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Forced labor and Transportation: Multi-disciplinary perspectives

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ABSTRACT

Transportation plays a key role in combating human trafficking. This paper discusses data from the 2021 National Outreach Survey for Transportation (NOST), from the first ever United States Department of Transportation Combating Human Trafficking in Transportation Award winning project. Survey data collected from transportation personnel, victim service providers, and trafficking survivors reinforces the documented perceptions, limitations, and challenges in understanding and combating forced labor discussed among frontline workers. Among 173 respondents working in various state DOT construction units, only 26 % feel slightly or very confident (19 % and 7 %, respectively) about identifying labor trafficking in their work environment. Participating transportation workers confirm specific training topics that may help to identify forced labor proximate to the work environment or within the community, transportation-related venues, and events. Respondents from multiple transport modes also provide valuable suggestions on how personnel and industry leaders can help combat human trafficking in supply chains. For the primarily U.S.-based transportation respondents, the most suggested strategy for encouraging companies to use products free from forced labor in their supply chains was high penalties (1,229 respondents), followed by loss of tax benefits (850 respondents) (total n = 1,766).

Introduction

Human trafficking, a form of modern slavery, is the recruitment, transport, or transfer of persons using force, fraud or coercion to exploit them for acts of labor or sex (United Nations 2002). While it is hard to quantify the number of victims of this covert crime, research estimates that there are 27.6 million victims trapped in forced labor alone (ILO 2022). Forced labor is defined as “all work or service which is exacted from any person under the threat of a penalty and for which the person has not offered himself or herself voluntarily” (ILO 2022). Putting an end to forced labor is included in two different targets under the 2030 United Nations Sustainable Development Goals (SDGs). One such SDG target, 8.7 Decent Work and Economic Growth, aims for member nations to take immediate and effective measures to eradicate forced labor and related crimes (United Nations, 2015).

Human trafficking is a hidden and complex crime involving sophisticated human behavior and questions of consent. Recognizing and addressing specific instances of labor trafficking can be especially difficult. There is a limited understanding of forced labor among all stakeholders, including the public, practitioners, and law enforcement. Additional impediments include limited visibility (especially in the media), as well as a lack of training, support, and research on the topic (Bonilla and Mo, 2019; Farrell et al., 2020; LHC 2020a; LHC 2020b). Adding to these shortcomings is another dynamic: the definition and forms of slavery-like exploitation, for legal and practical purposes, change by location and over time.

The hesitancy of labor trafficking victims to come forward is another factor affecting the study of forced labor. For example, men exploited in labor may not want to report those abuses due to familial, societal, and/or cultural expectations of masculinity and the responsibilities of being a provider for loved ones (Owen et al 2014). For foreign national victims, there may also be a fear that reporting labor abuses could lead to deportation charges for them and their family members. Harold and Dancy D’Souza, survivors and members of the U.S. Advisory Council on Human Trafficking, have shared their personal accounts of bonded labor and the threats of deportation experienced by their family. “I came on a promise, a faith, and to live the American Dream,” Harold said. “The faith got changed to fear, the promise got transformed into slavery, and...
my dream was like hell."\(^1\) The collective impact of these challenges is a scarcity of data and a limited understanding of the patterns of human traffickers.

Combating human trafficking requires a multi-disciplinary approach and unwavering commitment from relevant industries and, ultimately, all sectors. One such crucial industry is transportation. The transportation industry plays a critical role in combating and preventing human trafficking as traffickers utilize transportation to recruit, transport, and control victims (Yagci Sokat 2022a; U.S. Department of Justice, n.d.). Transportation is also crucial for carrying and intercepting goods made by forced labor, also termed “forced labor in supply chains” (Yagci Sokat 2022b).

This paper presents the findings from the National Outreach Survey for Transportation (NOST) focused on forced labor, addressing the significant data gap regarding the intersection of human trafficking and transportation. NOST, the first-ever U.S. Department of Transportation (DOT) Combating Human Trafficking in Transportation Impact Award-winning proposal, is a comprehensive survey primarily for multiple modes of transportation. The survey aimed to identify what is and is not working on the frontlines of counter-human trafficking efforts and document unresolved challenges and recommendations from 1) transportation personnel, 2) victim service providers, and 3) trafficking survivors.\(^2\) The NOST also sought to supply data that may contribute to recommendations to improve counter-trafficking efforts.

