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A Protection Model Against Side Effects of Cosmetic Products in E-Commerce: Perspectives from Islamic Economics, Social, and Risk Management

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Abstract

This study aims to develop and conceptualize a protection model for adverse effects arising from cosmetic products purchased through e-commerce platforms by integrating Islamic economic principles, social perspectives, and risk management approaches. A qualitative research design was employed using purposive sampling to select informants who had purchased cosmetic products via e-commerce, were at least 18 years old, and had experience with product-related adverse effects or digital consumer protection mechanisms. Primary data were collected through in-depth interviews, while secondary data were obtained from platform policy documents and relevant scholarly literature. The data were analyzed using thematic analysis by linking empirical findings with the principles of maqāṣid al-sharīʿah, consumer trust, and risk management frameworks. The findings propose a comprehensive protection model consisting of preventive, responsive, and curative dimensions, encompassing product verification, claims-handling procedures, and compensation mechanisms. This model extends the literature on digital consumer protection and offers practical guidance for e-commerce platforms, regulators, and insurance providers in strengthening consumer safety and trust within the digital marketplace.

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INTRODUCTION

The rapid expansion of electronic commerce (e-commerce) has fundamentally transformed the contemporary retail landscape by enabling consumers and business actors to conduct transactions without geographical and temporal constraints. The integration of digital technologies into commercial activities has generated unprecedented opportunities for market expansion, product accessibility, and transaction efficiency. In emerging economies such as Indonesia, the growth of digital marketplaces has accelerated significantly, driven by increasing internet penetration, smartphone adoption, and the widespread acceptance of platform-based business models. Major e-commerce platforms such as Shopee, Tokopedia, Lazada, and Bukalapak have become dominant channels through which consumers acquire a wide range of products, including cosmetics and personal care items. Consequently, consumer purchasing behavior has gradually shifted from conventional retail environments toward digitally mediated transactions characterized by convenience, accessibility, and extensive product variety (Lim et al., 2022; Fu et al., 2023). This transformation has contributed not only to economic growth and market efficiency but also to the emergence of new forms of consumer vulnerability associated with digital transactions and platform-mediated consumption (Ozili, 2023; Hendrik et al., 2024).

The increasing consumption of cosmetic products through e-commerce platforms has generated substantial concerns regarding consumer safety and product-related health risks. Unlike many other consumer goods, cosmetic products directly interact with the human body and therefore possess the potential to generate adverse reactions, ranging from mild skin irritation and allergic responses to more severe and long-term health complications. The extensive availability of cosmetic products through digital marketplaces has simultaneously expanded consumer choice and increased exposure to products with uncertain quality standards. The presence of unregistered products, misleading claims, counterfeit cosmetics, and products containing hazardous substances remains a persistent challenge in many online marketplaces. Such conditions create information asymmetries between sellers and consumers, making it difficult for consumers to accurately assess product safety before purchase. Consequently, consumers face elevated levels of uncertainty regarding the quality, authenticity, and safety of cosmetic products marketed through e-commerce channels (Sugibayashi et al., 2019; Ibrahim, 2023). Furthermore, the rapid growth of digital commerce has outpaced the development of comprehensive consumer protection mechanisms capable of addressing the unique health risks associated with cosmetic consumption in online environments (Oliveira et al., 2017; Pappas, 2016).

In response to these emerging challenges, several e-commerce platforms have introduced consumer protection initiatives designed to enhance buyer confidence and mitigate transaction-related risks. One notable example is Shopee's Product Side Effect Protection Program, implemented in collaboration with insurance providers to offer financial compensation for consumers who experience adverse health consequences resulting from the use of cosmetic products purchased through the platform. This initiative represents an innovative attempt to extend consumer protection beyond traditional transaction guarantees such as refunds and product replacement. By providing compensation for health-related losses, the program acknowledges that consumer risk in digital marketplaces extends beyond financial transactions and encompasses broader dimensions of well-being and safety. Nevertheless, while such initiatives demonstrate a growing recognition of consumer vulnerability, questions remain regarding their effectiveness, accessibility, governance structure, and ability to provide comprehensive protection against the diverse risks associated with cosmetic consumption in digital marketplaces (King & Lawley, 2022; Khan & Fatma, 2023).

The implications of cosmetic product side effects extend far beyond individual health outcomes. Adverse reactions can generate significant economic and social consequences for consumers, including medical expenses, productivity losses, psychological distress, and diminished trust in digital commerce platforms. From a broader market perspective, recurring incidents involving unsafe cosmetic products may weaken consumer confidence in e-commerce ecosystems, thereby threatening the sustainability of digital marketplaces. Consumer trust constitutes a critical foundation for online transactions because consumers are required to make purchasing decisions under conditions of uncertainty and limited physical verification of products. When consumers perceive that platforms are unable or unwilling to protect them from health-related risks, trust erosion becomes inevitable, leading to lower platform loyalty and reduced participation in digital commerce (Oliveira et al., 2017; Sirdeshmukh et al., 2002). Therefore, consumer protection against cosmetic product side effects should not be viewed solely as a legal obligation but also as a strategic mechanism for maintaining marketplace legitimacy and long-term digital ecosystem sustainability (Khan & Fatma, 2023; Morgan et al., 2023).

The growing complexity of digital commerce has also intensified the importance of transparency and accountability in platform governance. Research on supply chain transparency consistently demonstrates that access to reliable product information significantly influences consumer trust, perceived risk, and purchasing behavior. In digital marketplaces, transparency encompasses not only product specifications but also information regarding ingredients, production processes, certification status, regulatory compliance, and potential health risks. The absence of transparent information increases uncertainty and limits consumers' ability to make informed purchasing decisions. This challenge is particularly relevant in the cosmetic industry, where consumers often rely on product descriptions, reviews, and seller-provided information as substitutes for physical inspection. Consequently, enhancing transparency mechanisms represents a crucial component of effective consumer protection strategies within e-commerce environments (Sayogo, 2018; Duan & Zhu, 2024). Furthermore, recent studies indicate that digital transparency mechanisms supported by advanced technologies can contribute to improved trust, accountability, and risk management across complex supply chains (Feng et al., 2024; Zheng et al., 2024).

From the perspective of Islamic economics, the issue of cosmetic product safety is not merely a regulatory or commercial concern but also an ethical and moral responsibility embedded within the broader objectives of Islamic law. The concept of maqāṣid al-sharīʿah provides a normative framework emphasizing the protection of essential human interests, particularly the preservation of life (ḥifẓ al-nafs) and the preservation of wealth (ḥifẓ al-māl). Products that potentially endanger consumer health without adequate disclosure violate fundamental Islamic principles concerning justice, transparency, honesty, and accountability. The existence of uncertainty regarding product composition, safety, and health consequences may also generate elements of gharar and deceptive practices that are explicitly discouraged within Islamic commercial ethics. Therefore, consumer protection mechanisms should not be limited to compensatory responses after harm occurs but should also incorporate preventive measures aimed at minimizing risk before transactions take place (Harahap et al., 2023; Zain et al., 2024). Moreover, Islamic business ethics emphasizes that commercial activities should promote societal welfare and prevent harm, thereby requiring sellers, platforms, regulators, and supporting institutions to share responsibility for ensuring product safety and consumer well-being (Aman, 2020; Buldan et al., 2021).

