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ARTICLES

Customs Training at the Crossroads: Preparing Border Authorities for Risk Governance Through Curriculum Alignment With WCO Professional Standards

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This article examines the alignment of the bachelor program in Customs, trade and border management at the University of Stavanger, Norway, with the World Customs Organization's (WCO) *Professional Standards 2019*, originally launched as the *Professional Standards for Customs Operational and Senior Managers* in 2008. As frontline agencies in national systems of societal safety, managing risks related to illicit trade, customs administrations handle cross-border crime, supply chain disruption and technological vulnerabilities. Therefore, the aim herein is to assess how effectively the program has been preparing graduates for the evolving demands of customs practice. The study adopts a curriculum mapping approach, comparing course content and learning outcomes against the WCO's *Professional Standards 2019*, which is structured according to a knowledge, skills and attitudes (KSA) model. Methodologically, the analysis combines curriculum mapping with a strengths, weaknesses, opportunities and threats (SWOT) framework, allowing for both internal evaluation of program strengths and weaknesses and external assessment of opportunities and threats in the global customs education landscape. Findings indicate that the Norwegian program offers strong training in law, ethics, organisational culture, logistics and other traditional fields, providing students with solid legal and operational foundations reinforced by practical training. However, gaps exist in financial management data-driven customs operations, and customer orientation, while emerging competencies in artificial intelligence, blockchain and cybersecurity remain underdeveloped. The study concludes that reforming the curriculum to integrate digital modernisation and stakeholder-oriented skills would future-proof Norwegian customs education and position it as a model internationally.

1. Introduction

Customs authorities worldwide are facing profound transformation pressures driven by globalisation, digital trade, cyber risks and increasingly AI-enhanced supply chains. Once centred primarily on revenue collection and border enforcement (Lund, 1977; Nicali & Favale, 2004), Customs has become a complex regulatory and security function that requires integration of law, technology, international cooperation and governance (A. G. Grainger, 2007; Heijmann et al., 2020).

From a societal safety perspective, customs administrations play a central role in the governance of cross-border risks. Modern customs authorities must manage a wide spectrum of threats ranging from illicit trade and smuggling to biosecurity risks, cyber-enabled trade fraud and disruptions to global supply chains.

The World Customs Organization (WCO) has responded to these shifts by issuing the *Professional Standards 2019* (the Standards; WCO, 2019), a global benchmark for customs education and professionalisation. These Standards were first developed in the framework of the WCO's Partnership in Customs Academic Research and Development (PICARD) program that was officially launched in 2006. They articulate the knowledge, skills and attitudes (KSA) required for customs professionals to perform effectively in a rapidly evolving environment, emphasising not only technical expertise but also leadership, intercultural competence and adaptability.

Customs education occupies a unique position at the intersection of law, international trade, organisational management and global relations. In this sense, customs education also contributes to the development of institutional capacity for risk governance within complex socio-technical systems of border control (Aven & Renn, 2010; Renn, 2008). As the role of customs officers expands to encompass digital enforcement, risk-based operations and cross-border cooperation, curricula must equip students with a broad set of competencies that extends well beyond technical expertise. Effective programs are therefore expected to not only cultivate operational knowledge, but also shape professional identity by fostering ethical judgement, adaptability, intercultural awareness and not the least by emphasising practical training (Rocha et al., 2025; Ylönen et al., 2026). This focus on technical specialisation and professional integrity highlights the need to align national training systems with internationally recognised standards, such as those articulated by the WCO.

Norway provides a particularly relevant case. The bachelor program in Customs, goods transport and border control at the University of Stavanger, Norway, established in close collaboration with the Norwegian Customs Service (Tolletaten), represents one of the most comprehensive national programs of its kind. It integrates academic instruction with practical training, reflecting Norway's ambition to professionalise Customs through higher education. Yet, as in many jurisdictions, the program faces the challenge of aligning its curriculum with WCO's expectations for Customs worldwide (Organisation for Economic Co-operation and Development (OECD), 2021; WCO, 2022). One reason may be the large variation in prerogatives among different customs services across countries (Kuran, 2022), or perhaps the difficulty of reconciling traditional strengths in law enforcement and ethics with emerging demands for digital modernisation, including competencies in artificial intelligence and cybersecurity. Either way, the tension between continuity and innovation underscores the need for curricula that are both contextually grounded and forward-looking. Programs

must retain their established foundations while systematically integrating new forms of expertise to ensure long-term relevance in an evolving global trade environment.

While the primary empirical focus of this article is the Norwegian bachelor program in Customs, goods handling and border control, the analysis also provides an indirect evaluation of the current status and relevance of the Standards. Although these Standards remain widely referenced as an international benchmark, they have not been substantively updated since 2019 and are no longer supported by an active WCO-led development process. This raises questions about their continued validity as a contemporary standard for customs professionalisation. Applying the Standards to a current education program therefore serves a dual purpose: assessing curriculum alignment while also examining the extent to which an effectively static framework continues to capture the competencies required in modern, risk-based and increasingly digital customs environments. In this sense, the Norwegian case functions as an empirical lens through which both the utility and the limitations of the WCO Standards can be critically assessed against this backdrop. The aim of this paper is to examine how customs education contributes to the development of competencies required for risk governance in modern border management systems. From this perspective, evaluating customs curricula is not merely an educational exercise but an assessment of how effectively border institutions develop the capabilities required to manage cross-border risks affecting societal safety. To this end, the following research questions were posed:

1. How does the Norwegian curriculum align with WCO Standards across knowledge, skills and attitudes (KSA)?
2. Where are the gaps, particularly regarding the WCO's modernisation agenda?
3. What reforms could strengthen the program's readiness for future challenges?

By mapping the Norwegian curriculum against the WCO Standards and supplementing the analysis with a strengths, weaknesses, opportunities and threats (SWOT) evaluation, the study seeks to identify both the achievements and limitations of the innovative Norwegian customs education program while also drawing lessons relevant to the global debate on customs professionalisation.

2. Theory

2.1. WCO Professional Standards (2019): Scope, structure and current status

The WCO *Professional Standards 2019* (WCO, 2019) constitute the most recent formal attempt to define a globally applicable competency framework for customs professionals. Developed within the framework of the PICARD program, launched in 2006, the Standards were designed to support the professionalisation of customs administrations by aligning higher education programs with a common set of expectations regarding knowledge, skills and professional attitudes. In this sense, the Standards function both as an educational benchmark and as a governance instrument aimed at strengthening institutional capacity, integrity and performance within customs administrations.

The Standards are structured around a KSA framework, reflecting an integrated understanding of professional competence. Knowledge encompasses legal frameworks, trade and logistics systems and organisational structures relevant to customs operations. Skills include operational and analytical capacities such as risk assessment, intelligence analysis, leadership and communication. Attitudes refer to professional behaviours, including ethics, integrity, accountability and customer orientation. This tripartite structure provides a coherent basis for evaluating how education programs prepare customs professionals to operate in complex and evolving environments.

In addition, the Standards differentiate between levels of managerial responsibility. In particular, they distinguish between Operational Managers/Leaders (bachelor level) and Strategic Managers/Leaders (master level), indicating that both categories are situated within the managerial track rather than purely operational roles. This distinction is important when applying the framework to undergraduate programs, as it highlights a potential misalignment between the level of education being assessed and the level of responsibility assumed in the Standards.

