Comparative Analysis of Humanitarian Logistics in Food Redistribution and Volunteer Programs: A Case Study of "Siswa Care for the Street" and "Dapur Raya - Dapur Jalanan Kuala Lumpur"

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ABSTRACT

Humanitarian logistics plays a critical role in mitigating food insecurity by managing the procurement, warehousing, transportation, and distribution of aid to vulnerable populations. This paper examines and compares two student-led humanitarian logistics projects—"Siswa Care for the Street" and "Dapur Raya - Dapur Jalanan Kuala Lumpur (DJKL)"—both completed as part of the Logistics of Humanitarian Mission (TPT510) course. Through comparative analysis, we explore how students applied logistics principles, identified relevant logistical challenges, and presented viable humanitarian project ideas. The study evaluates key themes such as alignment with Sustainable Development Goals (SDGs), capacity planning, risk management, and volunteer coordination. The findings demonstrate the importance of logistics in humanitarian missions and provide practical insights into student learning outcomes.

Keywords: i Humanitarian logistics, food redistribution, volunteerism, supply chain management, Sustainable Development Goals, community engagement, student learning outcomes

INTRODUCTION

Humanitarian logistics ensures the effective delivery of goods and services to communities in need, especially during crises. The course Logistics of Humanitarian Mission (TPT510) focuses on teaching students the principles of logistics and supply chain management in resource-constrained environments, applying them in dynamic settings such as humanitarian missions. By integrating classroom learning with practical projects, the course exposes students to real- world applications of logistics through team-based activities with partners from NGOs, government agencies, and the private sector.

This paper compares two TPT510 student projects—"Siswa Care for the Street" and "Dapur Raya - Dapur Jalanan Kuala Lumpur (DJKL)." Both projects offered hands-on experience in humanitarian logistics, focusing on different aspects of food redistribution. We analyze how students applied the principles and concepts of logistics, identified logistical challenges, and presented actionable project findings, thereby meeting the course learning outcomes.

LITERATURE REVIEW

Humanitarian logistics encompasses the planning, coordination, and management of resources in emergencies, ensuring aid reaches affected populations efficiently (Thomas & Kopczak, 2005). The literature suggests that applying supply chain principles—such as procurement, warehousing, transportation, and delivery—can improve the effectiveness of humanitarian missions, especially in urban areas (Ergun et

al., 2014). Food redistribution projects, for example, are crucial for reducing hunger while minimizing food waste, and logistics efficiency plays a key role in their success (Gustavsson et al., 2011).

Humanitarian logistics education has gained prominence as humanitarian missions increasingly depend on efficient and responsive supply chains to reach affected populations. According to Kovács and Spens (2011), humanitarian logistics education is essential to prepare students for the dynamic, resource-constrained environments encountered in crisis response. Such education combines theoretical logistics knowledge with practical applications, allowing students to understand the complexities of managing supply chains in disaster and humanitarian settings.

One of the primary challenges in teaching humanitarian logistics is equipping students with not only logistical skills but also with adaptability and problem-solving abilities, which are crucial in unpredictable humanitarian environments (Tatham & Kovács, 2010). To this end, humanitarian logistics courses benefit from experiential learning, simulations, and real-world case studies (Bölsche, Klumpp, & Abidi, 2013). The TPT510 course at UiTM reflects these educational approaches by engaging students in hands-on projects that require them to apply logistics principles in real-world scenarios, such as working with NGOs like Kechara Soup Kitchen (KSK) and Dapur Jalanan Kuala Lumpur (DJKL).

Additionally, humanitarian logistics requires students to be proficient in supply chain fundamentals, such as procurement, warehousing, transportation, and distribution, but in the context of resource and information constraints typical in disaster zones (Apte & Yoho, 2012). Through projects like “Siswa Care for the Street” and “Dapur Raya - Dapur Jalanan Kuala Lumpur,” students in TPT510 gain firsthand experience in each of these areas, managing the flow of food donations and coordinating volunteers for distribution. By engaging with real logistical challenges, students learn to assess and mitigate risks in a way that standard logistics courses may not provide.

