-specific guidance	Prepare practical guidance for sectors such as e-commerce, logistics, finance, professional services and digital platforms	Data governance challenges differ according to business model and industry
Support MSME data compliance	Develop simplified checklists, templates and training on personal data handling and cross-border transfers	MSMEs often lack dedicated legal and compliance capacity

4.6 Policy Priority 5: Support MSMEs in cross-border digital participation

Supporting MSMEs in cross-border digital participation should be the fifth implementation priority for the ASEAN DEFA because the success of ASEAN's digital economy integration will ultimately depend on whether smaller firms can participate confidently in regional digital markets. Throughout this report, MSMEs consistently emerge as the firms least able to convert digital adoption into deeper cross-border participation. The largest participation gap is observed in cross-border digital payments, where 83.2% of large firms report use compared with 51.6% of MSMEs. Similar gaps are evident in electronic authentication, e-signatures and digital trade services, suggesting that MSMEs face greater difficulty moving from domestic digital adoption to regional digital commerce.

The barriers reported by MSMEs explain why these participation gaps persist. Compared with large firms, MSMEs are significantly more likely to report lack of understanding of digital authentication (57% versus 21%), limited internet access for digital trade (54% versus 34%), lack of information on paperless trade platforms (51% versus 37%), cybersecurity concerns (46% versus 29%) and greater uncertainty around legal validity, compliance and cross-border interoperability. In this sense, MSMEs need practical support to understand, trust and use digital systems effectively across borders.

The priority should be to make regional digital integration practical, affordable and usable for MSMEs. This requires translating the ASEAN DEFA into practical business guidance, strengthening digital trade helpdesks and advisory services, building capability in trusted digital transaction tools, promoting affordable and low-friction digital solutions, and working with platforms, payment providers, logistics companies and financial institutions as implementation partners.

TABLE 15 **Recommended action for Policy Priority 5**

Action area	What ASEAN and AMS could do	Why it matters
Develop an "ASEAN DEFA for Business" guidance package	Translate the ASEAN DEFA into practical guidance on digital trade, payments, e-invoicing, authentication, e-signatures and cross-border data transfers	Firms need practical business guidance rather than policy documents alone
Establish MSME digital trade support services	Deliver helpdesks and advisory services through trade promotion agencies, chambers of commerce, platforms, banks and logistics providers	MSMEs require accessible implementation support throughout their digital journey
Build capability in trusted digital tools	Provide practical training on authentication, e-signatures, cybersecurity, data protection and cross-border payments	Capability gaps remain one of the largest constraints on deeper digital participation
Promote affordable and low-friction digital solutions	Encourage simple, scalable and affordable digital services suitable for firms with limited transaction volumes	High implementation costs and complexity disproportionately affect MSMEs
Engage platforms and intermediaries	Work with e-commerce platforms, payment providers, logistics firms and financial institutions as ASEAN DEFA implementation partners	Many MSMEs participate in regional markets through digital intermediaries rather than directly

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Conclusion

ASEAN has made clear progress in building the foundations for a regional digital economy. Connectivity has improved, digital trade systems are developing, firms are using digital tools more widely and the ASEAN DEFA now provides a regional framework for deeper integration. The next agenda is to make these foundations work better for firms across borders.

The main message of this report is that **digital readiness is not the same as digital participation**. Good connectivity, digital infrastructure and enabling regulations create the conditions for digital trade, but they do not automatically make cross-border business easier. Firms participate in the regional digital economy when digital systems are reliable, affordable, legally recognized and practical to use. This is especially important for MSMEs, which often face greater challenges in understanding the rules, using trusted digital tools and navigating cross-border systems.

This is where the implementation gap matters. A firm may use digital payments domestically but still face high costs or delays when receiving payment from another ASEAN market. It may submit documents electronically but still be asked to provide paper copies. It may use e-signatures or authentication tools but remain uncertain whether they will be accepted across jurisdictions. These are the practical frictions that will determine whether ASEAN's digital economy becomes genuinely integrated.