The rest of the paper is organized in the following structure: Section 2 provides an overview of human trafficking and transportation. Section 3 summarizes the research methodology for the NOST. Section 4 discusses the questions related to forced labor in the NOST survey, while providing specific recommendations for the transportation industry. Section 5 concludes the paper with final remarks.

2. Literature Review/ background

“Human trafficking” and the related terms differ based on location, law, and preference. For example, while forced marriage and forced child soldiers are recognized as forms of human trafficking in certain geographies and law, they are not included explicitly in U.S. federal laws as such. “Modern slavery” is an umbrella term across the globe and is used interchangeably with human trafficking due to the historical use of slavery (Bonilla and Mo, 2019). Similarly, when significant human rights abuses are discussed in labor violations, some populations reference labor trafficking instead of modern slavery or forced labor. The difference becomes more distinct when discussing labor abuses in the workplace, such as long work hours, others can involve extreme mistreatment of the workers, such as confiscation of work documents and threatening employees or their family’s safety.\(^3\)

Around 17.4 million forced labor victims are in the private sector (ILO, 2022), many of which are in the supply chains producing the goods the public uses daily. For example, Yagci Sokat and Altay (2023) present the impact of modern slavery allegations in supply chains on operating performance in the food and beverage, textile, and information and communication technology sectors. Awareness of forced labor issues in supply chains and how to combat forced labor through supply chain management has increased in the past decade, largely due to new disclosure statement laws around the globe, including the California Transparency in Supply Chains Act, commonly referred to as Senate Bill 657 (“SB 657”) (Greer, 2018). SB 657 requires companies doing business in California with earnings of more than $100,000,000 to inform consumers about the risk of human trafficking and modern slavery in their supply chains.

SB 657 had a seminal impact on managing corporate supply chains’ role in modern slavery (Greer and Purvis, 2015). Following the enactment of SB 657, awareness about modern slavery in supply chains increased significantly (Conrad et al., 2015). Many countries adopted similar acts to address modern slavery in supply chains, such as the UK Modern Slavery Act of 2015 and the Australia Modern Slavery Act of 2018. Following prior laws instructing federal agencies to conduct reviews of the federal supply chain, in 2021, the Uyghur Forced Labor Prevention Act was signed into law in the U.S. to ensure that goods made with forced labor in the Xinjiang Uyghur Autonomous Region of the People’s Republic of China do not enter the broader U.S. market. A recent U.S. Government Accountability Office Report summarizes U.S. efforts in the international sphere while illustrating various gaps, such as staffing deficiencies, weaknesses in monitoring, and problems with data reliability and information sharing as impeding factors (GAO 2022).

Human trafficking is notoriously difficult to study and assess, a methodological circumstance which affects stakeholder confidence in the statistics and other figures used in training and for other purposes (Fedina, 2015). Though transportation plays a crucial role, there is very limited research on the intersection of transportation and human trafficking. Habermann et al. (2021) present observations on the role of state and local departments of transportation in combating human trafficking. The U.S. DOT Advisory Committee on Human Trafficking Report summarizes the efforts to combat human trafficking at the federal level, private industry, NGOs, and transportation authorities (ACHT 2019). Recent Transportation Research Board-sponsored projects produced information on anti-trafficking approaches for state departments of transportation and airports (National Academies of Sciences and Medicine, 2022). These industry recommendations are supplemented by a handful of academic papers on the topic. Habermann et al. (2021) present observations on the role of state and local departments of transportation in combating human trafficking, Yagci Sokat (2022a) investigates the role of transportation in combating human trafficking in California. Focusing more specifically on forced labor, Yagci Sokat

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2 For uniformity and clarity, the use of the term survivor in the context of this paper includes all individuals who have been exploited by trafficking, whether past or present. The authors would like to acknowledge the varied terminology used to describe trafficked persons and in no way mean to diminish or take away from those experiences.

3 The authors refer readers to Bonilla and Mo (2019) for more information about the evolution of human trafficking and its messaging in the United States.

4 The authors refer readers to Owens et al. (2014) for a discussion of the relationship between indicators and labor trafficking in the U.S.
(2022b) presents findings on forced labor in supply chains in California and how transit accessibility can be related to increased labor violations for vulnerable groups, such as H-2A and H-2B temporary work visa holders. Moreover, Yagci Sokat et al. (2023) present an application of how transit monitoring can help combat human trafficking using predictive analytics. New information continues to be shared as research progresses. Research centers like the McCain Institute continue to test the validity of the tools they are developing through on-the-ground research to “increase victim identification, support investigations, and increase labor trafficking prosecutions” (McCain Institute, 2023).