Despite their continued use as a reference point in customs education, the current status of the Standards requires critical consideration. The Standards have not been substantively updated since the 2019 edition, and there is no clear evidence of an ongoing formal revision process led by the WCO. Furthermore, the institutional context in which the Standards were originally developed has changed. The PICARD Conferences, which historically served as a central platform for collaboration between customs administrations and academia, have been discontinued by the WCO in recent years. Academic collaboration in this field continues but is now largely sustained through independent initiatives such as the International Network of Customs Universities (INCU), rather than through an active WCO-led PICARD process.

This situation raises questions regarding the continued status of the Professional Standards as a contemporary international benchmark. While they retain normative value and continue to provide a useful structural framework for analysing customs education, their lack of recent revision suggests that they should be interpreted with caution, particularly in relation to rapidly evolving domains such as digitalisation, data-driven risk management and cybersecurity. Applying the Standards to a contemporary customs education program therefore serves a dual purpose: it allows for an assessment of curriculum alignment while also enabling a critical evaluation of the extent to which an effectively static framework captures the competencies required in modern customs administrations.

Given these limitations, the present study interprets the Standards in conjunction with broader WCO guidance and relevant national qualification frameworks. This approach preserves the analytical utility of the Standards while mitigating the effects of their temporal lag, allowing the study to assess curriculum alignment without assuming that the Standards fully reflect current operational realities.

2.2. Customs, risk governance and analytical framework

The evaluation of professional education programs rests on the alignment between intended learning outcomes, institutional curricula and international competency frameworks. In the field of customs education, the WCO *Professional Standards for Customs Managers* (WCO, 2019) provides a globally recognised benchmark, specifying the KSA required for effective customs practice.

The underlying motivation for the Standards was to define a baseline competency framework for customs managers and to guide the development of higher education programs seeking WCO recognition. By defining minimum KSA expected of customs managers, the Standards were intended to support capacity building, professional mobility and the development of university-based customs education programs worldwide. In this sense, the Standards function not only as an educational benchmark but also as a governance instrument aimed at strengthening institutional integrity and professionalisation within customs administrations.

The WCO *Professional Standards for Customs Managers* (2019) remains the most recent formal articulation of competency requirements within the PICARD framework, although it has not been substantively updated since 2019. Accordingly, its adoption must be performed with caution, particularly in rapidly evolving domains such as digitalisation, data-driven risk management and cybersecurity.

The KSA framework, originally derived from Bloom's taxonomy (Bloom, 1956), posits that effective professional preparation requires the integration of domain-specific knowledge, operational skills and professional attitudes. It has been applied and validated across multiple professional and educational settings, demonstrating its utility as a framework for assessing competencies, performance and learning outcomes (Bala et al., 2022; Caliskan Pala et

al., 2021; Hardie & Lioce, 2020), which supports its use in this study. The Standards operationalise these dimensions, providing concrete learning outcomes and competency benchmarks for customs managers worldwide. Consequently, KSA provides both a conceptual lens and a practical instrument for evaluating curriculum alignment.

2.3. Customs, risk governance and societal safety

Customs administrations operate at the intersection of trade facilitation and risk governance. Contemporary border management systems increasingly rely on risk-based approaches in which enforcement resources are allocated according to probabilistic assessments of threats within global supply chains. Risk governance scholarship conceptualises such systems as institutional arrangements designed to identify, assess, and manage uncertain threats affecting societal safety (Aven & Renn, 2010; Renn, 2017). Within this perspective, customs authorities function as regulatory actors responsible for managing risks associated with illicit trade, transnational crime, financial fraud and security threats embedded in global logistics networks.

This risk-based orientation is also operationalised in the WCO's *Risk Management Compendium*, which provides a structured framework for identifying, assessing and prioritising risks across the international supply chain, emphasising intelligence-led targeting, selectivity and continuous feedback loops between enforcement outcomes and risk profiling (WCO, 2018). The Compendium reinforces the shift from universal controls towards differentiated interventions based on risk assessment, thereby aligning customs practice with broader principles of risk governance and adaptive regulation in complex socio-technical systems (WCO, 2018).

From this standpoint, customs officer education can be understood as a form of capacity building within national risk management systems. Training programs must therefore equip officers with competencies related not only to legal enforcement but also to risk assessment, intelligence analysis, inter-agency coordination and decision-making under uncertainty (Aven, 2016; Boin et al., 2017). Evaluating customs curricula against international competency frameworks such as the Standards therefore provides insights into how effectively educational systems support the development of risk governance capabilities within border authorities.

Curriculum mapping, the primary analytic approach of this study, is theoretically informed by constructive alignment and competency-based education (Harden, 2001; Thomas et al., 2022). It allows systematic comparison of individual courses and learning outcomes against the KSA outlined in the Standards. By explicitly referencing KSA in this mapping process, the analysis identifies areas where competencies are fully, partially or not covered, highlighting potential gaps as well as bringing forth the strengths of the program. Integrating KSA into both the theoretical and methodological design ensures that the evaluation is conceptually coherent, linking international benchmarks to measurable learning outcomes within the Norwegian bachelor program.

To situate the internal curriculum characteristics within a broader organisational and professional context, SWOT analysis (Helms & Nixon, 2010; Pickton & Wright, 1998) complements the mapping exercise. While mapping assesses alignment with WCO's KSA-based standards, SWOT contextualises these results against technological, institutional and global trends, offering a strategic perspective on curriculum modernisation. This combination of KSA-informed mapping and external contextualisation provides both descriptive and analytical insights, ensuring that recommendations for curriculum enhancement are evidence-based and future-oriented.

The benefit of grounding the study in KSA and linking it directly to the Standards is the development of a framework that establishes a consistent theoretical throughline for the analysis. It allows the study to not only document how the Norwegian curriculum meets international expectations but also interpret gaps and opportunities in terms of the integrated knowledge, skills and professional behaviours that define a modern customs officer.

3. Methods

This study examines the alignment between the customs bachelor curriculum at the University of Stavanger, Norway, and the WCO *Professional Standards 2019*. These Standards were first developed in response to the WCO's PICARD program, which was officially launched in 2006. The aim is to identify strengths and gaps in the Norwegian curriculum and opportunities for its modernisation.

The author of this study is an academic staff member affiliated with the university delivering the program and has been involved in research and teaching related to customs education. The analysis presented here should therefore be understood as an academic curriculum evaluation conducted by a researcher with domain expertise and institutional familiarity, rather than as a formal external accreditation review. To mitigate potential bias associated with internal proximity to the program, the study relies exclusively on publicly available curriculum documentation, institutional reports and the Standards as an external benchmark.

The purpose of the analysis is therefore not institutional auditing, but scholarly examination of how a national customs education program aligns with internationally recognised competency frameworks.

3.1. Context: Bachelor degree in customs, goods handling and border control at the University of Stavanger, Norway

Recruiting the right competence is crucial for Customs to fulfil its tasks and goals. Norwegian Customs (Tolletaten) continuously works with targeted physical and digital profiling measures to strengthen the agency as an attractive workplace and to attract applicants to geographic areas and fields of expertise where recruitment has previously been challenging. The results

Table 1. Overview of the curriculum for the bachelor program in Customs, goods handling and border control at the University of Stavanger, Norway.