This report proposes five priorities to support that transition:

- End-to-end digital trade
- Interoperable payments and e-invoicing
- Trusted digital identity, authentication and e-signatures
- Practical and predictable data governance
- Stronger support for MSMEs.

These priorities are mutually reinforcing and provide an implementation agenda that aligns regional policy ambitions with the practical needs of businesses.

Monitoring will be critical. It should focus on whether business experience improves. The key indicators should track not only whether rules or systems exist and commitments are implemented but also whether firms actually use them and face fewer barriers over time. Useful measures include the use of electronic documents, the cost and speed of cross-border payments, trust in e-signatures, awareness of data-transfer mechanisms, MSME participation and the decline of reported barriers.

Annex: Survey sampling guidelines

A purposive sampling strategy was employed for the Business Survey on ASEAN's Digital Economy 2024–2026. This approach was intended to ensure that participating firms could provide informed perspectives on the challenges and opportunities associated with the key components of the digital economy identified in the ASEAN E-Commerce Workplan and the ASEAN Digital Economy Framework Agreement (DEFA). The overall target sample was determined with reference to the sample-size framework developed by Krejcie and Morgan (1970),[6] with adjustments to the selected confidence level and margin of error. This process resulted in a target of approximately 1,500 business respondents across the ASEAN Member States. Timor-Leste was incorporated into the geographical coverage of the survey beginning with the 2026 data collection cycle. For the allocation of the total sample across participating countries, the estimated number of micro, small and medium-sized enterprises (MSMEs) in each country was used as a proxy for the underlying business population. Country-level sample sizes were calculated using a 95% confidence level and an 8% margin of error. To strengthen the survey's coverage of firms directly engaged in digital economic activities, an additional sectoral sampling criterion was introduced in the 2025 and 2026 survey rounds. Within the total sample allocated to each country, 15–30 businesses in 2025 and 2026 were purposively selected from sectors classified as "digital economy sectors". This targeted inclusion was designed to ensure that the dataset captured the experiences and perspectives of firms operating directly within digitally enabled or digital-intensive industries.

TABLE A1 **Awareness of digital economy topics by country**

	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Timor-Leste	Viet Nam
Digital payment solutions	85.7%	99.4%	84.8%	95.4%	58.1%	92.1%	93.6%	94.9%	64.7%	65.8%	84.5%
Digital trade	83.4%	94.2%	69.6%	97.4%	59.3%	31.8%	93.6%	91.8%	53.8%	58.4%	82.5%
Electronic transactions	84.0%	85.1%	44.9%	95.4%	57.5%	14.6%	93.6%	89.2%	63.6%	85.9%	83.0%
Authentication	83.4%	96.8%	65.8%	98.7%	57.5%	50.3%	91.9%	92.4%	61.4%	59.1%	83.5%
E-signatures	80.6%	94.8%	85.4%	99.3%	55.7%	30.5%	90.8%	94.3%	63.6%	41.6%	84.0%
DEFA	19.4%	24.0%	9.5%	20.4%	49.1%	7.3%	46.2%	17.7%	4.9%	9.4%	68.0%

< 20%	20%–39%	40%–59%	60%–79%	80%–89%	≥ 90%

Source: ASEAN digital economy business survey 2026

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TABLE A2 | **Awareness of digital economy topics by industry**

Sector group	Payments	Digital trade	E-authentication	E-signatures	DEFA
Agriculture and utilities	68.0%	54.4%	57.6%	47.2%	6.4%
Manufacturing and construction	83.3%	68.1%	67.1%	64.4%	8.3%
Trade, accommodation and food	89.7%	81.1%	83.0%	82.3%	10.8%
ICT, transport and logistics	94.3%	80.0%	83.8%	85.7%	25.7%
Finance and professional services	89.5%	81.0%	86.0%	82.5%	28.5%
Social, education and creative services	88.5%	80.0%	79.6%	83.8%	15.4%
Digital economy sectors	96.9%	91.1%	95.8%	92.2%	24.2%