The full NOST report includes a chapter on forced labor in transportation that includes insight from transportation workers, law enforcement and survivors (Wigle and Baglin, 2023; Yagci Sokat and Altay, 2023).

The NOST’s multi-mode multi-stakeholder study produced a new dataset to help expand the literature on transportation and human trafficking (Wigle and Baglin, 2023). It is possibly the first survey to collect and analyze frontline input on this large scale, including the survivor and service provider perspectives, on the intersection of human trafficking and transportation, including the supply chains associated with the sector.

3. Methodology/Background

This paper works from the NOST dataset regarding the intersection of transportation with forced labor. As a result, the paper does not include or address all the findings from the NOST nor focus on sex trafficking or other forms of human trafficking identified worldwide. We describe the main steps of the NOST methodology below and refer the readers to UAS for more details (UAS n.d.).

Team Development

UAS conducted outreach to form (1) a project team and (2) a set of transportation industry “Oversight Agencies” (OA) which would oversee the distribution of the survey within their respective organizations. The project team would comprise subject-matter experts from diverse backgrounds and expertise. A Senior Research Team was assembled to handle the selection of team members and develop a list of criteria for recruitment. After initial screenings and interviews for expertise, technical competence, and by UAS, experts were divided into Working Groups (Transportation Outreach; Force Labor; Policy; and Data Visualization) that suited their level of expertise. An Analytics Working Group would evaluate outputs from the Working Groups, refine their themes, and add further survey questions in a format to facilitate integrated analysis and cross-tabulation later. Along with the research team, UAS also developed a Survivor Leader Advisory Council to ensure that the NOST is survivor- and trauma-informed. UAS created a comprehensive list of potential Oversight Agencies (OAs) and conducted interviews to confirm interest and capabilities.

Protocol Development

The NOST protocol, developed in 2020, called for identifying respondent “Subsets” of jobs within each OA. These Subsets would receive a unique set of questions tailored to their role in the transportation industry, with a view toward the potential intersection of each role’s duties with human trafficking. The focus was frontline, other positions that observe travelers, and some management or supervisory roles that may receive human trafficking reports. The NOST protocol focused on major modal providers (e.g., Aviation, Roadway, Transit, Maritime, Rail, Pipelines) and included outreach to more than 500 potential OAs.

In 2021, protocol results included commitments to distribute the survey from 59 OAs. Also in 2021, NOST survey questions were developed from three main sources: (1) the topic of focus for each Working Group as analyzed and refined by the Analytics Work Group; (2) analysis of feedback from interviews with field experts, stakeholders, and a NOST-established advisory council of human trafficking survivors; and (3) a repository of prior research by UAS staff, including topics and survey questions developed for two pilot studies. In a few cases, OAs identified not only Subsets but also additional questions to develop data for their organizations’ use.

IRB Solutions, LLC gave the NOST study global IRB approval on May 29, 2021. The survey was constructed in English and then converted into several non-English languages by native speakers of Dutch, Brazilian, Portuguese, Spanish, and French-Canadian. The survey was developed in Qualtrics web-based survey software and consisted of 634 questions across 152 Subsets. Given the diversity among the many respondent types reflected in the 152 different Subsets, complex questionnaire logic was implemented so that questions irrelevant to specific Subsets were not displayed: Subsets were only required to complete a small fraction of the 634 total questions. The survey included four groups of questions: (1) baseline questions were asked of every respondent; (2) industry-specific questions sought transportation worker responses; (3) victim service provider questions were asked of nonprofit leaders whose organizations provide services to survivors of human trafficking; and (4) survivor-specific questions were asked of individuals who identified as a labor and/or sex trafficking survivor. In addition, respondents were required to complete three “screener questions” that asked for their legal consent to participate, verified their status as an adult (18 + ), and confirmed that they had only completed a single questionnaire for the NOST study.