Recent developments in Islamic economic scholarship further reinforce the relevance of integrating ethical governance principles into contemporary digital commerce. Scholars increasingly argue that maqāṣid al-sharīʿah should be operationalized through governance mechanisms that promote transparency, accountability, social responsibility, and sustainable value creation. Such perspectives extend beyond compliance-oriented approaches by emphasizing substantive consumer welfare as the ultimate objective of market activities. In this context, consumer protection against cosmetic product side effects can be interpreted as an application of Islamic ethical governance because it seeks to safeguard consumers from preventable harm while ensuring fairness in commercial relationships. The convergence between maqāṣid al-sharīʿah and contemporary sustainability frameworks further suggests that effective protection systems should simultaneously address economic, social, and ethical dimensions of consumer welfare (Ascarya & Masrifah, 2023; Jaiyeoba et al., 2025). Likewise, emerging studies highlight the compatibility between Islamic ethical principles and broader sustainability agendas, particularly in relation to stakeholder protection, responsible consumption, and social impact creation (Hanic & Smolo, 2023; Mohd Zain et al., 2024).

Despite the increasing importance of consumer protection in digital marketplaces, existing protection mechanisms continue to face substantial implementation challenges. Consumers frequently encounter difficulties when attempting to access compensation schemes, understand protection policies, or navigate complex claim procedures. At the same time, regulatory oversight often struggles to keep pace with the rapid evolution of digital commerce. Weak enforcement mechanisms, fragmented institutional coordination, and limited consumer awareness contribute to gaps between formal protection provisions and actual consumer experiences. As a result, many consumers remain vulnerable to both health-related and financial risks despite the existence of protection programs. These challenges suggest that current protection models may be insufficient because they focus primarily on post-transaction dispute resolution rather than comprehensive risk prevention and consumer empowerment (King & Lawley, 2022; Rundle-Thiele et al., 2024). Consequently, there is a pressing need to develop more holistic protection frameworks capable of addressing the multidimensional nature of consumer risk within digital marketplaces.

A critical review of the existing literature reveals several important research gaps. First, studies on e-commerce consumer protection predominantly emphasize legal compliance, dispute resolution mechanisms, and seller accountability. Although these studies contribute valuable insights into regulatory aspects of digital commerce, they generally overlook the specific health risks associated with cosmetic product consumption and the broader implications for consumer well-being. Second, research concerning cosmetic safety often focuses on product quality, halal certification, or regulatory compliance without adequately examining how integrated protection mechanisms can reduce consumer vulnerability in digital marketplaces. Third, studies grounded in Islamic economics frequently discuss ethical principles and consumer rights at a normative level but rarely operationalize these principles into practical protection models suitable for platform-based commerce (Sugibayashi et al., 2019; Katuk et al., 2021). Consequently, the literature remains fragmented and unable to provide a comprehensive framework capable of simultaneously addressing ethical, social, and risk-related dimensions of consumer protection.

Another limitation within the existing body of knowledge concerns the weak theoretical integration among Islamic economics, social vulnerability perspectives, and risk management frameworks. Previous studies often treat these domains as separate analytical perspectives rather than interconnected components of a unified protection system. Islamic economics emphasizes ethical obligations and consumer welfare, social perspectives highlight information asymmetry and consumer vulnerability, while risk management frameworks focus on identifying, assessing, and mitigating uncertainties. However, the relationships among these dimensions have rarely been systematically synthesized to explain how consumer protection mechanisms can be designed and implemented within digital commerce ecosystems. Addressing this theoretical fragmentation is essential because effective protection systems require ethical legitimacy, social responsiveness, and operational risk management simultaneously (Harahap et al., 2023; Morgan et al., 2023). The absence of such integration has limited the development of theoretically robust and practically applicable consumer protection models.

To address these shortcomings, this study conceptualizes protection as an integrated system designed to prevent, mitigate, and resolve losses arising from cosmetic product side effects in e-commerce environments. Unlike conventional protection approaches that primarily emphasize compensation after harm occurs, the proposed framework adopts a multidimensional perspective incorporating preventive, responsive, and corrective mechanisms. Preventive mechanisms include product transparency, safety verification, halal and regulatory compliance monitoring, and consumer education. Responsive mechanisms encompass accessible complaint channels, efficient claim procedures, and collaborative governance among platforms, sellers, insurers, and regulators. Corrective mechanisms involve compensation, dispute resolution, and continuous system improvement based on consumer feedback and risk monitoring. Through this broader conceptualization, protection becomes a proactive governance mechanism rather than merely a reactive compensation instrument (Duan & Zhu, 2024; Dashti et al., 2024).

Within this framework, risk is conceptualized as a multidimensional construct encompassing health risk, financial risk, reputational risk, and institutional risk. Health risk refers to the possibility of adverse physical effects resulting from cosmetic product usage. Financial risk involves medical expenses, compensation costs, and other economic losses experienced by consumers. Reputational risk concerns the potential deterioration of platform credibility and consumer trust following incidents involving unsafe products. Institutional risk reflects failures in governance, monitoring, and enforcement processes that undermine protection effectiveness. Simultaneously, consumer trust is conceptualized as confidence in product safety, information transparency, platform accountability, and the reliability of protection mechanisms. These constructs collectively provide an operational foundation for developing an integrated protection model capable of addressing the complex realities of contemporary e-commerce environments (Oliveira et al., 2017; Khan & Fatma, 2023).

Accordingly, this study proposes that an integrated protection model should be developed through the systematic convergence of Islamic economics principles, social protection perspectives, and risk management approaches. Islamic economics contributes normative foundations through maqāṣid al-sharīʿah, justice, trustworthiness, transparency, and accountability. Social perspectives contribute an understanding of consumer vulnerability, digital literacy disparities, and information asymmetry. Risk management contributes structured mechanisms for risk identification, assessment, mitigation, monitoring, and recovery. Rather than functioning independently, these perspectives interact dynamically to create a protection system capable of enhancing consumer welfare, reducing uncertainty, and strengthening trust in digital marketplaces. Such integration responds directly to the theoretical and practical limitations identified in previous studies while providing a clearer operationalization of consumer protection in e-commerce settings (Mohd Zain et al., 2024).

Based on these considerations, this study aims to analyze and formulate an integrated protection model for cosmetic product side effects in e-commerce that is grounded in Islamic economic principles, responsive to social dimensions of consumer vulnerability, and effective within a comprehensive risk management framework. By explicitly integrating ethical, social, and managerial perspectives into a coherent conceptual structure, this research seeks to contribute both theoretically and practically to the advancement of consumer protection scholarship in digital commerce and to the development of more trustworthy, sustainable, and socially responsible e-commerce ecosystems.

