INDIAN ASSOCIATION OF EPIDEMIOLOGISTS

Epidemiology International
Volume 10, Issue 3 - 2025, Pg. No. 3-11
Peer Reviewed & Open Access Journal

Research Article

Evaluating the Economic and Health Impact of Sales Tax on Personal Protective Equipment: A Cost-Benefit Analysis of Exemption

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DOI: https://doi.org/10.24321/2455.7048.202509

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How to cite this article:
Dendup P, Samdrup J, Dorjee S G. Evaluating the Economic and Health Impact of Sales Tax on Personal Protective Equipment: A Cost-Benefit Analysis of Exemption. Epidem Int. 2025;10(3): 3-11.

Date of Submission: 2025-10-08
Date of Acceptance: 2025-12-23

A B S T R A C T

Background: Personal Protective Equipment (PPE) is crucial for safeguarding workers across all industries. This paper investigates the rationale for and potential impacts of a sales tax exemption on PPE in Bhutan.

Methods: A cross-sectional, mixed-methods study combined survey data from 32 PPE suppliers in Thimphu with secondary data from the Ministry of Health and Department of Labor. The study assessed market prices, sales taxes, and workplace injury costs to evaluate the economic impact of PPE provision on employers and the healthcare system.

Results: This study reveals significant economic inefficiencies. While the government collects Nu. 19.3 million annually from PPE sales taxes, based on consumption by 41,428 workers, it simultaneously bears Nu. 650.1 million in injury-related healthcare costs for the construction sector. This yields a government cost-benefit ratio of just 0.03, indicating that tax revenue covers less than 3% of the healthcare burden. For employers, providing PPE at an average cost of Nu. 347 per worker proves 3,400 to 4,100 times more economical than bearing the average injury costs, which range from Nu. 1.2 million to Nu. 1.4 million per incident. Sector-specific analysis highlights particularly high risks for construction workers, with injury rates of 39% and associated costs of Nu. 23.6 million per 100 workers annually.

Conclusion: These findings indicate that the sales tax discourages investment in quality PPE, reduces compliance, and consequently increases the risk of workplace accidents and injuries. This leads to substantial healthcare expenditures and productivity losses. The study concludes with policy recommendations, including the elimination of the sales tax on PPE and the strengthening of enforcement mechanisms, including mandatory certification of PPE, to enhance occupational safety, reduce public healthcare burdens, and promote sustainable economic growth.

Keywords: Personal Protective Equipment (PPE), Tax Exemption, Occupational Health and Safety, Healthcare Costs, Cost-Benefit Analysis, Bhutan

Introduction

The global landscape has underscored the critical role of Personal Protective Equipment (PPE) in protecting workers from a range of occupational hazards, including physical injuries, exposure to infectious agents, and environmental contaminants.[1] Despite its undeniable importance, the accessibility and affordability of high-quality PPE remain significant challenges, particularly in developing economies. In Bhutan, like many nations, the imposition of sales tax on PPE contributes to elevated retail prices, potentially hindering its widespread adoption and undermining efforts to foster safer work environments.

This paper proposes a comprehensive analysis of the economic and health implications of a tax exemption on PPE in Bhutan. The primary objective is to evaluate whether the revenue generated from the current sales tax on PPE justifies the societal costs associated with workplace injuries and illnesses that could be mitigated by enhanced PPE usage. We aim to demonstrate that reducing or eliminating this tax could lead to substantial improvements in occupational safety and health (OSH) outcomes, reductions in healthcare expenditures, and long-term economic benefits. The study specifically focuses on the construction sector due to its high-risk nature, significant workforce, and the availability of relevant local data.

The subsequent sections of this paper delve into the existing literature on PPE, taxation, and OSH, detail the methodology employed for data collection and analysis, present the key findings from market price assessments and cost-benefit analysis, discuss the implications of these findings, and conclude with actionable policy recommendations and implementation strategies.

The importance of PPE as a primary control measure in the hierarchy of controls for occupational hazards is well-established.[2] Effective PPE use is directly correlated with reduced incidence of workplace injuries, illnesses, and fatalities across various high-risk sectors, including construction, manufacturing, and healthcare.[3,4] However, the effectiveness of PPE is contingent upon its availability, affordability, and proper utilization.[3]

Economic Impact of Taxation on Essential Goods

Economic studies have explored the impact of taxation on essential goods and services. While taxes generate government revenue, they can also increase the final cost to consumers, potentially reducing demand or encouraging the use of cheaper, substandard alternatives.[5] In the context of safety equipment, a sales tax can act as a disincentive for employers and individuals to invest in necessary protective gear, particularly in industries with tight profit margins or among low-wage workers.[6,7] This phenomenon can lead to a "cost-safety paradox," where the pursuit of short-term revenue through taxation inadvertently increases long-term societal costs related to health and productivity.