The questionnaire frequently asked respondents to answer questions using a five-point Likert scale. Other questions displayed answer options likely to describe the experiences of the transportation workforce, facilitate answering, and reduce respondent burden in hopes of achieving a higher completion rate. However, to capture new data and avoid bias, the questionnaire frequently presented respondents with an “Other -Write in” answer option where respondents could describe their experiences in an open-ended text format. Paper surveys with more limited instructional skip patterns were made available as requested by certain OAs to satisfy three small groups of frontline airport employees with limited web access so that they could complete the questionnaire. Respondents were sent the QIDs which corresponded to the Subsets identified by OAs, then the respondent was given the chance to state what their job position was. So, the methodology produced data to help differentiate among job categories. The report methodology lists all Subsets and the Data Dictionary presents all QIDs. We refer readers to the UAS report for details about the Subsets and the Data Dictionary.

Spatial and temporal patterns of human trafficking were reviewed and addressed in the NOST survey design. For example, question categories contemplated human trafficking victim “Exploitation” or “Relocation”, and “Circuits” used by traffickers. Answers to these questions, and others, have spatial or temporal aspects which shed light on how and when trafficking operations traverse the transportation system. Additionally, those charged with aiding the victim and survivors, victim service providers, may have a different relationship to the transportation system than those who investigate and prosecute a trafficking enterprise. For this reason, NOST survey questions were developed and tailored to each group’s interaction with the transportation system.

NOST Deployment

As noted above, to ensure the accessibility of survey questions and to support a strong response, UAS recruited external organizations, OAs, which would assist in identifying the target workforce positions for survey participation and manage the subsequent distribution of the survey to the targeted groups. Partnerships with organizations and agencies (e.g., OAs) were identified in multiple ways: (1) professional contacts from prior research or initiatives at the intersection of transportation and human trafficking; (2) self-referral or a referral by another OA; (3) the list of signers, as of February 2021, of the USDOT’s
Transportation Leaders Against Human Trafficking (TLAHT) initiative. Given limited resources, these approaches were designed to engage external organizations known to be allies in the counter-trafficking movement and therefore increase the chances of securing respondents. After extensive engagement, the team “cold-called” representatives of modes or regions needing broader representation once the other outreach was completed. With OAs in place to distribute the NOST questionnaire, UAS began deployment.

After an expert review and testing, the survey opened on July 5, 2021.

Analysis of Results

Multiple data-cleaning steps were taken before analyzing the results. At survey completion, the data steward downloaded data from the Qualtrics survey platform and prepared the survey data for analysis. Upon download of the data file, there were \( n = 4,894 \) questionnaires with data. Data cleaning removed records corresponding to respondents who did not complete the “screener questions” (\( n = 754 \)), who took less than 5 min to complete the survey (\( n = 141 \)), or who indicated completing additional surveys after an initial completion (i.e., duplicated surveys, \( n = 103 \)). This approach resulted in a final Subset of \( n = 3,896 \) completed surveys for subsequent analysis.

Analyses were completed with R Statistical Analysis Software and Microsoft Excel. Most analyses are categorical in nature and consist of simple frequency analyses or contingency table analyses (percentages and/or case counts are reported in all graphics and tables). Respondents could refuse to answer most questions in the survey, so the analyses are displayed with the total number of respondents answering each specific survey question reported.

4. Results and discussion

The NOST questions and their results can be divided into the following categories relating to this article: 1) current understanding of forced labor, 2) understanding the victims/survivors of forced labor, 3) observing service provider perspectives, 4) the intersection of forced labor with transportation, and 5) supply chains. For each question, data was provided from respondents ranging from various transportation sector employees to survivors and service providers.

Different figures are provided to present statistics derived from the NOST dataset. Responses to questions were not forced, resulting in the number of respondents per question differing significantly. For this reason, the total number of respondents who chose to provide answers to a selected question is provided for each statistic, as was noted above. A question identification number (QID) is also included for those who would like to check in the future when the NOST report is published. Note that sometimes a survey question could have multiple sub-questions, or follow-up questions that were only shown when certain answer choices are made, which may also result in varying numbers of respondents for the same question when providing more than one statistic. Implications of statistics from the NOST data for the transportation industry to combat human trafficking are included as much as possible.

4.1. Current understanding of forced labor

Respondents were asked a series of questions regarding forced labor to investigate their understanding of the types of human trafficking (sex v. labor), human trafficking in their community, and the types of training they have received, if any. As seen in Fig. 1a, among respondents, labor trafficking is the second most identified form of human trafficking (QID_518, please note that this figure excludes the survivor responses). While 2,509 respondents identify sex trafficking as a form of human trafficking, a slightly lower number of respondents (\( n = 2,343 \)) state that labor trafficking is a form of human trafficking. Eighty-seven percent (87 %) of the respondents (\( n = 2,840 \), where 108 self-identify as sex trafficking victims and/or survivors and 128 self-identify as labor trafficking victims and/or survivors) acknowledge that labor exploitation can exist without being labor trafficking (forced labor) (QID_514).