Source: ASEAN digital economy business survey 2026

TABLE A3 | **Adoption of core digital transaction tools by country, 2026**

	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Timor-Leste	Viet Nam
Digital payments	94.8%	96.7%	99.3%	91.4%	83.3%	100.0%	100.0%	96.0%	86.8%	61.1%	100.0%
Electronic authentication	84.3%	73.2%	64.7%	100.0%	64.8%	86.8%	85.8%	92.1%	51.0%	47.0%	99.4%
Electronic signatures	64.1%	82.4%	56.2%	97.4%	61.1%	45.7%	87.7%	88.1%	35.8%	34.2%	97.6%

< 40%	40%–59%	60%–79%	80%–89%	90%–99%	100%

Source: ASEAN digital economy business survey 2026

TABLE A4 | **Main business benefits of digital tools, 2026**

Business value	Digital trade	Digital payments	Authentication	E-signatures
Improve efficiency	●	●●●	●	●●●
Reduce costs	●●●	●	○	●●
Strengthen security and trust	○	○	●●●	●●
Speed up transactions	●●	○	○	●
Support regulatory compliance	○	○	●●	○

Source: ASEAN digital economy business survey 2026

Note:

●●● = Primary benefit ●● = Secondary benefit ● = Supporting benefit ○ = Not a major reported benefit

TABLE A5 | **Barriers to digital trade by firm size, 2026**

Barrier	All firms	MSMEs	Large firms
Low volume of operations	66.9%	66.8%	67.8%
Lack of internet access	52.7%	54.2%	33.9%
Lack of access to information on paperless trade platforms	50.3%	51.4%	37.3%

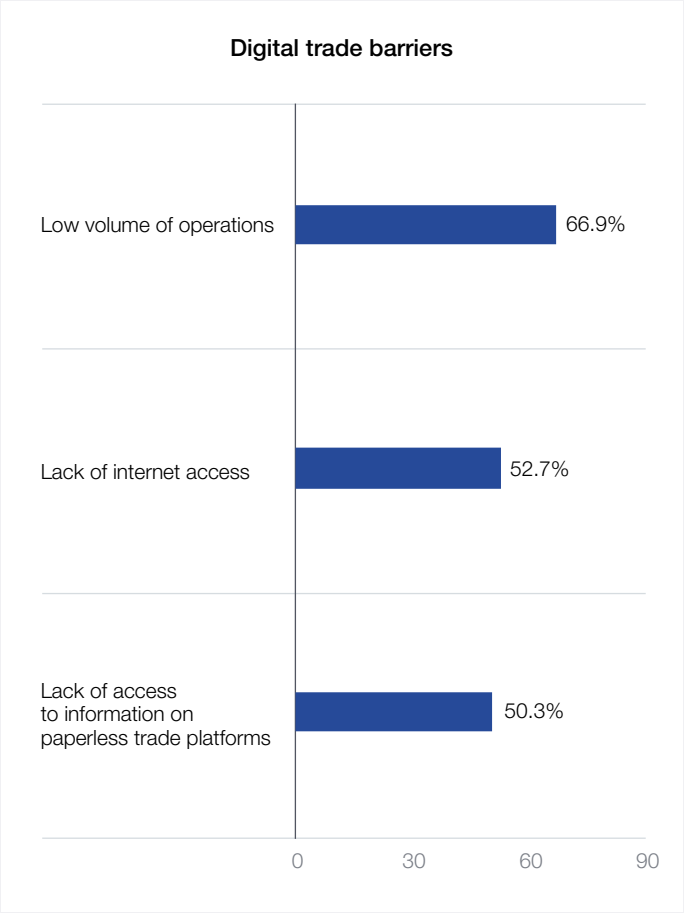
TABLE A6 | **Barriers to digital payments by firm size, 2026**