Economic Burden of Workplace Injuries and Illnesses

The economic burden of workplace injuries and illnesses is substantial, encompassing both direct costs, such as medical treatment, rehabilitation, and compensation, as well as indirect costs, including lost productivity, administrative expenses, legal fees, and diminished worker morale.[8-10] Research consistently shows that indirect costs often far exceed direct costs, with ratios ranging from 4:1 to 17:1, though a conservative estimate usually places it around 2:1.[11-13] These costs are borne by individuals, employers, and the government, straining healthcare systems and impacting national productivity. For instance, studies by the International Labour Organization (2019) highlight that work-related accidents and diseases result in significant global economic losses, underscoring the need for proactive prevention strategies.[14]

Global Perspectives and Country Examples

Tax waivers for workplace safety Personal Protective Equipment (PPE) is a crucial fiscal tool to encourage businesses to enhance occupational health and safety (OSH). These policies aim to reduce the financial burden on employers, thereby incentivizing the provision of essential safety gear.[15]

In Malaysia, the National Institute of Occupational Safety and Health (NIOSH) has actively pushed for tax rebates on imported PPE, such as harnesses and masks, which are often subject to import duties and sales tax.[16] This advocacy highlights a direct effort to make essential safety equipment more affordable and promote compliance with national OSH laws. Similarly, in Australia, while not a direct "waiver" at the point of sale, businesses can claim tax deductions for "protective items, equipment, and products" like safety helmets and visors, effectively reducing their taxable income.[17] This approach indirectly lowers the cost of PPE for employers.

In India, certain PPE items fall under the lowest Goods and Services Tax (GST) bracket (5%), and during the COVID-19 pandemic, the government temporarily waived GST on PPE kits, masks, and other essential medical gear to enhance access for businesses and health workers.[18]

Occupational Health and Safety Landscape in Bhutan

In Bhutan, occupational health and safety challenges are increasingly recognized. Reports from the Ministry of Industry, Commerce, and Employment, Department of Labor[19] indicate a prevalence of non-compliance with OHS

regulations, often citing the use of substandard PPE or a complete lack thereof. The Ministry of Health's Annual Health Bulletin (2023) provides data on workplace injuries, although specific linkages to PPE non-compliance are not always explicitly detailed. [20] Studies on construction industry accidents in Bhutan have identified a strong correlation between the non-use of PPE and injury rates.[21] Similarly, research on occupational diseases, such as Noise-Induced Hearing Loss (NIHL) and Small Airway Diseases (SAD), in Bhutanese industries indicates that inadequate protective measures are a significant contributing factor.[22,23]

While the existing literature highlights the general importance of PPE and the costs associated with workplace injuries. There is a gap in particular analyses that quantify the cost-benefit of tax exemptions on PPE within the unique socio-economic context of Bhutan. This study aims to fill this gap by providing empirical data and a localized cost-benefit analysis to inform policy decisions.

Methodology

Study Design

This study employs a cross-sectional, mixed-methods approach, combining descriptive analysis of market prices and tax structures with a quantitative cost-benefit analysis (CBA). The primary aim is to evaluate the financial implications of a tax exemption on PPE from both government and employer perspectives, taking into account the costs associated with workplace injuries and illnesses.

Data Collection

Primary Data

A survey was conducted across 32 PPE stores distributing PPE within the Thimphu region of Bhutan. The study aimed to assess the retail pricing of five essential PPE items commonly used in the construction industry: helmets, safety boots, harnesses, gloves, and reflective jackets. Data collected included the lowest and highest market prices for each item. The stores were selected based on their accessibility and known inventory of PPE.

Secondary Data

- **Occupational Health and Safety Data**: Insights into PPE utilization trends and compliance were drawn from the Ministry of Industry, Commerce and Employment, Department of Labour's annual inspection reports, specifically Improvement Notices (IN) and Penalty Memos (PMO) related to PPE adherence (Ministry of Industry, Commerce and Employment, Department of Labour, 2023a).
- **Workforce Data**: The number of foreign workers in the construction sector was obtained from the Foreign Worker Management System.[19] At the time of this study, this figure stood at approximately 41,428.
- **Healthcare Cost Data**: Information on healthcare expenses linked to workplace injuries and illnesses, as well as morbidity and mortality rates, was sourced from the Ministry of Health's Annual Health Bulletin[20] other relevant internal reports. Average unit costs for various healthcare services at regional referral hospitals (JDWNRH in Thimpu, and Regional Hospitals at Gelephuand Mongar) were utilized.[24]
- **Compensation Data**: Direct costs to employers due to permanent and partial disability, and fatal accidents, were derived from compensation provisions under the Occupational Health and Safety Regulation.[19]

Study Scope and Focus

The investigation specifically targeted the construction sector due to its inherent high-risk nature and the significant workforce employed, making it a representative case study for all sectors, given time and resource constraints. The analysis of PPE pricing and taxation was concentrated on the five aforementioned basic PPE items.