When asked about the most common form of trafficking in their community, 8 % reported believing that labor trafficking is the most common form and 4 % believe that forced labor is the most common form of human trafficking in their community (\( n = 2,187 \), QID_519, please note that this group of respondents do not include any survivor responses). Twenty-five percent (25 %) of the respondents stated that they are unsure about the most common form of human trafficking in their community (see Fig. 1b). Anticipating that the amount of training and the topics covered in training would differ among respondents, NOST survey questions were designed to drill down further into key areas with questions to reveal training gaps and how they impact perceptions of human trafficking. The proportion of respondents who stated they received labor trafficking training (41 %, \( n = 2,750 \)) was fewer than those who reported receiving sex trafficking training (63 %, \( n = 2,657 \), QID_155). This result may be correlated with a higher identification of sex trafficking as a form of human trafficking and/or a more common form of human trafficking in their community by respondents.

These statistics confirm some of the perceptions, limitations, and challenges surrounding forced labor and provide various opportunities for the transportation sector to address human trafficking (Gozdzialk, 2014; Owens et al., 2014; Yagci Sokat 2022a). For example, increased training on labor trafficking and collaboration with local anti-trafficking practitioners can increase the understanding of forced labor and/or labor trafficking indicators within a community. This would potentially help with some of the perceptions around forced labor.

4.2. Survivor perspective

NOST responses from labor trafficking survivors (\( n = 120 \)) are especially valuable to further research in this area (QID_11). Victims and survivors play a crucial role in understanding and addressing human trafficking. Moreover, because it is harder to discern this type of exploitation, considering advice and insights from labor trafficking survivors are vital for the anti-trafficking movement.

As seen in Fig. 2, survivors participating in the NOST survey were human trafficked for labor in many different settings (QID_281). The most commonly stated types of labor were domestic/residential (e.g. house cleaning, child care), carnival, and agriculture or animal husbandry (breeding). Some respondents mention the trucking industry and taxi services as venues for their own labor trafficking, whether that be at the onset of their exploitation or throughout their trafficking experience. These results illustrate why it is important to discuss how transportation intersects with human trafficking during recruitment, exploitation, and exiting of their abuse. Research shows that poor access to transportation can be an important barrier to exit human trafficking, especially for labor trafficking victims (Yagci Sokat 2022a; Clawson and Dutch, 2008).
Thus, industries, including those listed in Fig. 2, can also bring attention to the importance of transportation access for workers who experience restrictions on their mobility (Yagci Sokat 2022b).

Twenty-one (21) survivors state that they were labor trafficked at events, while seven (7) indicate that they were both labor and sex trafficked at events ($n = 51$, QID_307). This also confirms the potential role of transportation in anti-trafficking efforts as pointed out in prior research (Yagci Sokat 2022a). For example, increased training opportunities and awareness raising activities before and during major events can be an important anti-trafficking effort.

Survivors of sex and labor trafficking ($n = 53$) indicated where they were trafficked [see Fig. 1A in the Appendix], and while not generalizable nor representative of prevalence in these locations, the data reinforce the national scope of this crime. Survivors also report the places where they stayed, including transportation facilities, in the first week after exiting their trafficking [QID 444, NOST Report Figure 290, see Fig. 2A in the Appendix], a vulnerable time when they are at risk of returning.

Among 208 survivors, the majority of them are in the early stages of the healing process (QID_12). Fifty-three percent (53%) of the survivors, which includes both labor and/or sex trafficking survivors, state that they experienced obstacles when trying to re-establish their identity.
after exiting their trafficking situation ($n = 137$, QID_455). The transportation industry can help survivors overcome those challenges by providing access to transportation vouchers, even as service providers provide opportunities to improve life skills, and career and professional development skills (Yagci Sokat 2022a).