METHOD

This study employed a qualitative research approach to develop and conceptualize an integrated protection model for cosmetic product side effects within e-commerce platforms. A qualitative design was considered the most appropriate methodological approach because the phenomenon under investigation involves complex interactions among consumer experiences, perceptions of protection mechanisms, digital platform governance, health-related risks, and ethical considerations rooted in Islamic economics. Unlike quantitative approaches that emphasize statistical relationships among variables, qualitative inquiry enables an in-depth exploration of meanings, interpretations, and lived experiences associated with consumer protection practices in digital marketplaces. Furthermore, qualitative research is particularly suitable for examining emerging phenomena where theoretical understanding remains fragmented and where contextual factors play a critical role in shaping stakeholder perceptions and behaviors (Bhatia et al., 2021; Armstrong & Taylor, 2020). The qualitative approach also facilitates the development of a theoretically grounded conceptual model by capturing rich insights from multiple stakeholders and integrating them with contemporary literature concerning Islamic economics, consumer protection, and risk management (Harahap et al., 2023; King & Lawley, 2022).

The study adopted an exploratory qualitative design because existing research concerning protection mechanisms against cosmetic product side effects in e-commerce remains limited and fragmented. Previous studies have predominantly focused on legal consumer protection, product quality assurance, or halal certification issues, while limited attention has been given to the integration of consumer health protection, Islamic economic principles, and risk management frameworks within digital commerce ecosystems. Consequently, this research sought not only to understand existing protection practices but also to formulate a more comprehensive and theoretically integrated protection model capable of addressing health, financial, social, and reputational risks experienced by consumers. The exploratory nature of the study allowed for the identification of underlying dimensions and relationships that may not yet be sufficiently captured in existing theoretical frameworks (Sugibayashi et al., 2019; Ibrahim, 2023). Moreover, exploratory qualitative inquiry is particularly valuable when developing conceptual models intended to generate theoretical contributions and practical implications for emerging digital governance challenges (Morgan et al., 2023; Duan & Zhu, 2024).

Primary data were collected through semi-structured interviews involving participants selected using purposive sampling. This sampling strategy was chosen because the study required information-rich participants who possessed direct experience relevant to the research objectives. To ensure the relevance and credibility of the collected data, participants were selected based on several inclusion criteria. First, participants had to be at least 18 years old to ensure legal capacity in online transactions. Second, they must have purchased cosmetic products through e-commerce platforms such as Shopee, Tokopedia, Lazada, or similar marketplaces within the previous two years. Third, participants were required to have either experienced side effects resulting from cosmetic product usage or possessed direct knowledge regarding consumer protection mechanisms available within digital marketplaces. Fourth, participants had to be willing to share their experiences and perceptions during the interview process. The purposive sampling strategy enabled the researcher to obtain detailed and contextually rich information from individuals directly affected by the phenomenon under investigation, thereby enhancing the analytical relevance of the findings (Kyriazos, 2018; Bhatia et al., 2021).

A total of 20 participants were interviewed, consisting of consumers who had purchased cosmetic products through e-commerce platforms and had varying levels of experience regarding product safety issues and protection claims. Participant recruitment continued until theoretical saturation was achieved, which occurred when additional interviews no longer generated substantially new themes, categories, or insights relevant to the study objectives. The use of saturation as a criterion for sample adequacy is consistent with qualitative research principles emphasizing depth and richness of understanding rather than statistical representativeness. Participant characteristics such as age, gender, frequency of online cosmetic purchases, and prior experiences with cosmetic side effects were documented to provide contextual understanding and enhance the transferability of findings to similar settings (Armstrong & Taylor, 2020; King & Lawley, 2022).

Data collection was conducted through semi-structured interviews using an interview protocol developed based on three theoretical perspectives underpinning the study: Islamic economics, social vulnerability, and risk management. The interview guide included open-ended questions addressing consumer experiences with cosmetic purchases, perceptions of product safety, awareness of protection mechanisms, experiences with complaint and compensation processes, trust in e-commerce platforms, and expectations regarding consumer protection systems. Additional questions explored participants' views concerning transparency, accountability, ethical responsibilities of sellers and platforms, and the role of Islamic values in ensuring fair and responsible commercial practices. Each interview lasted approximately 45–60 minutes and was conducted either face-to-face or through online communication platforms, depending on participant preferences and accessibility considerations (Harahap et al., 2023; Hassanein & Tharwat, 2024).

In addition to primary data, this study utilized extensive secondary data obtained through document analysis and literature review. Secondary sources included e-commerce platform policies, terms and conditions relating to product side-effect protection programs, consumer protection regulations, reports concerning cosmetic product safety, and scholarly publications addressing Islamic economics, consumer protection, digital trust, supply chain transparency, and risk management. The inclusion of multiple data sources served not only to enrich contextual understanding but also to facilitate methodological triangulation, thereby strengthening the credibility and trustworthiness of the findings. Document analysis was particularly important for examining how protection mechanisms are formally structured and implemented within digital marketplace ecosystems (Nasution et al., 2023; Zain et al., 2024).

The data analysis process employed thematic analysis following a systematic coding procedure. Initially, all interview recordings were transcribed verbatim and reviewed repeatedly to ensure familiarity with the data. During the first stage of analysis, open coding was conducted to identify meaningful statements, recurring ideas, and significant experiences related to consumer protection and cosmetic product side effects. Subsequently, similar codes were grouped into broader categories through axial coding to establish conceptual relationships among emerging themes. Finally, selective coding was employed to integrate categories into higher-order themes that reflected the core dimensions of the proposed protection model. This iterative analytical process enabled the identification of patterns and relationships across participant experiences while maintaining sensitivity to contextual variations (Bhatia et al., 2021; Morgan et al., 2023).

To operationalize the theoretical integration emphasized in this study, the coding framework was developed based on three analytical domains. The first domain, Islamic economics, included themes related to maqāṣid al-sharīʿah, justice, transparency, trustworthiness, accountability, and consumer welfare. The second domain, social vulnerability, focused on information asymmetry, digital literacy, consumer empowerment, and accessibility of protection mechanisms. The third domain, risk management, encompassed risk identification, risk mitigation, compensation mechanisms, monitoring systems, and stakeholder responsibility. By employing theory-driven coding alongside inductive thematic exploration, the study ensured that data interpretation remained analytically grounded while still allowing new insights to emerge from participant experiences (Ascarya & Masrifah, 2023; Mohd Zain et al., 2024).

Several strategies were employed to ensure the trustworthiness and rigor of the research. Credibility was enhanced through data triangulation by comparing interview findings with documentary evidence and relevant literature. Member checking was conducted by sharing summaries of key interpretations with selected participants to verify the accuracy of the researcher's understanding. Dependability was strengthened through the maintenance of an audit trail documenting data collection procedures, coding decisions, and analytical reflections throughout the research process. Confirmability was addressed by maintaining reflexive notes and ensuring that interpretations were supported by empirical evidence rather than researcher assumptions. Transferability was facilitated through detailed descriptions of participant characteristics, research context, and analytical procedures, enabling readers to assess the applicability of findings in other settings (Giderler & Vanclay, 2024; Rundle-Thiele et al., 2024).