Semester	10 ECTS	10 ECTS	10 ECTS	0 ECTS
1st	TOL100 Basic trade, logistics and goods handling	TOL120 Health, safety and environment	TOL130 Customs in an organisational and societal perspective	
2nd	TOL200 Customs and transportation of goods	TOL110 Introduction to customs law and legal method	TOL160 Work and organisational psychology	TOL401 Practice preparatory seminar 1
3rd	TOL210 Administrative law	TOL220 Customs law and related legal topics	TOL280 Practical introduction to Customs, goods movement and border control	TOL402 Practical preparatory seminar 2
4th	TOL260 Security, ICT and emergency preparedness	TOL170 Scientific theory and method	TOL250 Communication and intercultural understanding	TOL403 Practice Preparatory seminar 3
	or 6-month international exchange semester			
5th	TOL380 Practice in the border division			
6th	TOL310 Intelligence and risk assessment	TOLBAC Bachelor thesis in Customs, freight forwarding and border control		

Source: Author.

show that it is easier to recruit competence in critical areas than before, but it is still a challenge to recruit customs-related expertise to certain geographic regions (Tolletaten, 2023, 2024).

To that end, Tolletaten funds the bachelor program in Customs, goods handling and border control at the university examined in this study. Significant effort has been invested to ensure that students apply for positions within the Tolletaten over the entire country after completing their education. Students complete 180 ECTS (European Credit Transfer and Accumulation System) credits over three years (with two semesters per year), distributed across courses covering topics such as basic trade, logistics, goods handling, Health, Safety, and Environment (HSE), legal frameworks, organisational theory, conflict management, intercultural communication and practical training. Operative customs officers are also integrated in the program as guest lecturers across various subjects. Table 1 presents an overview of the curriculum. The first class of bachelor students graduated in the spring of 2024. Of 41 possible candidates, 38 applied for jobs at Norwegian Customs, and 29 of these were employed (Tolletaten, 2023, 2024).

Admission to the program occurs through Norway's national higher education admission system and is highly selective. In recent admission cycles, more than 1,000 applicants have competed for approximately 60 available places annually. The program is publicly funded, with no tuition fees. Most graduates pursue careers within the Norwegian Customs Administration, although the program also prepares students for employment in logistics, border management and regulatory compliance roles in the private sector.

Table 2. Overview of the curriculum for the practice-based bachelor program in Customs, goods handling and border control at the Norwegian university in this study.

Semester	10 ECTS	10 ECTS	10 ECTS
1st	E-TOL130 Customs in an organisational and societal perspective		
2nd	E-TOL220 Customs law and related legal topics	E-TOL115 International trade, logistics and goods handling	
3rd	E-TOL310 (elective) Intelligence and risk assessment	E-TOL155 (elective) Pedagogical supervision	E-TOL170 Scientific theory and method
4th	E-TOLBAC Bachelor thesis in Customs, freight forwarding and border control		

Source: Author.

Since its start in 2021, the bachelor program has maintained strong application numbers and low dropout rates. With approximately 150 students across all its classes, the program delivers both theoretical and practical training as a collaboration between the university and Tolletaten. As of 2025, the program remains the most popular program at the university, with 1,111 applicants for 60 available places in the coordinated admission process in 2024. The bachelor program has also received recognition under the WCO PICARD framework as meeting the requirements of the Standards for customs education.

The collaboration agreement between the University of Stavanger and Tolletaten also provides opportunities for research in areas relevant to Customs. The University of Stavanger has recently received funding from the Ministry of Education for three doctoral positions linked to the program in Customs, goods handling and border control. Such initiative helps to inform the research-based approach to education for which the program has been known. Moreover, the program's alignment with national strategic priorities, such as safety and digital transformation, is further supported by the university's institutional commitment to quality assurance and periodic re-accreditation, as detailed in the 'Application for WCO recognition of Customs and border management, bachelor degree'.

In addition, active customs officers (i.e. employees who have undertaken professional customs training provided by Tolletaten prior to the current model of collaboration) are given the opportunity to formalise and further develop their competence into a bachelor degree through a continuing and further development program. The program recognises professional customs training and work experience as equivalent to 120 ECTS credits. To complete the practice-based bachelor degree, students undertake the remaining 60 ECTS credits over two years at the university. Table 2 provides an overview of the curriculum.

The program generates strong interest, with 35 places offered annually. The first cohort graduated in spring 2024 with 33 students, reflecting a high completion rate for this continuing and further education program (Tolletaten, 2024). As the 120 ECTS credits awarded for professional customs training and work experience could not be analysed in detail, the practice-based bachelor program has not been included in this study.

The program operates within a governance structure characterised by close institutional cooperation between the university and Tolletaten. Curriculum development, internship placements and professional relevance are continuously informed through collaboration between university faculty and customs practitioners who contribute as guest lecturers and supervisors. This partnership model reflects a hybrid educational design in which the program is both academically anchored within a university framework and professionally oriented towards the operational needs of the national customs administration.

3.2. Data collection

The primary sources for this study consist of the University of Stavanger customs bachelor curriculum, WCO *Professional Standards 2019* and relevant institutional reports. Particular attention was given to curriculum components related to risk assessment, intelligence analysis, crisis preparedness and digital security, as these competencies are central to contemporary risk-based border management systems. Curriculum documents, including course descriptions, learning outcomes and internship guidelines, were collected to create a comprehensive dataset reflecting the full scope of student learning experiences and expected competencies. These documents allowed for a detailed understanding of how theoretical knowledge, practical skills and professional attitudes are imparted throughout the program.

The WCO's *Professional Standards 2019* was used as benchmark document to define the global KSA expected of customs professionals. These Standards remain a globally recognised framework against which the Norwegian curriculum could be systematically assessed. In addition, internal reports and policy documents from Norwegian Customs regarding professional development, continuing education programs and digital modernisation initiatives were incorporated to contextualise the curriculum within ongoing national efforts to strengthen workforce capabilities. A list of the analysed documents as well as their contribution to this study's dataset is in Table 3. This combination of primary and secondary sources ensures that the analysis is grounded in both formal curriculum content and the broader institutional and professional context in which the program operates.

3.3. Data analysis

The analysis proceeded in two interrelated stages, namely curriculum mapping and SWOT analysis (Helms & Nixon, 2010; Pickton & Wright, 1998).

Table 3. Dataset of documents used in this study.

Document name	Relevance to the study/dataset
WCO *Professional Standards 2019* (WCO, 2019)	Provides the global framework of KSA expected for customs professionals; primary benchmark for curriculum alignment.
WCO *SAFE Framework of Standards to secure and facilitate global trade* (WCO, 2021)	Offers updated standards and modernisation priorities including risk management, digitalisation and international cooperation; critical for evaluating gaps in Norwegian curriculum.
WCO *Capacity Building* (WCO, n.d.-a)	Guidance on training programs, professional development and competency-based education; informs evaluation of curriculum design and best practices.
WCO *Framework of Principles and Practices on Customs Professionalism* (WCO, 2015)	Offers strategic principles on human resources management, organisation design, job profiling, recruitment processes, competency-based training guidelines and career path development as foundational elements of organisational development and modernisation in Customs.
Curriculum of the bachelor program in Customs, goods handling and border control as well as the practice-based bachelor program at the University of Stavanger	Includes all course descriptions, learning outcomes and competencies to be mapped against WCO Standards.
Norwegian customs internship/practical agreement	Details the structure, objectives and assessment of student internships. A document written in agreement between Norwegian Customs and the University of Stavanger. Essential for evaluating applied skills and professional socialisation.
Tolletaten Annual Reports (Tolletaten, 2023, 2024)	Provides context on workforce needs, recruitment trends and organisational priorities; helps assess the curriculum's alignment with real-world customs requirements.
Tolletaten *Business Strategy for the Customs Administration* (Tolletaten, 2022)	It outlines the strategic direction of the Norwegian Customs Administration up to 2030, focusing on modernisation, digitalisation and efficiency in customs operations, which provides critical context for evaluating how the bachelor curriculum aligns with organisational goals and future workforce needs.
Tolletaten *Threat Assessment 2025* (Tolletaten, 2025)	This document offers critical insights into the evolving challenges that Norwegian Customs faces, which are essential for aligning the bachelor program curriculum with current and future needs.
Course descriptions and syllabi	Supplementary source to verify teaching methods, course objectives and coverage of KSA.
Internal reports on student performance and learning outcomes	Provides empirical data on how students achieve competencies, enabling triangulation with WCO Standards mapping.
Periodical evaluation report of the bachelor program in Customs, goods handling and border control	Offers insight into curriculum decisions, course modifications and strategic planning; helps contextualise gaps or strengths.
Application for WCO recognition of Customs and border management, bachelor degree	Offers insight into how the university correlates its program with WCO Standards.
Annual courses evaluation reports	Internal evaluations of the courses comprising the bachelor program, which supports understanding of alignment with professional standards and modernisation goals.