4.3. Service provider perspective

Working closely with survivors and their loved ones to offer support and connect them to nearby resources, service providers can also provide valuable information about the victims and survivors of human trafficking. Some NOST respondents began as survivors of human trafficking and then went on to become service providers to help others. The inclusion of their unique insight adds to the richness of the NOST dataset. Seventy-nine percent (79 %) of the service providers agreed or strongly agreed that exploitation in labor trafficking is underreported ($n = 33$, QID_498). Service providers also stated that efforts to address labor trafficking are more focused around the globe than in the United States (QID_612) (see Figs. 3 and 4). Increased training focused on labor trafficking and reporting can aid in understanding and tracking these crimes.
Fig. 3. Forms of Human Trafficking Focus Based on Geographical Area (QID_612).

Fig. 4. Confidence Level for Identifying Labor Trafficking in the Work Environment.

Fig. 5. Willingness for Human Trafficking Training Areas (QID_162).
4.4. Transportation and forced labor

Among 173 state DOT Construction respondents, only 26 % feel slightly or very confident (only 7 % very confident and 19 % slightly confident) about identifying labor trafficking in their work environment (QID_419). During the 2019 and 2020 calendar years, 24 state DOT Construction and maintenance-related personnel had direct knowledge of work that paid less than minimum wage in certain jobs (QID_420). Among these, the most mentioned job is the general laborer (19 respondents). Respondents also shared that potential exploitation in the forms of less than minimum wage in the use of certain equipment in transportation, such as tractor, forklift, and excavator (n = 16, QID_421). Anecdotal evidence collected in a standard way suggests the frontline may be aware of what is occurring in the broader community (even if not trafficking) and is willing to record or document it in an anonymous way.

Research shows that the transportation industry can help combat forced labor in many ways. Awareness and training are listed among the most important tools, particularly to ensure accountability to their own employees so that there is no exploitation in the workforce and the supply chain (Yagci Sokat 2022a; Yagci Sokat 2022b; U.S. DOT 2019). Fig. 5 shows that labor trafficking is one of the most desired human trafficking training topics (requested by 62 % of respondents), equal to those requesting training on sex trafficking (n = 3,139, QID_162). Identifying labor trafficking victims was also one of the most requested topics for law enforcement officer training, which was requested by 211 respondents. (n = 305, QID_166).

Action to counter human trafficking requires resources and respondents in law enforcement, identified, “Lack of resources for long-distance travel that aids work in this field” as an issue. For example, 46 % of law enforcement said local officers do not investigate human trafficking for this reason (n = 300) (QID_114). More generally, 34 % of law enforcement said this issue was one of the greatest barriers to pursuing human trafficking leads (n = 256) (QID_460). The respondents were not asked to specify whether their answers applied to cases involving sex trafficking, labor trafficking, or both. However, the figures suggest long distance travel is a barrier for those handling human trafficking cases, illustrating how one of the spatial challenges in addressing this crime.

Survivors shared their experiences of being human trafficked at various sporting events in the United States and in other countries (n = 161, QID_305). Although NOST data did not ask follow-up questions to confirm origins or geographic locations of each sporting event (QID_307), 40 % of 53 survivors identified being trafficked for labor and 13 % identified as being both labor and sex trafficked at the events. There was a broad range of transportation methods used to take them to the sporting events (QID_306).

4.5. Forced labor in supply chains

Regarding combating forced labor in supply chains, NOST respondents provide a transportation sector perspective on governance, policies, and other efforts, as well as useful suggestions. With respect to roles and responsibilities for monitoring supply chains and forced labor, 49 respondents (n = 116) stated that one of the responsibilities of the person coordinating anti-human trafficking programming in their organization is to develop an action plan in key areas (e.g., resource sharing, supply chain review) (QID_126). Survey responses indicate that the procurement/purchasing or general services departments are the most commonly responsible position for supply chain management in their company/agency/organization (n = 50, QID_131). A larger set of respondents stated that the most common position responsible for ensuring the supply chain is free of forced labor is a human resources manager (57 %, n = 279, QID_130), and a procurement officer is listed as the second most common position responsible for enforcing ethical supply chains (13 %). These results suggest that multiple roles can contribute to efforts to ensure supply chains are free of forced labor, depending on the organizational structure.

Sixty-seven (67 %) of the respondents (n = 69) state that they are unsure about the last time their organization reviewed policies and procedures to ensure forced labor is not occurring among vendors in the supply chain, while 20 % believe no such review ever took place. Only 13 % think that their policies were reviewed in the years before the survey (QID_132). Education on governance of supply chains and transparent communication can help achieve the goal of supply chains free of forced labor.

