Innovative technology adoption in Maritime Supply Chain Integration

Background

- The need for efficient and sustainable maritime operations
- Implementation of ICT in supply chain management
- Importance of integrating various technologies

Methodology

Narrative literature review

- Analysis of existing research
- Identification of gaps and future directions

ICT Implementation in MSCI

- Technologies and tools for automation and optimization
- Case studies and successful implementations

Maritime Supply Chain Integration

- Identification of challenges and opportunities
- Strategies for improving efficiency and sustainability

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Keywords: Maritime Supply Chain, ICT, Technology
# Literature research

## ICT implementation in MSC

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## Literature research

### Blockchain
- Increased efficiency and security
- Improved communication and collaboration
- Enhanced privacy and confidentiality

### Big Data Analytics
- Improved decision-making and customer engagement
- Enhanced data-driven insights and analytics

## Literature research

### Blockchain Literature search result
- Blockchain literature search result (Yang et al. 2020)
- Blockchains in supply chain: a systematic review of current research (Yang et al. 2020)
- Blockchain in the maritime industry: a comprehensive review (Yang et al. 2020)
- Blockchain and supply chain management: a literature review and research agenda (Yang et al. 2020)

### Big Data Analytics
- Big Data Analytics: a systematic review and research agenda (Yang et al. 2020)
- Big Data Analytics in the maritime industry: a comprehensive review (Yang et al. 2020)
- Big Data Analytics: a systematic review and research agenda (Yang et al. 2020)
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Literature research

Internet of Things
- 대부분의 기술의 공통 요소로 인식하게 되어 다양한 분야간의 부가 가치를 창출하기 위해 이 기술을 제창하기 위한 경제적 가치와 기술적 혁신이 중요하다 (Humphreys et al., 2015).
- 다양한 분야에서의 영향을 미치고 있는 기술로, 많은 연구가 이루어지고 있는 IoT 기술을 중심으로 다양한 연구가 수행되고 있다.

ICT implementation in MSC integration

Blockchain
- block size: $2^{256}$
- steps: $2^{256}$
- iterations: $2^{256}$
- hash function: SHA-256

ICT implementation in MSC integration

Internet of Things
- 많은 인프라와 인터넷을 활용한 IoT 기술들: sensors, RFID, wireless sensor networks, network communication technology, machine to machine, vehicular terminals, and handheld mobile terminals, which improve system efficiency and effectiveness.
- Intelligent parking
  - Intelligent parking management system: intelligent payment system, intelligent vehicle management system, smart charging management system, regional data center.
- Intelligent transportation
  - Traffic management, transportation planning, traffic flow control, traffic data analysis.
- Transportation
  - Public transportation, ridesharing, autonomous vehicles.

Discussion

ICT implementation on MSC integration
- Conceptual model
- Shipping lines
- Post / Terminal
- Interlogistics
- Freight forwarder
- Bilbao
- Internet of Things
- Big Data Analytics
- Information sharing

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Discussion

ICT Implementation on MSC Integration

- Roadmap
  - Node optimization
  - Energy efficiency
  - Business planning
  - Decision making

- Data collection from NFC sensor
- Target monitoring
- Tracking location

- Document flow
- Network management
- Blockchain Platform

Conclusion

- 해양물류 통합에 있어 ICT기술은 핵심 요소
- 해양물류 통합에 중요한 역할을 하는 기술
  - Blockchain, Big Data Analytics, Internet of Things
- 해상 기술적 분야의 적용 방식, 적용 방식, 양상에 대한 conceptual model 및 overview 개발

- MSC 분야의 ICT 기술 적용에 대한 논의의 부족
- ICT기술과 관련 실험적 연구에 대한 실험 연구의 부족