Source: Author.

Curriculum mapping involved systematically comparing each course and learning outcome against the Standards, assessing the extent to which the program meets expectations for knowledge, skills and professional attitudes. Coverage was evaluated into three categories: coverage, partial coverage and no coverage. This exercise provided a granular assessment of the curriculum's strengths and weaknesses, identifying which elements of customs education were fully integrated and which required reinforcement, particularly in emerging areas such as digitalisation, AI, blockchain and cybersecurity.

To translate these findings into a format that could guide strategic reflection and policy recommendations, a SWOT analysis was applied to the mapped data. Strengths and weaknesses were derived directly from the

internal curriculum assessment, capturing the program's effectiveness in delivering core knowledge, practical skills and professional attitudes. Opportunities and threats were identified by situating the curriculum within the broader context of WCO's modernisation agenda, global trends in customs training and evolving technological demands. This step allowed the study to not only highlight gaps and deficiencies but also identify areas where the curriculum could be further developed to respond proactively to external challenges. Combining empirical mapping with strategic analysis provided the methodology with a robust framework for both evaluating the current program and informing recommendations for reform.

Overall, this dual approach ensured that the study produced both descriptive and analytical findings. The curriculum mapping established a clear, evidence-based picture of alignment with international standards, while the SWOT analysis interpreted these findings in a strategic context, linking the program's internal characteristics to external demands.

Ultimately, this methodological design allowed for a comprehensive evaluation of the bachelor program and provided a strong foundation for actionable recommendations aimed at modernising the curriculum and enhancing the preparedness of future customs professionals.

4. Results

The analysis of the University of Stavanger customs bachelor curriculum against the Standards demonstrates a generally strong alignment across knowledge, skills and professional attitudes. The findings highlight how the Norwegian program balances theoretical foundations with applied practice. However, there is still scope for curricular development, particularly in relation to digital modernisation, advanced financial analysis and global communication strategies.

4.1. Knowledge alignment

The knowledge dimension of the curriculum is robust and comprehensive. Core courses such as TOL100 (Basic trade, logistics and goods handling), TOL130 (Customs in an organisational and societal perspective) and TOL220 (Customs law and related legal topics) ensure students acquire the legal, economic and institutional knowledge required for professional customs work. These are complemented by mid- and upper-level courses that integrate leadership (TOL160), intercultural communication (TOL250) and intelligence analysis (TOL310). This demonstrates a deliberate integration of knowledge domains.

The curriculum familiarises students with international standards, risk management frameworks and intelligence-led border control principles that underpin contemporary risk-based customs operations. This enables them to understand customs operations not only in terms of legal enforcement but also as part of national and international trade governance, ensuring

awareness of organisational roles, policy considerations and inter-agency collaboration. Such knowledge acquisition is reinforced and validated through structured internship, which bridges theory and practice.

Table 4 shows two examples of how the WCO knowledge requirements are fully addressed. The curriculum covers the essentials of customs administration, enforcement and inter-agency collaboration, which gives graduates a strong theoretical platform. However, gaps emerge in specialised areas such as understanding financial and accounting principles, budget management and audit operations applied to Customs. While some of these topics appear indirectly in broader courses, they are not systematically taught, limiting students' ability to fully master the WCO's vision of a future-ready customs officer.

Another emerging gap lies in the technological domain. While the Standards emphasise digital literacy and ICT competencies for customs professionals, the Norwegian curriculum currently offers limited exposure to data-driven risk management, AI applications in customs and cybersecurity. These areas are not systematically integrated into core courses (being solely partially covered by TOL260 – security, ICT and emergency preparedness), which may limit graduates' preparedness to engage with ongoing modernisation initiatives recommended by the WCO and other international frameworks. The document *Application for WCO recognition of customs and border management, bachelor degree*, part of the dataset, confirms that emerging technology competencies such as managing scanners and x-ray equipment, and understanding data harmonisation, are not covered in the current curriculum and require post-employment training.

Finally, the curriculum provides only partial coverage of certain specialised knowledge areas, such as public relations, trade economics and customer management. While elements of these topics appear in broader courses, they are not systematically addressed or explicitly linked to professional competencies expected of customs officers. Framing these gaps as opportunities for enhancement, the curriculum could be strengthened by integrating targeted modules or case-based exercises that develop students' capacity to analyse complex trade data, understand economic implications of customs decisions and manage interactions with diverse stakeholders.

4.2. Skills alignment

The University of Stavanger customs bachelor curriculum demonstrates a strong emphasis on skills development, achieved through a deliberate integration of classroom learning and applied practice. Analytical competencies, particularly in risk management and intelligence assessment, are systematically cultivated through dedicated courses, while leadership, negotiation and intercultural communication are developed through modules that emphasise group work, case studies and experiential learning. Importantly, the internship (TOL380) provides extended immersion in real

Table 4. Examples of mapping of University of Stavanger curriculum content against WCO knowledge requirements.[1]

Overall knowledge requirements			
WCO *Professional Standards 2019*	**Expected knowledge**	**WCO's knowledge outcomes**	**Knowledge outcomes in the University of Stavanger curriculum**
The customs business	Understanding of the role Customs plays as both a policy implementer and enforcement authority, responsible for revenue collection, ensuring trade compliance with environmental, health, intellectual property rights (IPR), veterinary, phytosanitary and quality regulations, safeguarding society through safety and security measures against smuggling, drugs, weapons, counterfeit products and terrorism, as well as protecting industry from unfair trade practices such as dumping, safeguards and countervailing measures.	The individual should be able to explain and interpret regulations and standards related to fiscal affairs, trade compliance and facilitation, societal protection, safety and security and unfair trade; preferential trade agreements such as free trade agreements (FTAs), customs unions and associations; the Marrakesh Agreement establishing the WTO with its annexes; and international customs instruments, including those administered by the WCO.	TOL100 covers: • WTO and WCO roles • Trade agreements (e.g. European Economic Area (EEA), free trade, customs unions) • Customs procedures and tariff classification Match: Students gain understanding of Customs as policy implementers and enforcement authorities and are expected to discuss trade policy and compliance. TOL110 covers: • Customs authorities' responsibilities • Legal basis for customs operations. Match: Students gain foundational knowledge of Customs as enforcement and policy bodies, including their legal mandates. TOL120 partially covers: • Societal protection through safety and security measures. Match: While not focused on customs enforcement, the course supports understanding of safety and regulatory compliance relevant to customs operations. TOL200 covers: • Customs procedures, customs clearance, declaration control • Classification, origin, quantity and customs value. Match: Students gain operational knowledge of customs procedures and enforcement, directly supporting the WCO's Standard for understanding Customs as a policy and enforcement authority. TOL210 partially covers: • Customs administration and customs-specific administrative rules. Match: The course supports knowledge of customs operations within the legal framework, including enforcement and compliance. TOL220 partially covers: • Customs procedures, control and enforcement • Handling of goods (e.g. seizure, destruction). Match: The course supports operational and legal knowledge of Customs as an enforcement authority. TOL250 covers: • Interaction with individuals from diverse backgrounds • Cultural sensitivity and professional conduct Match: Students develop skills for engaging with economic operators and the public in a respectful, culturally aware manner. TOL280 covers: • Customs procedures, declaration control and sanctions • The role of customs as a protector of society. Match: Students gain hands-on experience with customs enforcement, compliance and the legal framework for customs operations. TOL380 covers: • Customs procedures, control of goods and travellers • Declaration control, sanctions and enforcement. Match: Students gain hands-on experience in customs operations, enforcement and compliance, directly supporting WCO's core standard.