NOST respondents provide insights on potential anti-trafficking efforts in supply chains. Eighty-three (83 %) of the respondents support a zero-tolerance policy for external partners who use forced labor in their supply chain. We should note that 16 % of the respondents stated that they are unsure about such a policy (n = 244, QID_134). Of 2,186 respondents, 80 % percent of the respondents agree or strongly agree that “the demand for lower cost products by consumers should also include a demand for companies to avoid using forced labor in their supply chain.” (QID_508) (see Fig. 6).

 Asked to specify topics to include in training, 41 respondents (out of 45 who answered) mentioned their desire to learn about potential labor trafficking in product supply chains (QID_141). This response suggests strong interest in the topic. Respondents were asked to identify the educational materials that they used, if any, for awareness or training purposes. A long list anti-trafficking materials were available for multiple selections and only one out of 33 respondents and two out of 34 respondents respectively used two awareness materials for forced labor; training materials were not used at all (QID_224). These suggest that the transportation sector may be unaware of the different types of human trafficking materials available.

Transportation personnel and organizations can help combat human trafficking in supply chains through many approaches. For example, 138 respondents mention that their organization meets regularly under an agreed plan (e.g., supply chain reviews) with a core team of champions and managers as an approach to support counter-human trafficking efforts (n = 987, QID_122).

Among 208 respondents, 29 % suggest assessing product supply chains as one of the ways that fixed-based operators at airports can help combat forced labor (QID_121). Given a list of strategies for encouraging companies to use products free from forced labor in their supply chains (see Fig. 7), the top two choices were high penalties (1,229 respondents) followed by loss of tax benefits (850 respondents) (n = 1,766, QID_527).

5. Conclusion

The NOST survey data provide an indication of the current understanding of forced labor among transportation industry workers, service providers, and survivors, as well as insights into how the transportation sector can help combat human trafficking. We first observe that the frontline data mainly matches the expert input on the current understanding of forced labor, particularly as to the perception of forced labor in comparison to sex trafficking, limitations in knowledge, and the challenges of combating forced labor. NOST data also suggests that there are additional opportunities for the transportation industry to combat forced labor and exploitation. Examples include specific training topics to identify forced labor proximate to the work environment or the community, recognizing additional transportation-related venues, and considering events where labor trafficking may occur. Also, respondents also provide policy suggestions, such as assessing product supply chains or using penalties.

5.1. Limitations

There are limitations with the data and the analysis readers should consider before making general assumptions.

First are the potential issues related to COVID-19. Due to logistical
issues and challenges caused by the COVID-19 pandemic, there were a smaller number of OAs than originally committed, which most likely resulted in a smaller sample size than anticipated. Moreover, because the transportation sector was focused on recovering operations during the mid-2021 summer travel season, also coinciding with the survey deployment time, results might be impacted.

Second, is the potential bias due to sampling, selection criteria, and access to the questions. Human trafficking is a hidden crime and the study is not exhaustive for all possible persons in the target population. Thus, results should be approached as guidance and not generalizable for all populations of interest. While the NOST utilized convenience and snowball sampling to increase the survey uptake, these might also introduce additional bias because study participants might already be differing in their counter trafficking efforts by frequency, diversity, and depth. Because questions were pre-selected by the managers or point of contact for an OA, not all forced labor-related questions have been included in the questionnaire for a given OA. Thus, not all participants have the equal participation access for each question.

A third limitation, which is a result of the first two, is the limited statistical analysis conducted. The methodology excludes most analyses of survey questions with fewer than 20 responses. As a result, data for multiple forced labor-related questions, such as those addressing forced labor in seafood supply chains, are not presented in their entirety. Because no lists or figures of the population of interest totals are available, no sampling errors can be computed reliably; therefore, no standard errors are displayed alongside survey results.

A final limitation of the NOST dataset is the spatial scale at which its analysis might occur. Spatial pattern analysis can be a valuable tool for helping identify signs of human trafficking within the transportation industry. Through examination of spatial data in existing anti-trafficking research, it is possible to identify common routes, transit hubs, and geographic hotspots tied to labor and/or sex trafficking activities. However, because the names and locations of the organizations disseminating the questionnaire are known, the NOST methodology prioritized the anonymity of the survey respondents. The NOST asks survivors very few questions about where they were trafficked. Consequently, the collection of location-based data is limited in scope, with such questions drafted to identify the forms of transportation used to move trafficked persons between locations.