Data Analysis

- **Tax Analysis**: The market prices of PPE, which already include a 10% Bhutan Sales Tax (BST), were used to calculate the total tax imposed. Calculations were performed to estimate the total tax revenue generated from providing PPE to 41,428 foreign workers at the current 10% tax rate. The analysis also extended to typical private house construction projects (30 workers) and government construction projects (500 workers).
- **Impact on Occupational Health and Safety**: The analysis assessed the qualitative impact of sales tax on PPE on investment in high-quality PPE, compliance rates, and the risk of workplace accidents, drawing upon existing reports and studies. Injury rates of 12-14% (general global estimate) 25 and 39% (Bhutanese construction sector specific),21 were used for calculations.
- **Healthcare Cost Assessment**: An evaluation of healthcare expenses linked to workplace injuries and illnesses was conducted. Average unit costs for inpatient surgical and medical cases were calculated from the three referral hospitals. The analysis also considered the indirect costs of injuries, applying a conservative 2:1 ratio of indirect to direct costs.[13] The morbidity impact was assessed by estimating the number of injured workers based on injury rates and calculating the total healthcare cost to the government. The mortality impact considered the direct and indirect costs of fatal accidents to employers.
- **Cost-Benefit Analysis (CBA)**: The CBA was performed from two perspectives
- **Government Position**: Comparing the estimated tax revenue generated from PPE sales with the estimated healthcare costs borne by the government due to

workplace injuries (morbidity and mortality). Cost-Benefit Analysis (CBAR) ratio = (Revenue from 10% sales tax on PPE) / (Healthcare services cost to injured workers)

- **Employer Position**: Comparing the potential savings from avoided compensation costs (due to reduced injuries) with the additional cost of PPE if taxes were reduced (though this was implicitly framed by showing the current burden).

It is essential to note that, due to data limitations, the CBA primarily focused on tangible costs. Intangible costs (e.g., pain and suffering, reduced quality of life, reputational damage) were acknowledged but not quantified in the analysis.

Results

Market Prices and Tax Analysis on Basic PPE

A market survey conducted across 32 hardware stores in Thimphu revealed significant price variability for basic Personal Protective Equipment (PPE) items. The reported prices already include the Bhutan Sales Tax (BST) of 10%, which is levied at the point of retail. Table 1 summarizes the lowest, highest, and average market prices for five essential PPE items.

Using these average market prices, the estimated total cost of providing PPE for Bhutan's 41,428 foreign construction workers amounts to approximately Nu. 143.03 million, inclusive of the 10% BST. Based on this valuation, the total tax imposed under the current rate is Nu. 13.00 million. A breakdown of tax implications at various workforce scales, including small private projects (30 workers) and large government projects (500 workers), is presented in Table 2.

Table 1.Market Price of Basic PPE in Thimphu (in Nu.)

PPE Item	Lowest Price (Nu.)	Highest Price (Nu.)	Average Price (Nu.)
Helmet	100	395	247.5
Safety Boot	650	2,200	1,425.0
Harness	230	2,700	1,465.0
Gloves	45	250	147.5
Reflective Vest	85	250	167.5

Note: The exchange rate of Nu to USD – 1 USD = Nu. 89.06 as of August 11, 2025

Table 2.10% Tax Analysis on PPE for 41,428, 30, and 500 workers

PPE Item	Avg. Unit Price	Tax per Unit	Tax per unit, per worker		
			41,428 Workers	30 Workers	500 Workers
Helmet	248	25	1.04	0.0008	0.0125
Boot	1,425	143	5.92	0.0043	0.0715
Harness	1,465	147	6.09	0.0044	0.0735
Reflective Vest	168	17	0.70	0.0005	0.0085
Gloves	148	15	0.62	0.0005	0.0075
Total	3454	347	14.38	0.0104	0.1735

For a typical small-scale construction project employing 30 workers, the total tax burden on the employer for PPE provision amounts to approximately Nu. 0.0104 million. In comparison, a large-scale government construction project involving 500 workers incurs a tax liability of Nu. 0.173 million for PPE alone.

While public sector projects may allocate up to 4% of the total contract value for Occupational Health and Safety (OHS) measures, contractors often designate a fixed PPE budget ranging from Nu. 0.05 to 0.20 million. This fixed allocation may be insufficient to workplace safety compliance.