Overall knowledge requirements			
WCO *Professional Standards 2019*	**Expected knowledge**	**WCO's knowledge outcomes**	**Knowledge outcomes in the University of Stavanger curriculum**
Customs role in government and interaction with other government agencies	Understanding of the role Customs plays in applying governmental and other government agencies (OGA) regulations to cross-border activities and ability to manage and enforce these regulations at a strategic level.	The individual should be able to work with key government departments on border, trade, supply chain and taxation policy, manage networks and cooperative approaches with other border agencies through coordinated border management (CBM), and describe the mission of Customs in relation to its own tasks and those of OGAs, including public health, safety and intellectual property.	TOL130 covers: • Custom's role and collaboration with other agencies • Understanding of societal and institutional functions. Match: Students learn about inter-agency cooperation and the role of Customs in broader governance structures. TOL210 partially covers: • Understanding of public administration and inter-agency responsibilities. Match: Students learn how Customs fits within the broader governmental structure, and its legal obligations. TOL220 partially covers: • Legal basis for inter-agency cooperation • Other authorities' obligations towards Customs. Match: Students learn about customs' role within the broader governmental and legal framework. TOL310 partially covers: • Collaboration across agencies, nationally and internationally. Match: Students learn about inter-agency cooperation as a foundation for effective intelligence and risk assessment. TOL380 partially covers: • Collaboration with other authorities • Reporting and communication across agencies. Match: Students learn to operate within a multi-agency framework, supporting CBM.

Source: Author.

1 Please contact the author at paulo.rocha@uis.no if you would like to view a complete version of the table.

customs environments, allowing students to consolidate operational skills, apply theoretical knowledge and exercise professional judgement under authentic working conditions.

Beyond operational and interpersonal skills, the curriculum also fosters strategic thinking and decision-making, enabling students to evaluate complex scenarios, prioritise enforcement actions and balance regulatory compliance with trade facilitation objectives. Communication skills are reinforced through exercises in report writing, presentations and stakeholder engagement, preparing students to convey complex information clearly to colleagues, supervisors and external partners. The integration of theory and practice is a recurring feature across the curriculum, with analytical and leadership skills applied to simulations, case studies, and practical exercises, ensuring students develop both technical proficiency and professional judgement.

Table 5 shows two examples of how the curriculum provides strong coverage of operational, analytical and interpersonal skills, with leadership and intercultural competence standing out as particular strengths. These align closely with the Standards and reflect Norway's emphasis on integrity, collaboration and ethical professionalism in customs practice. However, certain areas remain underdeveloped. Skills related to data-driven customs operations (including big data analytics, AI-assisted risk management, cybersecurity awareness and advanced digital communication) are only partially addressed. Similarly, specialised competencies in advanced stakeholder management and customer engagement are not systematically integrated into the program. These represent opportunities for future curriculum enhancement, ensuring that graduates are equipped to meet emerging global challenges and the modernisation priorities set forth in WCO guidance.

4.3. Attitudes and professional behaviours

Ethics, professional integrity and governance form the backbone of the University of Stavanger customs bachelor curriculum. From the outset, students are socialised into a professional culture that emphasises anti-corruption practices, corporate responsibility, adherence to the rule of law and accountability in decision-making. Foundational courses such as TOL110 (Introduction to customs law and legal method), TOL130 (Customs in an organisational and societal perspective) and TOL160 (Work and organisational psychology) instil strong legal, psychological and ethical principles, while the practice period at the border division in Norwegian Customs (TOL380) provides a practical environment in which students are expected to demonstrate integrity, sound judgement and responsible professional behaviour in real-world customs operations.

Table 6 confirms that the curriculum not only meets but often exceeds WCO expectations in the behavioural domain. Graduates are expected to be trustworthy, ethical and socially responsible actors, with the capacity to navigate complex, multi-agency and multi-national environments. Leadership

Table 5. Examples of mapping of University of Stavanger curriculum content against WCO skills required.[2]

Overall skill requirements			
WCO *Professional Standards 2019*	**Expected skillset**	**WCO's skillset outcomes**	**Skillset outcomes in the University of Stavanger curriculum**
Leadership	Capacity to lead by example. A leader should be empathetic and can communicate a clear direction for the business at all levels of the organisation, to assimilate and critically analyse complex information and effectively communicate the vision.	The individual should be able to: 1. Formulate a compelling, relevant vision together with aims and objectives. 2. Use the vision to motivate people and organise teams to achieve business objectives. 3. Develop long-term strategies for the organisation having due regard to their practical implementation. Establish the right company culture and introduce the necessary reforms having regard to principles of change management. Liaise with government to ensure its policies, legislation and implementation thereof reflect the needs of Customs and trade.	TOL130 (covers points 1–5) • Introduces theories of leadership and organisational culture • Discusses leadership styles (hierarchical vs dialogical) • Encourages reflection on how organisations should function • Covers inter-agency cooperation and public sector leadership. TOL160 (covers points 2 and 4) • Focuses on team leadership, stress management and communication • Addresses ethical leadership and power dynamics. TOL310 (covers points 3 and 4) • Teaches strategic thinking and decision-making under uncertainty • Encourages critical reflection on organisational intelligence processes. TOL380 (covers points 2, 4 and 5) • Emphasises professional maturity and leadership in practice • Requires students to take initiative, reflect on professionalism and collaborate across agencies.
Visioning	Ability to assimilate and critically analyse complex information and the surrounding environment with the aim of anticipating future events and needs. These events and needs must be expressed clearly and precisely at all levels of the organisation.	The individual should be able to: 1. Think outside the box. 2. Formulate future strategic options. 3. Convince stakeholders at all levels of the need for reform through informed and compelling arguments and effective communication (e.g. public consultations and hearings).	TOL100 (covers point 2) • Introduces global trade systems and logistics • Encourages understanding of complex systems and stakeholder needs. TOL130 (covers points 1–3) • Encourages reflection on how organisations should function • Introduces leadership and organisational theory

Overall skill requirements			
WCO *Professional Standards 2019*	**Expected skillset**	**WCO's skillset outcomes**	**Skillset outcomes in the University of Stavanger curriculum**
			• Discusses societal roles and inter-agency collaboration. TOL310 (covers points 1–3) • Focuses on strategic analysis and intelligence • Teaches students to critically assess uncertainty and future risks • Encourages creation of intelligence products and strategic recommendations. TOL160 (covers point 3) • Convince stakeholders (through empathy and communication).