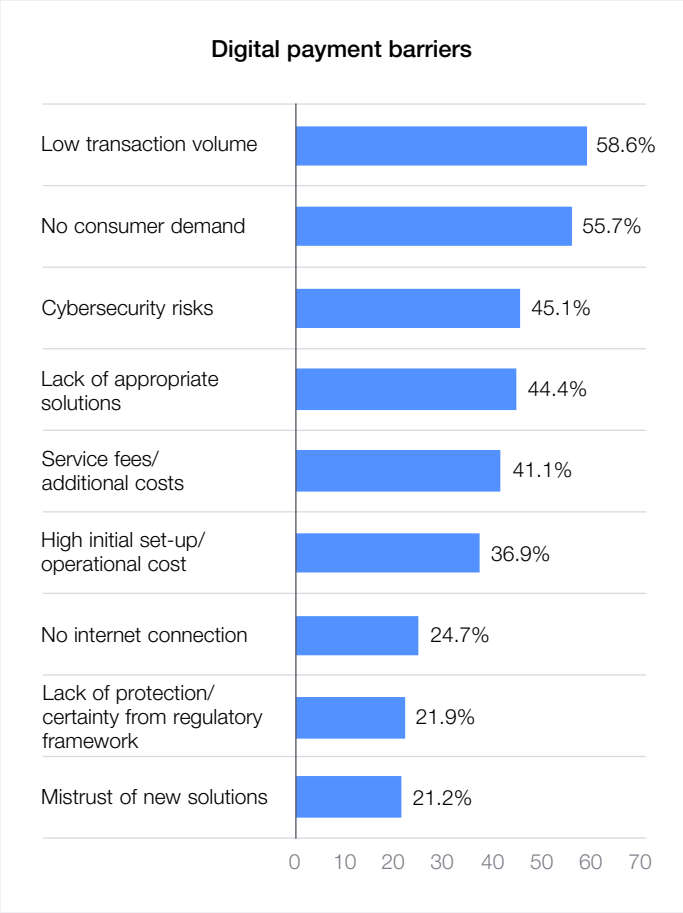
Barrier	All firms	MSMEs	Large firms
Low transaction volume	58.6%	58.8%	57.1%
No consumer demand	55.7%	57.1%	31.4%
Cybersecurity risks	45.1%	46.1%	28.6%
Lack of appropriate solutions	44.4%	45.3%	28.6%
Service fees/additional costs	41.1%	41.3%	37.1%
High initial set-up/ operational cost	36.9%	36.4%	45.7%
No internet connection	24.7%	25.1%	17.1%
Lack of protection/ certainty from regulatory framework	21.9%	22.1%	17.1%
Mistrust of new solutions	21.2%	21.4%	14.3%

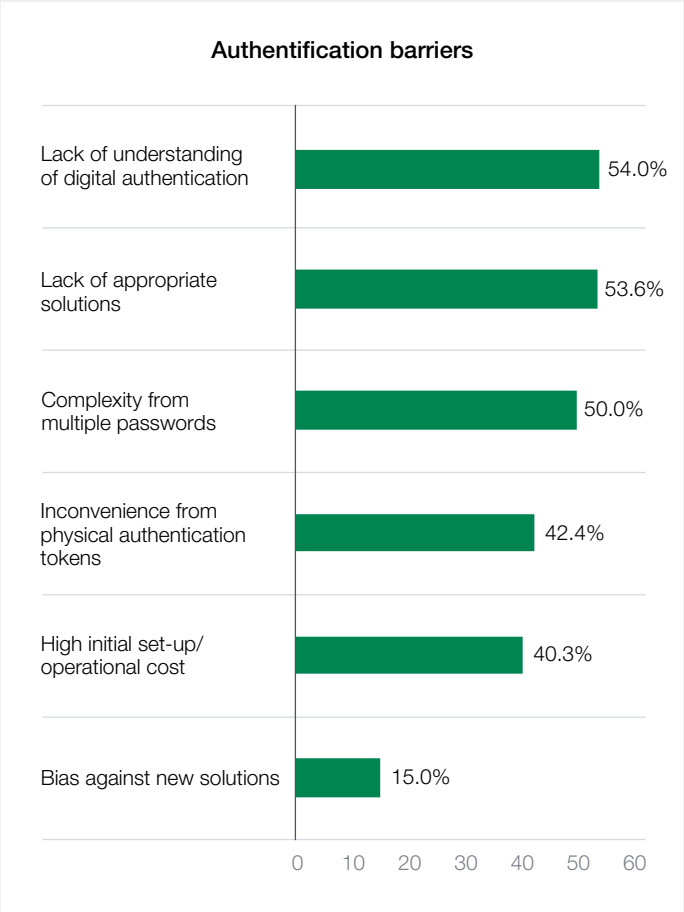
Source: ASEAN digital economy business survey 2026