Furthermore, humanitarian logistics education emphasizes not only logistical efficiency but also a commitment to ethical considerations and empathy (Day et al., 2012). Humanitarian operations often serve vulnerable populations, requiring students to engage thoughtfully with community members and prioritize dignity and respect. The TPT510 course incorporates these values by exposing students to diverse social contexts, such as addressing food insecurity in urban settings, aligning with educational recommendations to foster cultural sensitivity and ethical decision-making among future logistics professionals (Oloruntoba & Gray, 2006).

The course also aligns with Behl and Dutta’s (2020) recommendation for the integration of real-world data and partnerships with organizations, providing students with valuable insights into logistical operations under real-world constraints. TPT510 incorporates data and information from sources like the UN and NGOs, and students collaborate directly with humanitarian organizations, which allows them to develop actionable solutions in real time. Macdonald and Corsi (2013) further advocate for this approach, emphasizing the value of interactive simulations and case studies drawn from actual humanitarian crises to prepare students for field conditions.

METHODOLOGY

The methodology involved qualitative analysis of two humanitarian logistics projects completed by students in the TPT510 course. The data was collected from project reports, reflections, and feedback from collaborating organizations. The analysis focuses on three core learning outcomes of the course:

Applying logistics and supply chain principles (C4, PLO1) Identifying relevant information on humanitarian logistics operations (A1, PLO6) Presenting clear, actionable project ideas (A2, PLO5). Key themes explored include SDG alignment, capacity planning, risk management, and volunteer coordination.

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ANALYSIS

Application of Logistics and Supply Chain Principles (C4, PLO1)

Siswa Care for the Street: The students applied supply chain management principles by organizing the collection, warehousing, and distribution of surplus food from supermarkets. They effectively managed transportation and cold chain logistics, ensuring food safety and timely delivery. The project demonstrated the application of procurement strategies, transportation management, and warehousing in a real-world setting, aligning with the course objective of applying logistics principles in humanitarian contexts.

Dapur Raya - Dapur Jalanan Kuala Lumpur: This project involved the procurement, preparation, and distribution of meals for the homeless. The students coordinated a larger team of volunteers, managed warehousing at Kelab Bangsar Utama, and transported food to the event location. In addition to traditional logistics operations, they had to manage the cultural components of the event, highlighting their ability to adapt logistics principles to community-based projects.

Comparison: Both projects successfully applied logistics and supply chain principles, but with different focuses. "Siswa Care for the Street" emphasized supply chain efficiency in surplus food collection, while "Dapur Raya" integrated logistics with community engagement, managing both the flow of goods and people. Both teams demonstrated competence in using logistics knowledge in resource-constrained environments, fulfilling the course learning outcome (C4, PLO1). Table 1 provide the summary of comparison between both projects.

TABLE 1 COMPARISON OF KEY LOGISTICAL ACTIVITIES IN HUMANITARIAN PROJECTS

LOGISTICAL ACTIVITIES	SISWA CARE FOR THE STREET	DAPUR RAYA - DAPUR JALANAN KUALA LUMPUR
PROCUREMENT	Food collected from supermarkets through NGO partnerships (KSK)	Ingredients purchased and prepared for meals
WAREHOUSING & INVENTORY MANAGEMENT	Limited cold chain storage maintained during collection	Centralized storage hub at Kelab Bangsar Utama for staging and prep
TRANSPORTATION	Vehicles arranged by team members; focused on cold chain efficiency	Multiple vehicles used to transport supplies to event site
DISTRIBUTION	Distributed food to designated drop-off points	Distributed food directly to urban homeless population
VOLUNTEER COORDINATION	Small group managed logistics with NGO assistance	Large team managed across various roles (e.g., food, hygiene, security)

Identification of Relevant Information in Humanitarian Operations (A1, PLO6)

Siswa Care for the Street: The team effectively identified critical information regarding the availability of surplus food, the capacity of the collection points, and the distribution needs of the beneficiaries. They used real-time communication with KSK to manage changes in logistics plans, particularly in response to traffic delays and vehicle capacity limitations. Dapur Raya - Dapur Jalanan Kuala Lumpur: The team identified key logistical challenges such as managing large crowds, coordinating multiple volunteers, and ensuring food safety in a public space. They also had to adapt to unforeseen challenges such as resource shortages and crowd control issues, demonstrating their ability to assess and manage risks in real-time.