Ultimately, the integration of qualitative inquiry, purposive sampling, thematic analysis, triangulation, and theory-driven interpretation enabled the development of a robust analytical framework for understanding consumer protection against cosmetic product side effects in e-commerce. Through the systematic integration of Islamic economics, social vulnerability perspectives, and risk management principles, the study generated a comprehensive conceptual foundation for formulating an integrated protection model that is preventive, responsive, and corrective. This methodological design not only enhances the credibility and transparency of the research process but also strengthens the theoretical and practical contributions of the study to the fields of consumer protection, digital commerce governance, and Islamic economic research (Harahap et al., 2023; Jaiyeoba et al., 2025).

RESULTS AND DISCUSSION

Model of Cosmetic Product Side-Effect Protection in E-Commerce

The findings indicate that consumer protection against cosmetic product side effects in e-commerce should not be conceptualized merely as a post-purchase compensation mechanism but rather as an integrated governance system designed to prevent, mitigate, and resolve consumer losses arising from product-related health risks. Existing protection schemes implemented by digital marketplaces generally emphasize claim settlement after adverse events occur. However, such an approach reflects a reactive orientation that addresses consequences rather than underlying sources of vulnerability. This study argues that an effective protection model must be grounded in a multidimensional framework integrating platform governance, consumer trust, Islamic economic principles, and risk management perspectives. Through this integration, protection becomes a proactive institutional mechanism that enhances consumer welfare while simultaneously strengthening the legitimacy and sustainability of digital marketplace ecosystems.

From a platform governance perspective, e-commerce platforms occupy a central position as intermediaries responsible for coordinating interactions among consumers, sellers, regulators, and protection providers. Unlike traditional retail transactions, platform-based commerce creates significant information asymmetries because consumers are unable to physically inspect products before purchase and therefore depend heavily on information provided through digital interfaces. Such asymmetries are particularly critical in cosmetic transactions because product quality, ingredient safety, and potential side effects cannot be fully evaluated prior to consumption. Consequently, the effectiveness of consumer protection depends not only on seller accountability but also on the platform's ability to establish transparent governance mechanisms, monitor product compliance, and facilitate accessible protection services. This finding supports prior studies emphasizing that platform transparency and accountability constitute essential foundations for reducing uncertainty and strengthening consumer confidence in digital marketplaces (Morgan et al., 2023; Duan & Zhu, 2024; Feng et al., 2024).

The proposed model conceptualizes protection as a process that begins before product consumption rather than after consumer harm has occurred. This preventive orientation represents a significant departure from conventional protection schemes that focus primarily on compensation. Within the model, prevention is operationalized through product verification, halal and regulatory compliance monitoring, transparent disclosure of ingredients and potential risks, seller accountability mechanisms, and consumer education initiatives. Such mechanisms reduce information asymmetry and enable consumers to make more informed purchasing decisions. The importance of preventive protection is consistent with research demonstrating that transparency functions as a strategic governance instrument capable of reducing perceived risk and increasing trust in digital transactions (Sayogo, 2018; Zheng et al., 2024).

The analysis further demonstrates that consumer trust constitutes the central mechanism through which protection systems influence marketplace sustainability. Consumer trust extends beyond confidence in product quality and encompasses perceptions regarding platform integrity, procedural fairness, information transparency, and responsiveness to consumer complaints. When consumers believe that platforms possess effective mechanisms for addressing product-related harm, perceived transaction risk decreases and willingness to engage in online purchasing increases. Conversely, weak protection systems contribute to trust erosion, reputational damage, and reduced platform loyalty. This finding aligns with consumer trust theory, which posits that trust emerges when institutional actors demonstrate competence, benevolence, and integrity in managing uncertainty and protecting stakeholder interests (Oliveira et al., 2017; Sirdeshmukh et al., 2002; Khan & Fatma, 2023).

The responsive dimension of the model becomes operational when consumers experience adverse effects following cosmetic product usage. In this stage, protection is activated through complaint submission and claim processing procedures. However, unlike existing models that describe claims as administrative routines, this study interprets the claim process as a governance mechanism for institutional accountability. The accessibility, transparency, and efficiency of claim procedures determine whether protection systems are perceived as credible by consumers. The findings suggest that claim procedures should not merely verify eligibility for compensation but should also generate information that contributes to ongoing risk monitoring and system improvement. Accordingly, complaint data become strategic resources for identifying problematic products, monitoring seller behavior, and strengthening preventive governance interventions.

The verification stage represents the most critical component of the proposed framework because it serves as the interface between consumer experiences and institutional decision-making. Drawing upon ISO 31000 principles, verification functions as a formal risk assessment process through which the platform evaluates causal relationships between product usage and reported adverse outcomes, assesses the severity of harm, and determines appropriate response strategies. This interpretation extends beyond conventional administrative verification by positioning the process within a structured risk management cycle comprising risk identification, risk assessment, risk treatment, monitoring, and continuous improvement. Consequently, verification becomes an instrument for organizational learning rather than merely a mechanism for approving or rejecting claims (ISO 31000; Rundle-Thiele et al., 2024).

The corrective dimension of the model emerges when verified claims result in compensation, dispute resolution, or remedial actions. Compensation may include reimbursement of medical expenses, product replacement, refund mechanisms, or other forms of financial recovery. However, the study argues that corrective actions should not be interpreted solely as economic restitution. From a governance perspective, corrective interventions serve to restore consumer confidence, maintain institutional legitimacy, and reinforce platform accountability. Therefore, effective protection systems require continuous feedback loops through which insights from compensation cases contribute to improvements in monitoring systems, seller screening procedures, and consumer communication strategies. This dynamic approach transforms protection from a static dispute-resolution mechanism into an adaptive governance framework.

From the perspective of Islamic economics, the proposed model extends beyond regulatory compliance by incorporating normative principles derived from Maqāṣid al-Sharīʿah. The preservation of life (ḥifẓ al-nafs) provides ethical justification for preventive efforts aimed at minimizing health risks associated with cosmetic consumption, while the preservation of wealth (ḥifẓ al-māl) supports compensation mechanisms designed to protect consumers from financial losses. Furthermore, principles of justice (ʿadl), transparency (bayān), trustworthiness (amānah), and accountability (masʾūliyyah) establish ethical standards that guide interactions among consumers, sellers, and platform operators. Within this framework, consumer protection is not merely a commercial obligation but a moral responsibility directed toward safeguarding human welfare and preventing avoidable harm (Harahap et al., 2023; Ascarya & Masrifah, 2023; Mohd Zain et al., 2024; Jaiyeoba et al., 2025).