Source: Author

2 Please contact the author at paulo.rocha@uis.no if you would like to view a complete version of the table.

development and intercultural awareness are prioritised, equipping students to engage effectively with colleagues, partners and stakeholders across organisational and cultural boundaries. Teamwork and collaborative professional behaviours are embedded throughout group-based projects, case studies and simulation exercises, reinforcing the application of ethical standards in cooperative settings.

The curriculum also fosters professional identity formation, shaping students' self-conception as competent, accountable and adaptive customs officers. Adaptability and resilience are implicitly cultivated through exposure to dynamic operational scenarios, preparing graduates to respond to evolving challenges such as regulatory changes, cross-border incidents or complex enforcement situations. One area with partial coverage is customer orientation; while enforcement remains central, the curriculum could further integrate service-oriented competencies aligned with WCO's broader vision of Customs as a facilitative, customer-facing authority. By continuing to build on these behavioural and professional dimensions, the program ensures that graduates emerge as ethically grounded, culturally aware and operationally capable customs professionals.

4.4. SWOT analysis

To synthesise the mapping results, a SWOT analysis was conducted to provide a structured overview of the program's internal strengths and weaknesses, as well as the external opportunities and threats posed by the evolving customs education landscape. This analysis integrated insights from the KSA mapping, highlighting areas of strong alignment with the Standards and those that require strategic enhancement.

Strengths of the program include the emphasis on ethics, professional integrity and governance, which are systematically embedded throughout courses and reinforced in practical settings. Leadership and intercultural competencies are comprehensively addressed, ensuring graduates can navigate complex, multi-agency and multinational environments. The program also maintains a solid foundation in core customs knowledge, including law, trade, enforcement and interagency collaboration, which is further reinforced through structured practical training and experiential learning opportunities. These strengths collectively support the development of a professional identity aligned with the expectations of a modern customs officer.

Weaknesses relate primarily to gaps in digital skills, including limited exposure to AI, big data analytics and cybersecurity practices, as well as insufficient systematic coverage of financial management, trade economics and advanced communication strategies. While these topics are touched upon in certain courses, they are not consistently integrated across the curriculum, potentially limiting graduates' preparedness for the digital and data-driven dimensions of contemporary customs operations. Similarly, customer orientation is only partially developed, as enforcement-centred training sometimes overshadows service-oriented competencies.

Table 6. Mapping of University of Stavanger curriculum content against WCO behavioural and attitudinal requirements.

Overall behavioural/attitudinal requirements			
WCO *Professional Standards 2019*	**Expected behaviour/attitude**	**WCO's behavioural/attitudinal outcomes**	**Behavioural/attitudinal outcomes in the University of Stavanger curriculum**
Role model	The individual should exhibit behaviours which reflect the culture and desired performance of the organisation.	The individual should be able to: 1. Lead by example. 2. Treat all staff with respect. 3. Acknowledge good performance.	TOL130 (covers points 1–3) • Encourages reflection on leadership styles and organisational culture. Promotes ethical behaviour and professional conduct as a foundation for leading by example. TOL160 (covers points 1–3) • Focuses on team leadership, interpersonal respect and recognition of good performance. TOL380 (covers points 1–3) • Requires students to demonstrate professional maturity and role modelling during practice in customs operations.
Ethics	The individual should demonstrate the importance of integrity and good governance.	The individual should be able to: 1. Lead by example. 2. Advocate and administer a zero-tolerance policy on corruption. 3. Ensure that employees and stakeholders are aware of the ethical standards of the organisation. 4. Support events on compliance and integrity. 5. Conduct regular external surveys on ethics. 6. Provide a secure and confidential channel of communication for whistleblowers. 7. Proactively deal with any unethical activities. 8. Recognise the importance of Corporate Social Responsibility. 9. Deal quickly and effectively with rumours	TOL110 (covers points 1–2) • Develops legal reasoning, emphasising integrity and governance. TOL130 (covers points 1–3, 7–8) • Covers organisational culture and ethical leadership, including accountability and corporate social responsibility. TOL160 (covers points 1–6, 8–9) • Focuses on ethical dilemmas, stress management and decision-making with integrity. TOL250 (covers points 1–3, 7) • Highlights intercultural ethics, compliance and professional responsibility in communication. TOL380 (covers points 1–9) • Requires students to act ethically and reflect on integrity during real customs practice, including corruption awareness and reporting channels.
Confidence	The individual should act and communicate confidently.	The individual should be able to: 1. Demonstrate belief in the organisation and its capability to meet expected standards. 2. Deal confidently with superiors, peers, employees and other stakeholders.	TOL160 (covers points 1–2) • Develops interpersonal confidence in communication and teamwork. TOL250 (covers points 1–2) • Enhances cross-cultural communication, encouraging clarity and self-assurance when dealing with stakeholders. TOL380 (covers points 1–2) • Provides opportunities for students to demonstrate confidence in decision-making and interaction with customs professionals.
Motivation	The individual should create a motivational working environment.	The individual should be able to: 1. Identify factors that motivate employees and stakeholders to support the achievement of the organisation's objectives. 2. Embrace new concepts that could motivate staff to improve their performance. 3. Promptly deal with issues that have a negative impact on	TOL130 (covers points 1–4) • Discusses organisational motivation, leadership theory and performance recognition. TOL160 (covers points 1–4) • Focuses on team dynamics, stress management and positive work climate. TOL250 (covers points 1–4) • Encourages empathy, feedback practices and role awareness to sustain motivation.

Overall behavioural/attitudinal requirements			
WCO *Professional Standards 2019*	**Expected behaviour/attitude**	**WCO's behavioural/attitudinal outcomes**	**Behavioural/attitudinal outcomes in the University of Stavanger curriculum**
		staff motivation. 4. Set realistic targets and recognise good performance.	TOL380 (covers points 2–4) • Requires students to identify motivational challenges in practice and apply constructive leadership responses.
Customer orientation	The individual should have the ability to view the customs business from the perspective of the private sector.	The individual should be able to: 1. Understand customer needs and their business environment. 2. Develop and implement customer service standards. 3. Create a customer evaluation and feedback system.	TOL100 (covers points 1–3) • Introduces global trade systems and customer needs in logistics and supply chains. TOL200 (covers points 2–3) • Focuses on customer service standards in logistics and customs contexts. TOL250 (covers points 1–3) • Develops intercultural customer orientation and feedback awareness in communication. TOL380 (covers points 2–3) • Requires direct interaction with travellers and trade actors, applying customer service standards.
Empathy and objectivity	The individual should have the ability to demonstrate empathy towards staff without compromising personal and professional values.	The individual should be able to: 1. View issues and make decisions objectively. 2. Explain issues clearly and honestly. 3. Acknowledge and deal effectively with opposing views.	TOL160 (covers points 1–3) • Emphasises empathy, team collaboration and objective conflict resolution. TOL250 (covers points 1–3) • Focuses on intercultural empathy, acknowledging and balancing opposing views in professional communication. TOL380 (covers points 1–3) • Requires students to apply empathy and objectivity in real customs operations, making fair and transparent decisions.

Source: Author

Table 7. SWOT analysis of the bachelor program in Customs, goods handling and border control.