Comparison: Both projects showcased the ability to identify and manage relevant logistical information during operations. "Siswa Care for the Street" focused on data-driven logistics management, while "Dapur

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Raya" involved more dynamic, on-site decision-making. Both approaches align with the course outcome of identifying relevant information in humanitarian logistics operations (A1, PLO6).

Presentation of Clear and Actionable Humanitarian Project Findings (A2, PLO5)

Siswa Care for the Street: The team presented clear, concise, and actionable findings, highlighting the logistical processes that ensured the efficient redistribution of food. Their report included detailed analyses of transportation routes, vehicle capacity, and the cold chain management system. The project findings offered practical insights into improving food distribution logistics for future projects.

Dapur Raya - Dapur Jalanan Kuala Lumpur: The team's report focused on how they managed the logistical complexity of the event, from food preparation to distribution and cultural engagement. Their presentation outlined the challenges of volunteer coordination, crowd control, and hygiene management, providing practical recommendations for future large-scale community events.

TABLE 2 COMPARISON OF PROJECT CHALLENGES AND SOLUTIONS

Challenge Category	Challenge	Siswa Care for the Street Solution	Dapur Raya Solution
Community Engagement	Building trust and addressing diverse community needs	Partnered with local NGO (KSK) for effective outreach	Collaboration with DJKL and community leaders
Resource Constraints	Limited budget and transportation resources	Used multiple smaller vehicles to distribute costs	Crowdfunded and worked with corporate sponsors
Coordination & Communication	Coordination between volunteers and NGOs	Used WhatsApp for real-time updates	Held regular team meetings, online and in-person coordination
Cultural Sensitivities	Managing respect for cultural norms during food distribution	Trained on respecting local customs	Cultural sensitivity training and involvement of local leaders
Risk Management	Potential for injuries, delays, and language barriers	Conducted safety briefings, used multilingual instructions	Distributed tasks based on skill sets, implemented safety protocols

Comparison: Both teams presented their findings in a clear and actionable manner, demonstrating their ability to translate complex logistical operations into practical recommendations. "Siswa Care for the Street" focused more on supply chain efficiency, while "Dapur Raya" emphasized volunteer coordination and event management. Both projects met the course outcome of presenting actionable findings (A2, PLO5). Table 2 outline the challenges category that faced in both projects.

DISCUSSION

The comparative analysis of the "Siswa Care for the Street" and "Dapur Raya - Dapur Jalanan Kuala Lumpur" projects provides a compelling case study of humanitarian logistics education, underscoring the value of experiential learning in preparing students for complex, real-world challenges in humanitarian missions. In the field of logistics and supply chain management, particularly in humanitarian contexts, academic literature has long emphasized the need for education that transcends theoretical knowledge, incorporating hands-on, practical experience to cultivate the adaptability, critical thinking, and ethical sensibility required in crisis and disaster management (Kovács & Spens, 2011; Bölsche, Klumpp, & Abidi, 2013).

Both projects analyzed in this study illustrate how the Logistics of Humanitarian Mission (TPT510) course at UiTM effectively bridges the gap between theoretical knowledge and practical application, aligning well with the academic call for experiential learning in humanitarian logistics (Day et al., 2012). Through the TPT510 course, students engaged in projects that required them to directly apply logistics and supply chain principles, identify critical information relevant to logistics operations, and present actionable insights and solutions for real-world challenges. These tasks are critical in humanitarian logistics, where the unpredictability of crises necessitates agile, solution-oriented thinking and effective planning (Apte & Yoho, 2012).

Application of Logistics and Supply Chain Principle

The practical application of logistics and supply chain principles, as mandated by TPT510's learning outcomes, is central to both projects. In academic terms, this reflects the concepts of logistics theory as applied in humanitarian settings, such as procurement, warehousing, transportation, and distribution (Van Wassenhove, 2006). The "Siswa Care for the Street" project placed a heavy emphasis on cold chain logistics and efficient transportation management, while "Dapur Raya" required a more comprehensive logistical framework, including multi-stakeholder coordination and cultural engagement. The students' ability to organize and optimize these logistical operations supports the literature on supply chain flexibility and adaptability as essential skills in humanitarian logistics education (Oloruntoba & Gray, 2006).