The study therefore proposes an integrated protection model consisting of three interconnected governance dimensions: preventive protection, responsive protection, and corrective protection. Preventive protection focuses on transparency, compliance monitoring, consumer education, and risk reduction before transactions occur. Responsive protection encompasses complaint accessibility, claim management, risk verification, and stakeholder coordination following adverse events. Corrective protection involves compensation, dispute resolution, institutional learning, and continuous improvement. These dimensions operate simultaneously within a broader governance structure supported by platform accountability, consumer trust, Islamic ethical principles, and risk management practices.

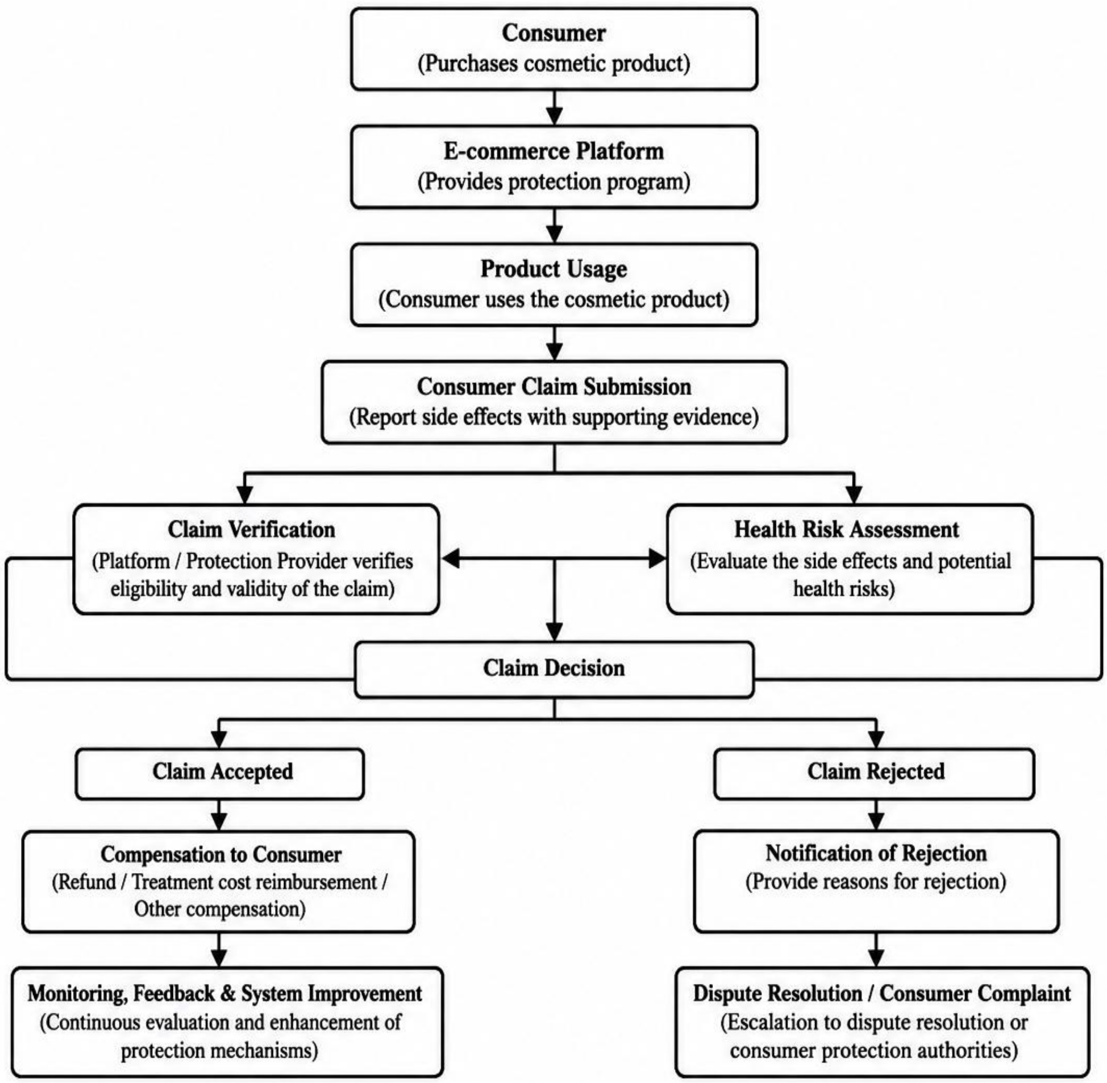

Figure 1. Protection Model

Model of Cosmetic Product Side-Effect Protection in E-Commerce from the Islamic Economics Perspective

Consumer protection in e-commerce has become increasingly important as digital platforms expand access to cosmetic products while simultaneously increasing consumer exposure to health-related risks. Findings from this study indicate that consumers frequently encounter difficulties in evaluating product safety before purchase due to limited access to reliable information regarding ingredients, product legality, potential side effects, and safety certifications. Several interview participants reported that purchasing decisions were often based primarily on user reviews rather than verified product information. Consequently, when adverse reactions occurred after product usage, consumers faced uncertainty regarding complaint procedures, compensation mechanisms, and the responsibilities of sellers and platform operators. These findings suggest that consumer vulnerability in cosmetic e-commerce is fundamentally driven by information asymmetry and governance limitations within digital marketplaces, consistent with prior studies emphasizing the relationship between transparency deficits, perceived risk, and consumer trust in online transactions (Oliveira et al., 2017; Pappas, 2016; Morgan et al., 2023).

From the perspective of Islamic economics, consumer protection extends beyond regulatory compliance and represents a moral obligation rooted in the principles of amanah (trustworthiness), justice (‘adl), transparency (wudhūh), and the prevention of harm (daf‘ al-mafsadah). Islamic commercial ethics require that market actors provide truthful information and avoid practices involving gharar (uncertainty) and tadlis (misrepresentation), both of which undermine fairness in market exchanges (Rice, 1999; Alserhan, 2020; Harahap et al., 2023). In the context of cosmetic e-commerce, the failure to disclose product composition, safety status, or potential side effects constitutes a violation of these ethical principles because consumers are deprived of the information necessary to make informed decisions. Therefore, consumer protection should not be viewed merely as a post-purchase compensation mechanism but as an integrated governance system designed to prevent harm before transactions occur.

The findings further reveal that existing protection mechanisms remain predominantly reactive. Most marketplace protection programs focus on compensation after adverse effects have occurred rather than systematically addressing the root causes of consumer risk. This limitation reflects a governance gap that has also been identified in contemporary platform governance literature. Effective digital marketplace governance requires the integration of preventive monitoring, transparency assurance, stakeholder accountability, and risk mitigation processes rather than relying solely on dispute resolution mechanisms (King & Lawley, 2022; Rundle-Thiele et al., 2024). From a consumer trust perspective, protection mechanisms influence trust not only through compensation outcomes but also through consumers’ perceptions of platform responsibility, transparency, and commitment to safeguarding user welfare (Sirdeshmukh et al., 2002; Khan & Fatma, 2023). Accordingly, the effectiveness of cosmetic side-effect protection should be evaluated based on its capacity to reduce uncertainty, strengthen accountability, and enhance consumer confidence throughout the transaction process.