Dimension	Strengths	Weaknesses	Opportunities	Threats
Knowledge	Strong foundation in law, trade, enforcement and inter-agency collaboration	Partial coverage of financial management, trade economics and data-driven operations	Introduce specialised modules in financial analytics, trade economics and emerging technologies	Rapid changes in digital customs operations may outpace curricular updates
Skills	Leadership, negotiation, teamwork, intercultural competence; practical application through internships	Limited skills in AI-assisted risk management, big data analytics, cybersecurity and advanced communication	Integrate AI, blockchain, cybersecurity and advanced stakeholder management modules; enhance customer-facing skills	Skills may become obsolete if curriculum updates lag; global competition in customs training
Attitudes/ professional Behaviours	Strong emphasis on ethics, integrity, governance, professional identity formation and collaborative behaviours.	Partial coverage of customer orientation and service mindset.	Expand training in customer engagement, adaptive behaviour and responsible digital practices.	Institutional resistance or resource constraints could hinder implementation of reforms.

Source: Author.

Opportunities arise from the program's potential to modernise and further enhance its global relevance. These include introducing targeted modules on AI in risk management, blockchain for supply chain traceability, cybersecurity and sustainable customs practices. Expanding lifelong learning pathways, upskilling programs, and international research and training collaborations can further strengthen the curriculum and reinforce Norway's position as a leader in WCO-aligned training.

Threats stem from the rapid pace of technological change, which may outstrip current curricular updates, and global competition in customs education, where other countries may develop more advanced digital and analytics-focused programs. Additionally, institutional inertia, including resource constraints or resistance to curricular reform, could delay necessary updates, leaving graduates underprepared for emerging operational demands.

Table 7 summarises these SWOT findings in relation to the three key dimensions of professional development (knowledge, skills, and attitudes/ professional behaviours) highlighting where strengths, weaknesses, opportunities and threats intersect with program objectives and WCO expectations.

5. Discussion

This study examined how a national customs education program contributes to the development of competencies required for risk governance at the border. The University of Stavanger program can therefore be understood as both an academic program about Customs and a professional program for Customs, reflecting the hybrid character of many PICARD-affiliated initiatives that combine disciplinary education with workforce development. The findings suggest a strong degree of alignment in

foundational domains but also highlight significant areas requiring enhancement if the program is to remain up to date and responsive to emerging challenges.

From a societal safety perspective, the findings highlight the growing importance of customs administrations as risk management institutions within national security architectures. Border authorities are increasingly responsible for detecting and mitigating complex transnational risks embedded in global trade flows, including illicit trafficking networks, cyber-enabled trade fraud and threats to critical supply chains. Preparing customs officers to operate in such environments requires educational programs that integrate legal knowledge with competencies in risk analysis, intelligence gathering and inter-agency coordination. In this sense, customs education contributes directly to the institutional capacity of states to manage cross-border risks and maintain societal resilience (Aven, 2016; Boin et al., 2017; Renn, 2017).

The findings, however, must also be interpreted in light of the current institutional status of the Standards. As noted, the framework has not been substantively revised since 2019 and is no longer embedded within an actively maintained PICARD process. This creates a structural tension: the Standards continue to function as a de facto international benchmark, yet they do not fully reflect the contemporary operational realities of customs administrations. The Norwegian case therefore illustrates both the enduring utility and the growing limitations of relying on a static competency framework in a rapidly evolving field.

Across knowledge, skills and professional attitudes, the Norwegian program demonstrates a commendable integration of WCO benchmarks. The curriculum embeds legal frameworks, organisational theory, intercultural communication and leadership development, reflecting an intentional design that connects theory with practice through extended internships. This alignment echoes broader research emphasising the value of constructive alignment between curriculum outcomes and professional competency frameworks (Biggs et al., 2022; Harden, 2001). The program's strength in cultivating professional attitudes (with its focus on ethics, integrity and accountability) is particularly in line with international standards of excellence. As highlighted in customs education literature, integrity remains one of the cornerstones of professional customs practice and a key determinant of public trust in border authorities (A. Grainger, 2011; Lund, 1977; Nicali & Favale, 2004). In this sense, the Norwegian program not only meets but also, in some respects, exceeds WCO expectations by systematically embedding these behavioural competencies throughout both coursework and practice-based learning (WCO, 2019).

There are, however, challenges to be addressed. While the curriculum is robust in traditional areas, the analysis revealed clear shortcomings in domains emphasised by WCO's modernisation agenda, particularly digitalisation, artificial intelligence and cybersecurity. Digitalisation not only

transforms customs operations but also introduces new systemic risks related to data integrity, cyber vulnerabilities and algorithmic decision-making in border control systems (Aven, 2016). These gaps mirror findings in other professional education fields, where curricula often lag behind technological developments, leaving graduates underprepared for rapidly changing work environments (Argüelles & Gonczi, 2000). The reliance on a single course (Security, ICT and emergency preparedness – TOL260) to cover ICT, security and emergency preparedness indicates insufficient systematic integration of digital competencies across the program. As it has been argued, customs authorities worldwide face exponential increases in trade data volumes, necessitating advanced data analytics and risk management capacities (Heijmann et al., 2020; Matsudaira & Koh, 2022). This development is consistently reflected in applied customs scholarship, particularly in contributions published in the *World Customs Journal*, which emphasise the centrality of risk management, data-driven targeting and intelligence integration as defining features of contemporary customs administrations (e.g. Widdowson, 2007). Without systematic curricular integration of such competencies, graduates risk being highly skilled in traditional enforcement but insufficiently equipped for the data-driven customs operations envisioned by the WCO *SAFE Framework* (WCO, 2021). It is worth noticing that although digital competencies are not yet fully integrated across the curriculum, the program's alignment with the Norwegian Qualification Framework ensures that digital literacy and innovation are recognised as core learning outcomes, providing a foundation for future curricular enhancements (NOKUT, n.d.).

Besides insufficient systematic integration of digital competencies across the program, a closer examination of individual WCO knowledge requirements further illustrates the tension between the framework and contemporary operational realities. For example, Knowledge Requirements 13 and 14 emphasise managerial competencies related to strategic leadership and organisational performance. While these competencies are clearly relevant to senior customs officials, their direct applicability to entry-level education programs may be limited. The Norwegian case therefore illustrates the broader challenge of applying a managerial competency framework to undergraduate-level training designed primarily for operational roles.

The findings also raise broader questions regarding the future evolution of the Standards themselves. The 2019 framework was developed before the recent acceleration of digital customs ecosystems characterised by large-scale data integration, artificial intelligence-assisted targeting and automated risk analysis.

A further gap concerns financial management and audit competencies, which remain peripheral in the program. While customs administrations are increasingly tasked with revenue protection and financial compliance (Pérez Azcárraga et al., 2022), Norwegian graduates may not be fully prepared to integrate economic and financial dimensions into their operational decision-

making. The absence of systematic training in customer orientation also raises concerns. As the WCO has consistently emphasised Customs' dual role as both enforcer and facilitator of trade (WCO, 2021), a predominant focus on enforcement might weaken the program's ability to prepare graduates for service-oriented aspects of customs practice, including stakeholder engagement and public–private cooperation.

Addressing these gaps can be challenging, as it requires a balanced approach that maintains the program's strengths while systematically integrating competencies that reflect the WCO's modernisation agenda. First, digitalisation must be mainstreamed across the curriculum, rather than siloed to a single module. Embedding data analytics, AI-supported risk management and cybersecurity in both theoretical and practice-based courses would reflect the interdisciplinary reality of modern customs work. This aligns with calls in higher education for digital literacy to be treated as a transversal skill rather than a specialised niche (Ng, 2012).