Moreover, these projects provided a rich environment for students to practice adaptability and resource allocation under constraints, skills that are emphasized in the work of Tatham and Kovács (2010) as crucial for logistics professionals in disaster and humanitarian contexts. By involving students in real-time decision-making processes and problem-solving, the course reinforces academic insights that highlight the importance of critical thinking and adaptability in humanitarian logistics education.

Identification of Relevant Information and Risk Management

Both projects demonstrated how students identified and assessed information relevant to logistical risks, addressing challenges specific to each project. This aligns with the academic emphasis on the need for logistical risk management in humanitarian operations, where circumstances such as resource shortages, transportation delays, and cultural sensitivities can impact mission outcomes (Macdonald & Corsi, 2013). "Siswa Care for the Street" identified logistical risks related to transportation and capacity limitations, applying mitigation strategies to address potential delays. Meanwhile, "Dapur Raya" faced more complex challenges, including managing a large volunteer base and ensuring food safety and hygiene.

These risk management practices reflect the frameworks outlined in the academic literature, which suggest that effective humanitarian logistics education should include modules on risk identification, assessment, and mitigation strategies (Behl & Dutta, 2020). The students' ability to dynamically adapt their logistics plans based on real-time feedback demonstrates their practical understanding of risk, an essential component in both academic and professional humanitarian logistics. This experiential exposure aligns with recommendations by Day et al. (2012), who argue that real-world exercises foster the skills needed for timely, informed decision-making in crisis situations.

Presentation of Actionable Findings and Recommendations

The ability to present clear, actionable project findings is another academic priority in humanitarian logistics education, as it emphasizes not only technical skills but also the communication abilities needed to convey complex logistical information effectively (Kovács & Spens, 2011). In both projects, students effectively presented project results and proposed recommendations for future improvements. "Siswa Care for the Street" provided detailed recommendations on optimizing food distribution logistics, while "Dapur Raya" offered insights into volunteer training and hygiene management to enhance operational efficiency in similar community-centered missions.

These presentations reflect the academic view that humanitarian logistics education should incorporate real-world data and encourage students to generate solutions grounded in their experiences (Tatham & Kovács, 2010). By articulating insights and areas for improvement, students not only fulfilled course learning outcomes but also demonstrated the reflective practices that are integral to effective humanitarian operations.

Alignment with Sustainable Development Goals (SDGs)

The alignment of both projects with the Sustainable Development Goals (SDGs) highlights the social and ethical dimensions of humanitarian logistics education, underscoring the importance of empathy, inclusivity, and global awareness (Apte & Yoho, 2012). Academic literature emphasizes that humanitarian logistics courses should instill a sense of social responsibility, preparing students to contribute meaningfully to societal well-being (Oloruntoba & Gray, 2006). By working on projects that address issues like food insecurity (SDG 2) and reduced inequalities (SDG 10), students engaged directly with the ethical imperatives of humanitarian logistics, fulfilling both academic expectations and course learning outcomes.

The two projects offered students the opportunity to experience how logistics operations contribute to social impact, building a practical understanding of the ways in which supply chains can support humanitarian goals. This approach aligns with academic literature that advocates for partnerships between educational institutions and humanitarian organizations, enabling students to experience the positive societal impact of effective logistics management (Bölsche, Klumpp, & Abidi, 2013).

CONCLUSION

The comparative analysis of the "Siswa Care for the Street" and "Dapur Raya - Dapur Jalanan Kuala Lumpur" projects illustrates how students can apply logistics and supply chain management principles in humanitarian missions. Both projects successfully met the learning outcomes of the TPT510 course by applying logistics principles, identifying key operational information, and presenting actionable findings.

These projects provide valuable insights into the role of logistics in addressing food insecurity and demonstrate the importance of integrating volunteerism and community engagement into humanitarian missions. Future iterations of the course should continue to emphasize real-world applications, enabling students to gain practical experience in humanitarian logistics.

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