To provide a more comprehensive explanation of the empirical findings, this study adopts the Maqāṣid al-Sharī‘ah framework proposed by Muhammad al-Tahir Ibn Ashur. Unlike conventional consumer protection approaches that focus primarily on legal compliance, Ibn Ashur’s framework emphasizes the realization of public welfare (maslahah ‘ammah) through institutional arrangements that promote justice, transparency, protection, and social responsibility. The empirical findings were analyzed through five interrelated dimensions: ar-rāwij (equitable circulation of benefits), wudhūh (transparency), hifzh al-māl (protection of wealth), tsabāt (legal certainty), and ‘adl (justice). These dimensions collectively provide a governance-oriented framework for evaluating the effectiveness of consumer protection mechanisms in digital marketplaces.

The principle of ar-rāwij emphasizes that economic activities should distribute benefits and risks fairly among all stakeholders. However, the findings indicate a significant imbalance within cosmetic e-commerce transactions. Sellers and platforms receive economic benefits from product sales, whereas consumers often bear the health and financial consequences associated with adverse product effects. This imbalance becomes more pronounced when product information is incomplete or misleading because consumers unknowingly assume risks that should be shared among sellers, producers, and platform operators. From an Islamic economics perspective, such asymmetry contradicts the objective of achieving equitable welfare distribution and protecting vulnerable market participants (Chapra, 2016; Ahmed, 2011). Therefore, effective protection mechanisms should incorporate shared responsibility arrangements that distribute risks more proportionately across all actors involved in the digital marketplace ecosystem.

Transparency emerged as one of the most critical issues identified in this study. Consumers consistently reported difficulties in accessing complete information regarding ingredients, product certification, safety testing, and potential side effects. This finding supports supply chain transparency literature, which argues that transparency functions as a strategic governance mechanism that reduces information asymmetry and strengthens trust formation (Sayogo, 2018; Duan & Zhu, 2024; Feng et al., 2024). From the Maqāṣid perspective, transparency is not merely an informational requirement but a moral obligation that enables informed and ethical decision-making. Consequently, protection systems should require mandatory disclosure of ingredients, halal certification status, regulatory approvals, product traceability information, and scientifically verified risk warnings. Such measures would significantly reduce uncertainty while enhancing both consumer autonomy and marketplace accountability.

The principle of hifzh al-māl requires safeguarding consumers from unjust financial losses. The empirical findings indicate that consumers who experience adverse cosmetic side effects frequently incur additional expenditures for medical treatment, product replacement, and recovery-related expenses. Although compensation programs exist, participants reported procedural barriers, claim rejections, and difficulties in obtaining reimbursement. These findings suggest that current protection mechanisms provide only partial protection against economic harm. From a risk management perspective, such weaknesses indicate insufficient risk mitigation and recovery planning. Consistent with ISO 31000 principles, effective consumer protection requires systematic processes for risk identification, risk assessment, risk treatment, and post-incident recovery. Therefore, compensation mechanisms should be integrated into a broader risk management framework that prioritizes prevention while ensuring accessible and equitable remediation when harm occurs.

The study also identifies weaknesses in legal certainty concerning responsibility for adverse product effects. While e-commerce platforms generally provide transaction records and consumer protection policies, accountability remains ambiguous when cosmetic products cause health-related harm. Consumers often struggle to determine whether liability rests with sellers, manufacturers, insurers, or platform operators. Such ambiguity weakens the credibility of protection systems and increases perceived risk. Within Ibn Ashur's framework, tsabāt requires clear governance structures, defined responsibilities, and enforceable accountability mechanisms. Recent studies on Shariah governance similarly emphasize that institutional legitimacy depends upon transparent allocation of authority, responsibility, and oversight functions (Nordin et al., 2020; Abdul Rahim et al., 2024). Consequently, legal certainty in cosmetic e-commerce protection requires clearly defined liability frameworks supported by effective monitoring and enforcement mechanisms.

The principle of ‘adl serves as the overarching objective that integrates all other dimensions. Justice requires a balanced relationship between benefits, responsibilities, and risks among marketplace stakeholders. The findings demonstrate that current protection mechanisms have not fully achieved this balance because consumers remain disproportionately exposed to health and financial risks. From an Islamic economics perspective, justice cannot be achieved solely through compensation after harm occurs; rather, it requires proactive measures that prevent avoidable harm and ensure fair treatment throughout the transaction process (Yilmaz, 2024; Jaiyeoba et al., 2025). Therefore, sellers, producers, platforms, regulators, and insurers must collectively participate in creating a protection ecosystem that prioritizes consumer welfare while maintaining market efficiency and innovation.

Social Perspective on the Protection Model for Cosmetic Product Side Effects in E-Commerce

The protection of consumers against cosmetic product side effects possesses significant social relevance within the digital economy because it functions not only as a legal safeguard but also as a mechanism for strengthening consumer security, trust, and social welfare in platform-mediated transactions. As consumers increasingly rely on e-commerce platforms to purchase cosmetic products, they are simultaneously exposed to greater health, financial, and informational risks arising from products that may be unsafe, counterfeit, misleadingly marketed, or distributed without regulatory authorization. Consequently, effective protection mechanisms serve a broader social function by reducing consumer vulnerability and enhancing confidence in digital marketplace ecosystems. Consumer protection, therefore, should be understood as a social governance instrument that contributes to trust formation, market legitimacy, and sustainable digital commerce rather than merely a post-purchase dispute resolution mechanism (Oliveira et al., 2017; Pappas, 2016; Khan & Fatma, 2023).

Previous studies consistently demonstrate that cosmetic safety issues represent a significant public concern. Research by Nur Alimah emphasizes that the circulation of illegal and hazardous cosmetic products poses serious threats to consumer health and necessitates legal protection mechanisms capable of ensuring product safety and business accountability. Similarly, Ami Dasria Asja highlights the continued presence of cosmetic products containing hazardous substances such as mercury and hydroquinone, indicating the necessity of stronger regulatory oversight to prevent adverse health consequences among consumers. Ersha Maulida further argues that misleading advertising and exaggerated product claims (overclaim practices) distort consumer decision-making and increase the likelihood of inappropriate product use. Likewise, Nesta Alessandro identifies insufficient consumer awareness regarding product composition and regulatory authorization as a major factor enabling the continued circulation of illegal cosmetic products. Collectively, these findings suggest that consumer vulnerability is strongly associated with deficiencies in information quality, regulatory transparency, and public awareness. These conditions reinforce the importance of transparency as a fundamental governance mechanism capable of reducing uncertainty and enabling informed consumer decision-making (Sayogo, 2018; Morgan et al., 2023; Duan & Zhu, 2024).