The analysis team tried to mitigate the instrument and question

\[\text{Fig. 6. Opinions on the Relationship between Demand in Lower Cost Products and Demand in Forced Labor Use in the Supply Chain (QID_508).}\]

\[\text{Fig. 7. Suggestions to encourage companies to use products free from forced labor in their supply chain.}\]

\[\text{An exception was made for questions that were part of the branching or logic utilized in the survey.}\]
biases, such as using bracketing and external review processes. However, some biases might still exist and be potentially undetected in the NOST questionnaire. Similarly, the analysis team worked diligently to clean the data to obtain accurate and reliable results representation. For more information about the limitation of the study, the authors refer readers to Wigle and Baglin (2023).

Moving Forward

As the first of its kind, the NOST survey is a successful mechanism for collecting frontline data which reveals some preliminary awareness of forced labor. This baseline awareness is important to efforts to enhance work settings and economic growth (UN SDG Target 8.7), as well as other sustainable development goals. We believe that the results from this survey and future versions of the NOST will significantly aid in combating forced labor and working to achieve related goals. Efforts to repeat the NOST should occur every three years to help measure benchmarks, progress, and further challenges. Particularly, organizations can utilize these results for their anti-trafficking plans in consultation with the local community and broader anti-trafficking stakeholders in the transportation industry.

Future studies will assess the survey design and evaluate methods for collecting data in a structured and intentional way to support formal analysis of spatial patterns among frontline workers. Additionally, future versions of the NOST should consider other potential external influences such as sanctuary cities. Although, how local, state, tribal, federal law enforcement cooperation may or may not be working within an area generally or within a mode was considered, there was not enough data from individual jurisdictions to try to correlate to sanctuary city status. While there is speculation within the media as to whether sanctuary city status helps or harms anti-trafficking efforts (Fernandez Campbell, 2017; Teter, 2020), a more focused data collection effort in subsequent NOSTs would allow for a more scientific exploration of this topic.

An additional focus area should be the labor trafficking of minors. The study of labor trafficking in minors is an emerging issue in the U.S. (Greenbaum et al., 2022). The NOST did not collect data from minors; also, because the questionnaire was distributed by employers in the transportation sector, it is unlikely those employers would have relevant experience pertaining to minors in the workforce. There is still a good deal of research needed to understand the characteristics, vulnerabilities, and needs of victims of minor labor trafficking, specifically in the United States. Studies show that minors are targeted in transit for recruitment and exploitation in trafficking operations (Yagci Sokat 2022a; Yagci Sokat 2022b), yet less is known about their transportation use in different stages of human trafficking. NOST data provides data relating to this but it does not confirm the timeline of a survivor’s age on when the transportation was used. It would be useful to have an extended, multi-disciplinary study on the stages and modes of transportation used for forced labor survivors, both minors and adults.

Proposed research studies of a minor will have additional requirements to protect their rights and welfare when seeking IRB approval. Data and analysis on the role of multi-modal transportation in combating human trafficking is also another area of need for finding effective prevention strategies. As legislation relating to international trade becomes more prevalent, research and action on forced labor in supply chains is needed more than ever.

CRediT authorship contribution statement

Kezban Yagci Sokat: Conceptualization, Formal analysis, Methodology, Project administration, Supervision, Visualization, Writing – original draft, Writing – review & editing. Marisa Auguste: Conceptualization, Writing – original draft, Writing – review & editing. Christi Wigle: Funding acquisition, Methodology, Visualization, Writing – review & editing. Chris Baglin: Funding acquisition, Methodology, Visualization, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

We can not share data at this point. However, once the NOST report is out, the data will be made available.

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Appendix
SURVIVOR PROVIDED QUESTION: Please provide a list of geographic locations where you remember being trafficked. Locations can be identified by the name of town, city, state, or province, or, however you remember them.

Note: Statistics include responses from participating survivors of labor and/or sex trafficking and may not represent any larger population segment.

* Out of 63 respondents, 53 confirmed the state(s) that they were trafficked in; however, an additional 10 respondents provided locations that could have been in several different states, did not know where they were trafficked or opted not to respond. Those 10 responses are not included on the map.

Source: United Against Slavery 2021 National Outreach Survey for Transportation (NOST)

Fig. 1A. Geographic Location of Trafficking.
Fig. 2A. Location of stay during the first week after exited human trafficking.

References