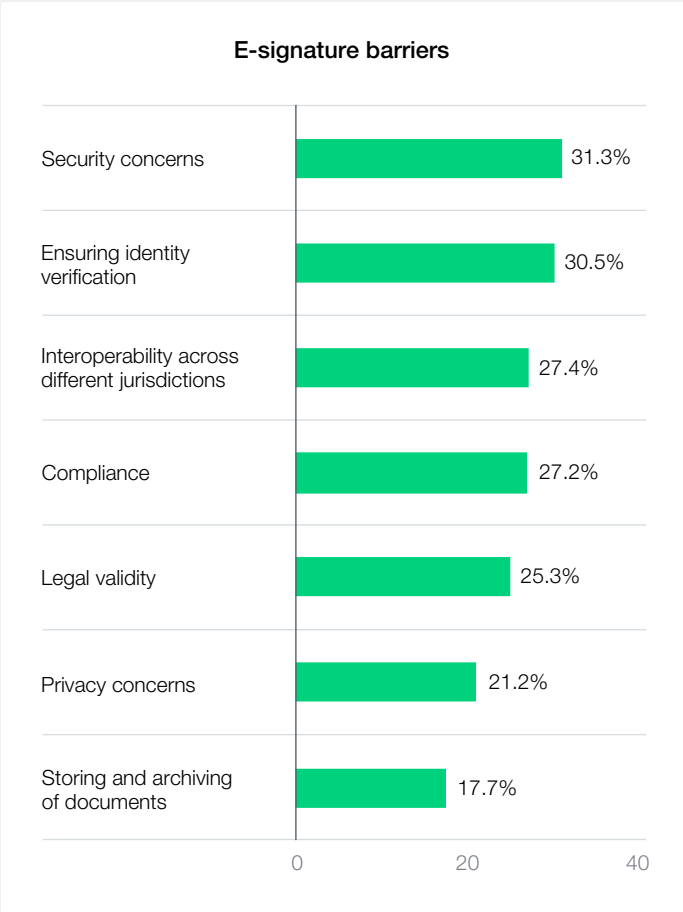
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FIGURE A1 | **Barriers to using digital tools or participating in cross-border digital trade, 2026**









Source: ASEAN digital economy business survey 2026

TABLE A7 | **Barriers to electronic authentication by firm size, 2026**

Barrier	All firms	MSMEs	Large firms
Lack of understanding of digital authentication	54.0%	56.8%	20.5%
Lack of appropriate solutions	53.6%	54.5%	41.0%
Complexity from multiple passwords	50.0%	51.4%	33.3%
Inconvenience from physical authentication tokens	42.4%	42.6%	41.0%
High initial set-up/ operational cost	40.3%	40.2%	43.6%
Bias against new solutions	15.0%	15.4%	10.3%

TABLE A8 | **Barriers to electronic signature by firm size, 2026**

Barrier	All firms	MSMEs	Large firms
Security concerns	31.3%	31.8%	25.9%
Ensuring identity verification	30.5%	31.5%	18.5%
Interoperability across different jurisdictions	27.4%	28.5%	14.8%
Compliance	27.2%	28.5%	11.1%
Legal validity	25.3%	26.4%	11.1%
Privacy concerns	21.2%	22.1%	11.1%
Storing and archiving of documents	17.7%	16.7%	33.3%

Source: ASEAN digital economy business survey 2026

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