From a social vulnerability perspective, cosmetic side-effect protection extends beyond the prevention of physical harm and encompasses the broader issue of unequal access to information and consumer empowerment. Digital marketplaces inherently create asymmetric relationships between sellers and buyers because consumers are unable to physically inspect products prior to purchase and therefore rely heavily on information provided by sellers and platforms. This asymmetry becomes particularly problematic in cosmetic transactions because consumers frequently lack the technical knowledge necessary to evaluate ingredient safety, product authenticity, and regulatory compliance. Consequently, social protection in digital commerce should be conceptualized as a mechanism for reducing information inequality and strengthening consumers' capacity to make informed choices. This interpretation aligns with platform governance theory, which emphasizes that digital platforms bear responsibility not only for facilitating transactions but also for safeguarding stakeholder welfare through transparent information systems, accountability mechanisms, and effective monitoring structures (King & Lawley, 2022; Morgan et al., 2023; Rundle-Thiele et al., 2024).

Empirical evidence further suggests that significant implementation gaps continue to undermine the effectiveness of existing consumer protection systems. Juridical research conducted by Fitriani et al. found that many consumers who experienced losses resulting from cosmetic side effects lacked a clear understanding of their rights to submit claims, receive explanations regarding claim decisions, and seek accountability from sellers or platform operators. The study also identified procedural ambiguities concerning claim requirements, submission deadlines, and responsibility allocation among stakeholders, resulting in delayed processing and claim rejection. These findings indicate that consumer protection failures often originate not from the absence of protection policies but from inadequate procedural transparency and poor communication between platforms and consumers.

This argument is reinforced by Aldawsari et al. (2023), who found that most consumers experiencing adverse cosmetic reactions were unaware of available reporting systems and dispute-resolution mechanisms. As a result, many consumers became passive recipients of harm and discontinued efforts to pursue formal complaints. Similarly, Vieira et al. (2024) demonstrated that weak risk communication and limited transparency during claim management processes significantly increased perceptions of injustice among consumers because claim outcomes were viewed as opaque and insufficiently accountable. These findings collectively suggest that consumer vulnerability is not solely determined by product-related risks but also by deficiencies in institutional communication, procedural transparency, and consumer literacy. The present study extends these findings by demonstrating that consumer trust deterioration emerges when protection mechanisms fail to provide both informational clarity and procedural fairness. Such results support consumer trust theory, which argues that trust is formed through perceptions of competence, integrity, and benevolence within institutional relationships (Sirdeshmukh et al., 2002; Oliveira et al., 2017).

The interview findings generated in this study provide additional evidence supporting these concerns. Several respondents reported experiencing skin irritation after purchasing cosmetic products through online marketplaces. However, many participants indicated that they were unfamiliar with claim procedures and uncertain regarding the responsibilities of sellers and platform providers. One participant stated, “After experiencing skin irritation, I did not know how to submit a claim or whether the seller was responsible for the losses I experienced.” Another respondent explained, “The platform provided information about protection programs, but the procedures were unclear and difficult to understand." These narratives reveal that consumer vulnerability persists despite the existence of formal protection mechanisms because information regarding rights, responsibilities, and available remedies remains insufficiently accessible.

The findings also indicate that existing regulatory measures, including product registration requirements administered by the national regulatory authority, have not entirely prevented the circulation of unauthorized cosmetic products within online marketplaces. Consumers remain exposed to potentially unsafe products because platform monitoring mechanisms often struggle to identify and remove non-compliant products rapidly. This situation reflects a broader governance challenge in digital marketplaces whereby technological innovation advances more rapidly than institutional oversight capabilities. Consequently, protection effectiveness depends not only on regulatory compliance but also on collaborative governance involving regulators, sellers, platform operators, insurers, and consumers themselves. Such a perspective is consistent with recent studies emphasizing the importance of multi-stakeholder governance structures in enhancing transparency, accountability, and consumer welfare within complex digital ecosystems (Feng et al., 2024; Zheng et al., 2024; Giderler & Vanclay, 2024).

Based on the empirical findings and theoretical synthesis, this study proposes a Social Protection Model for Cosmetic Product Side Effects in E-Commerce that integrates preventive, curative, and educative dimensions into a unified governance framework. Unlike previous approaches that primarily emphasize post-incident compensation, the proposed model conceptualizes consumer protection as a continuous social process designed to reduce vulnerability before, during, and after transactions occur.

The preventive dimension focuses on reducing information asymmetry and minimizing exposure to unsafe products before purchase decisions are made. This dimension includes mandatory disclosure of product ingredients, regulatory authorization numbers, side-effect warnings, halal certification status, and traceability information. In addition, continuous product verification and marketplace monitoring are required to ensure compliance with safety standards. From a theoretical perspective, preventive protection contributes to consumer trust formation by reducing uncertainty and enhancing transparency, thereby strengthening marketplace legitimacy and consumer confidence (Sayogo, 2018; Duan & Zhu, 2024; Morgan et al., 2023).

The curative dimension addresses mechanisms for responding to adverse events after consumers experience harm. This dimension includes accessible complaint channels, simplified claim procedures, transparent claim evaluation systems, compensation mechanisms, and dispute resolution processes. Unlike conventional protection systems that focus primarily on reimbursement, the proposed model emphasizes procedural justice through clearly defined responsibilities shared among sellers, platforms, insurers, and regulatory institutions. Such arrangements reduce perceptions of institutional unfairness while strengthening accountability across the digital marketplace ecosystem (King & Lawley, 2022; Vieira et al., 2024).

The educative dimension aims to strengthen consumer capability and resilience through digital literacy programs, awareness campaigns, risk communication initiatives, and consumer education regarding cosmetic safety. Education is particularly important because protection effectiveness depends not only on institutional safeguards but also on consumers' ability to evaluate product information, identify potential risks, and utilize available protection mechanisms. Improved consumer literacy reduces social vulnerability and enables more informed participation in digital commerce. Furthermore, educational initiatives support responsible consumption practices and contribute to long-term marketplace sustainability (Gunawan et al., 2025; Rahayu et al., 2025).

Risk Management Perspective on Cosmetic Product Side-Effect Protection in E-Commerce

Risk management literature emphasizes that organizational governance functions as a critical mechanism for identifying, assessing, mitigating, and monitoring risks that may threaten stakeholder welfare and organizational sustainability. Within digital marketplace ecosystems, consumer protection programs represent a practical manifestation of risk governance because they are designed to reduce the probability and impact of losses arising from marketplace transactions. From the perspective of ISO 31000, risk management is not limited to preventing adverse events but also encompasses the development of responsive mechanisms that enable organizations to absorb, transfer, and recover from risks when preventive controls fail. Consequently, cosmetic product side-effect protection programs implemented by e-commerce platforms can be understood as institutional arrangements intended to manage health, financial, reputational, and governance risks simultaneously (King & Lawley, 2022; Morgan et al., 2023).