Second, incorporating financial management, audit practices and trade economics into the curriculum would strengthen graduates' capacity to navigate the fiscal and economic dimensions of customs work. Such reforms would ensure that the next generation of customs officers are not only regulators but also informed economic actors, capable of balancing compliance with trade facilitation (A. Grainger, 2011; Pérez Azcárraga et al., 2022, p. 2018).

Third, the program should place greater emphasis on customer orientation and service delivery. Although often considered secondary to enforcement, international experience shows that Customs' legitimacy increasingly rests on its ability to build constructive relationships with a wide range of stakeholders, including traders, logistics providers and international organisations (Mikuriya, 2020). Strengthening training in stakeholder management and customer engagement would therefore complement the program's existing focus on ethics and integrity, producing graduates who are not only accountable but also capable facilitators of global trade. In this author's assessment, this is an area particularly well-suited to practice-based learning. However, the program currently offers only one internship period, having been reduced from two (Kuran, 2022) due to logistical constraints within Norwegian Customs, which struggled to accommodate the growing number of students requiring supervision. The reduction is unfortunate, given that research consistently highlights the critical role of practical training in vocational education (Rocha et al., 2025; Ylönen et al., 2026). Skills such as stakeholder management and customer engagement are especially reliant on experiential learning and real-world interaction, making expanded practice opportunities an essential component of meaningful reform.

One limitation of the Standards is the implicit assumption that global standards can be applied uniformly across national contexts. As Kuran (2022) notes, customs authorities vary significantly in their prerogatives, organisational structures and national priorities. The Norwegian case

illustrates this tension: its strong emphasis on integrity and governance reflects domestic institutional culture, while gaps in digital competencies highlight a lag in adopting global modernisation trends. From a critical perspective, the value of alignment with Standards lies not in wholesale adoption but in using them as a flexible framework to guide context-sensitive reforms. In fact, the WCO seems to endorse such an approach, as it had no problem in recognising the Norwegian customs bachelor program as meeting the requirements of the WCO International Standards for the Customs profession (WCO, n.d.-b). Thus, rather than treating modernisation as a prescriptive agenda, national programs must ultimately ensure that their curricula meet the minimum expectations set by the WCO Standards. At the same time, the Norwegian case illustrates that the practical implementation of these Standards may require contextual adaptation to align global benchmarks with national institutional structures and operational priorities.

In summary, the Norwegian customs bachelor program demonstrates strong alignment with WCO Standards in traditional domains of KSA, especially in its emphasis on ethics, governance and intercultural competence. Yet, significant gaps remain in digital modernisation, financial management and customer orientation. Reforms that mainstream digital competencies, integrate financial and economic perspectives, and expand stakeholder-oriented training would strengthen the program's readiness for future challenges. Ultimately, the Norwegian case underscores the broader dilemma of balancing continuity with innovation in customs education: retaining the strengths of enforcement and integrity while embracing the transformative demands of a digital, data-driven and globally interconnected trade environment. It is worth noting, however, that the WCO Standards are aimed primarily at operational managers and leaders, while the Norwegian bachelor program is designed to prepare entry-level customs officers, which may explain why certain managerial competencies (e.g. performance evaluation, staff management) might not addressed. Either way, adopting the WCO Standards as guidelines for excellence seems to be the appropriate goal of any customs education program that wants to be accredited by the organisation.

Beyond the Norwegian context, the findings offer several lessons for customs education more broadly. First, curriculum mapping against WCO Standards provides a practical diagnostic tool for identifying competency gaps and guiding modernisation efforts. Second, strong alignment with ethics, governance and intercultural competence demonstrates that professional identity formation remains a central pillar of customs training. Finally, the study illustrates that WCO recognition and PICARD alignment can serve as catalysts for institutional reflection, encouraging universities and customs administrations to periodically reassess curricula in light of technological and operational change. These insights may be relevant to other jurisdictions seeking to develop or reform higher education programs dedicated to customs and border management.

6. Conclusion

This study has mapped the Norwegian bachelor program in Customs, goods handling and border control against the WCO *Professional Standards 2019*, with the aim of identifying strengths, gaps and opportunities for modernisation. Customs education is therefore not only a matter of professional training but also a component of national capacity for managing cross-border risks affecting societal safety. Beyond customs education, the findings have implications for societal safety and risk governance. As global trade systems become increasingly complex and technologically integrated, customs authorities represent critical institutional nodes responsible for detecting and managing cross-border risks. Educational programs that prepare customs officers therefore contribute not only to administrative efficiency but also to national resilience and the protection of societal infrastructures. Strengthening competencies in risk analysis, digital security and intelligence-led enforcement is therefore essential for ensuring that customs administrations can effectively fulfil their role within broader systems of societal risk management.

The analysis shows that the program provides a strong foundation in law, trade, enforcement, intercultural communication and ethics, while also embedding leadership and professional identity formation through both coursework and practice-based learning. These findings highlight that the program already meets many of the WCO's expectations and in some domains arguably exceeds them.

At the same time, the study reveals clear shortcomings in areas emphasised by the WCO's modernisation agenda, most notably digitalisation, artificial intelligence, big data analytics, cybersecurity and financial management. While these competencies are touched upon in selected courses, they are not systematically integrated throughout the curriculum. This limits the readiness of graduates to operate effectively in a customs environment increasingly shaped by digital supply chains, exponential data flows and cyber risks. Similarly, the limited focus on customer orientation suggests the need to balance the enforcement-centred training with a service-oriented approach that reflects customs' dual role as both regulator and facilitator of trade.

Theoretically, the study validates the use of the KSA framework as a coherent lens for curriculum evaluation and reform in a new setting. Practically, the findings call for curriculum updates that move beyond traditional strengths and systematically embed digital literacy, data-driven risk management and financial competencies into both classroom and applied training. For Norwegian policymakers and higher education institutions, the results emphasise the importance of sustained investment in customs education, not only to ensure national preparedness but also to align with global standards and maintain competitiveness in an evolving international training landscape.

There are, however, limitations to the present study. The analysis is based on curriculum documents and policy reports rather than direct classroom observation or longitudinal assessment of graduate outcomes. Future research should therefore triangulate these findings with empirical data on student performance, employer feedback and comparative analyses of other national customs programs. In particular, cross-country studies could shed light on how different institutional contexts integrate digital and financial competencies into customs education and what lessons Norway might adopt.

Taken together, the findings suggest that the Norwegian program is well-positioned but must consider integrating competencies that reflect the WCO's modernisation agenda. These findings point to the continued need for a globally recognised competency framework for customs professionals, but also highlight the urgency of revising the Standards to ensure their relevance in a context increasingly shaped by digitalisation, data-driven risk management and complex global supply chains. Without such reforms, there is a risk that graduates will be highly proficient in traditional enforcement but underprepared for the digital and data-driven dimensions of modern customs operations. The takeaway message is therefore clear: to prepare future customs officers for the dual demands of enforcement and facilitation in an age of digitalisation, Norway must strengthen its curriculum through systematic integration of digital, financial and customer-oriented competencies, thereby ensuring that its graduates remain at the forefront of professional customs practice.

Declaration of generative AI and AI-assisted technologies in the manuscript preparation process

During the preparation of this manuscript, the author used Microsoft Copilot for language editing and proofreading. After using this tool, the author reviewed and edited the content as needed and takes full responsibility for the content of the published manuscript.

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