In the context of cosmetic product transactions, side-effect protection mechanisms represent the convergence of risk mitigation and risk transfer strategies. Risk mitigation is reflected through product verification, information disclosure, and monitoring activities designed to reduce the likelihood of consumer exposure to unsafe products. Risk transfer occurs when part of the financial consequences arising from adverse reactions is shifted from consumers to platforms, insurers, or compensation providers through claim and reimbursement mechanisms. Such arrangements are strategically important because consumer losses resulting from unsafe cosmetic products extend beyond direct medical costs and may generate reputational consequences for digital platforms. Therefore, protection mechanisms contribute not only to consumer welfare but also to the preservation of institutional legitimacy and marketplace sustainability (Oliveira et al., 2017; Pappas, 2016; Khan & Fatma, 2023).

However, the findings of this study indicate that the effectiveness of existing protection mechanisms remains constrained by governance deficiencies rather than merely product-related risks. Previous studies have similarly reported that consumer protection initiatives in digital marketplaces frequently suffer from procedural complexity, limited transparency, and insufficient consumer awareness. Nurdiyanti et al. (2024) found that consumers often lack adequate information regarding their legal rights and available dispute-resolution mechanisms when experiencing losses caused by unsafe cosmetic products. Likewise, Poernomo (2025) demonstrated that although consumer protection regulations formally exist, implementation gaps remain evident in complaint handling, policy enforcement, and consumer communication. These findings suggest that protection failures are frequently associated with governance shortcomings rather than regulatory absence.

The present findings support and extend these observations. Interviews with consumers revealed a widespread reluctance to report adverse cosmetic reactions through formal complaint channels. Many respondents perceived the reporting process as time-consuming, administratively burdensome, and unlikely to produce meaningful outcomes. One participant explained, “I experienced skin irritation after using the product, but I chose not to file a complaint because I believed the process would be complicated and take too much time.” Another respondent stated, “I did not know where to submit a claim or what evidence was required to receive compensation.” These narratives indicate that consumers frequently perceive procedural barriers as additional risks, thereby reducing their willingness to engage with available protection systems. From a risk management perspective, these findings reveal the presence of residual risks that remain inadequately controlled despite the existence of formal protection programs. According to ISO 31000 principles, effective risk management requires continuous communication, stakeholder engagement, transparency, and monitoring throughout the risk management cycle. The reluctance of consumers to utilize protection mechanisms suggests that current systems have not sufficiently addressed communication risk, procedural risk, and institutional trust risk. Consequently, the protection mechanism functions primarily as a reactive compensation instrument rather than a comprehensive risk governance system.

The findings also resonate with recent studies emphasizing the importance of transparency in reducing perceived risk and strengthening stakeholder confidence. Overclaim practices and inadequate product information have been identified as major contributors to consumer vulnerability in online cosmetic transactions because they increase uncertainty regarding product safety and performance. Insufficient disclosure regarding ingredients, side effects, certification status, and product legality prevents consumers from accurately assessing risk before purchase decisions are made. Previous research demonstrates that transparency enhances trust formation by reducing information asymmetry and enabling informed consumer decision-making (Sayogo, 2018; Duan & Zhu, 2024; Feng et al., 2024; Zheng et al., 2024). Therefore, transparency should be conceptualized not merely as an information-sharing activity but as a critical risk-control mechanism within digital marketplace governance. Furthermore, the findings suggest that consumer literacy constitutes an essential component of risk management effectiveness. Several respondents acknowledged limited understanding regarding cosmetic product legality, claim procedures, compensation rights, and regulatory verification mechanisms. One respondent noted, “I never checked whether the product had an official registration number because I assumed products sold on the platform were already safe.” Such statements indicate that consumer vulnerability is partly driven by inadequate risk awareness and insufficient capability to evaluate product legitimacy.

These findings support prior studies highlighting the role of consumer knowledge in reducing uncertainty, enhancing responsible consumption, and strengthening trust in marketplace transactions (Rahayu et al., 2025; Gunawan et al., 2025). Based on the empirical findings and theoretical synthesis, this study proposes an Integrated Risk Governance Model for Cosmetic Product Side-Effect Protection in E-Commerce. Unlike conventional protection approaches that focus predominantly on post-incident compensation, the proposed model conceptualizes protection as a continuous risk management process comprising preventive, responsive, and corrective dimensions. The preventive dimension aims to reduce the probability of adverse events through product traceability, transparent information disclosure, halal and regulatory compliance verification, seller monitoring, and consumer education. These mechanisms function as risk-control instruments designed to minimize information asymmetry and improve consumer decision quality before transactions occur (Sayogo, 2018; Morgan et al., 2023; Dashti et al., 2024).

The responsive dimension focuses on the rapid identification and management of incidents after adverse reactions occur. This component includes accessible reporting channels, simplified complaint procedures, standardized claim requirements, and real-time customer support systems. The objective is to reduce procedural risk and increase consumer willingness to engage with protection mechanisms when losses occur. The corrective dimension addresses recovery and organizational learning processes through compensation, dispute resolution, claim settlement, and continuous improvement initiatives. In this stage, responsibility is distributed among platforms, sellers, insurers, and regulatory institutions to ensure equitable outcomes and strengthen institutional accountability. Corrective governance contributes directly to consumer trust restoration because it demonstrates organizational commitment to fairness, transparency, and stakeholder welfare (Sirdeshmukh et al., 2002; Oliveira et al., 2017).

CONCLUSION

This study demonstrates that consumer protection against cosmetic product side effects in e-commerce requires a broader governance approach than conventional refund-based mechanisms. The findings indicate that consumer vulnerability stems not only from health risks but also from information asymmetry, limited transparency, ineffective complaint systems, and weaknesses in platform governance. To address these issues, the study proposes an Integrated Consumer Protection Model comprising preventive, responsive, and corrective dimensions. The preventive dimension focuses on product traceability, regulatory and halal compliance, transparency, and consumer education. The responsive dimension emphasizes accessible reporting channels, medical verification, and efficient claim handling, while the corrective dimension includes compensation, reimbursement, dispute resolution, and monitoring of non-compliant sellers. Collectively, these dimensions function as a continuous protection system designed to prevent, mitigate, and recover from consumer risks.

Theoretically, this study advances the literature by integrating Islamic economics, consumer vulnerability, and risk management into a unified framework. The findings demonstrate that effective consumer protection requires the convergence of maqāṣid al-sharīʿah principles, platform governance, consumer trust, and structured risk management. The model extends existing research beyond legal compliance and post-purchase compensation by explaining how transparency, accountability, consumer empowerment, and risk governance jointly enhance protection effectiveness. Practically, the model offers an operational framework for e-commerce platforms, regulators, insurers, and business actors. Its implementation can be assessed through measurable indicators, including information transparency, complaint-handling effectiveness, compensation accessibility, customer service responsiveness, consumer literacy, and product safety compliance. These indicators provide a basis for evaluating protection performance and strengthening consumer trust. This study is limited by its qualitative design, restricted number of informants, and focus on cosmetic products within selected e-commerce platforms. Future research should quantitatively validate the model using SEM or PLS-SEM and examine its applicability across different platforms, industries, and regulatory contexts. Such efforts would strengthen the model's empirical robustness and contribute to the development of more effective and sustainable consumer protection systems in digital marketplaces.

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