Health Impact of BST on Personal Protective Equipment (PPE)

The imposition of sales tax on PPE introduces a significant financial disincentive for employers, particularly in cost-sensitive sectors such as construction and manufacturing. This additional expense often discourages investment in higher-quality protective gear, contributing to reduced compliance with occupational safety standards. According to the Department of Labour (2024), the prevalence of substandard PPE and instances of non-provision are frequently linked to the elevated costs resulting from taxation.[19] Such practices directly undermine workplace safety and elevate the risk of occupational injuries.

International evidence suggests that between 12% and 14% of workplace injuries can be attributed to the non-use of appropriate PPE (OSHA/NIOSH, 2020). The situation in Bhutan reflects an even more concerning trend: studies report that 39% of construction-related injuries involve workers who were not wearing PPE at the time of the incident. In comparison, the manufacturing sector shows a similarly troubling figure of 22.4%. These statistics underscore the urgent need to reconsider the taxation of essential safety equipment, particularly in high-risk industries.

Morbidity Implications of Inadequate PPE Use

The use of Personal Protective Equipment (PPE) in the workplace plays a vital role in preventing occupational injuries and illnesses. Inadequate or inconsistent use of PPE has been closely linked to increased rates of work-related health conditions. The Ministry of Health's Annual Health

Bulletin (2023) reports an average of 20,480 workplace injuries annually in Bhutan.[20] While not all of these injuries are directly attributable to the non-use of PPE, a significant proportion is likely preventable through proper and consistent use of protective equipment.

Specific occupational health outcomes such as Occupational Noise-Induced Hearing Loss (ONIHL) and Small Airway Diseases (SAD) are particularly relevant. The study found that 27.9% of workers across various sectors in Bhutan are affected by ONIHL.[23] Similarly, it was reported that 24.1% of industrial workers suffer from SAD.[22] Both conditions are recognized as preventable through appropriate occupational health interventions, particularly through the provision and proper use of PPE.

Government Health Expenditure Linked to Occupational Morbidity

Bhutan's healthcare system is entirely publicly funded, and services are provided free of cost at the point of use. As a result, the economic burden of workplace injuries falls entirely on the government. The Ministry of Health has published a national estimate of the cost of healthcare services across all public hospitals in the country.[24] Drawing from this source, data specific to the Jigme Dorji Wangchuck National Referral Hospital (JDWNRH), Bhutan's primary tertiary care facility, offers an illustrative case of healthcare service utilization:

- Outpatient Department Services: Nu. 597 per patient
- General Inpatient Care: Nu. 17,848 per admission (2,810 bed-days)
- Medical Inpatient Care: Nu. 22,616 per admission (2,458 bed-days)
- Surgical and Medical Inpatient Care: Nu. 16,981 per admission (2,911 bed-days)

These figures represent average government expenditure per patient receiving each type of care, incorporating associated diagnostic, therapeutic, and supportive services. Although the data are not disaggregated by cause, it is reasonable to infer that workplace injuries account for a for a significant share of these costs, particularly in the surgical and medical inpatient categories.

Estimated Public Healthcare Costs Attributable to PPE-Preventable Morbidity

To approximate the healthcare burden of PPE-preventable injuries, Table 3 presents projected costs per 100 workers across selected categories. These estimates apply the average treatment cost of Nu. 20,140.30 for surgical and medical inpatient care, which serves as a conservative proxy for cases involving occupational accidents. A 2:1 ratio of indirect to direct costs is used to capture broader economic impacts, rehabilitation costs.

These estimates underscore the financial and institutional costs associated with inadequate PPE compliance. They further support the argument that preventive investments in occupational health, particularly through improved access to certified PPE and training, can substantially reduce the economic burden on Bhutan's public health system.

Table 3.Estimated Government Average Healthcare Cost per 100 Workers Attributable to PPE-Preventable Injuries

Sector	Average Unit Cost (Nu)	Health Cost for every 100 workers (in million)	Indirect Cost (2:1) (in million)	Total Cost (in million)
Construction Industry Accident (39%)	20,140.30	0.79	1.57	2.36
Manufacturing Industry (22.4%)	20,140.30	0.45	0.90	1.35
ONIHL (28%)	1,239.70	0.03	0.07	0.10
SAD (24.1%)	1,239.70	0.03	0.06	0.09
AHB (20,480 injuries annually)	20,140.30	412.47	824.95	1,237.42
Globally (12-14%)	20,140.30	0.24	0.48	0.73

Mortality Implications of Inadequate PPE Use

The diminished utilization of Personal Protective Equipment (PPE) in occupational settings characterized by elevated hazards substantially contributes to increased mortality rates among workers. According to data reported by the Department of Labour (2023a), 19 fatal workplace injuries were recorded within the review period. However, the accuracy of this figure may be compromised by underreporting. Table 4 outlines the direct and indirect economic burdens incurred by employers as a result of workplace injuries, including permanent disabilities and fatal accidents, in accordance with prevailing Occupational Health and Safety (OHS) regulatory frameworks. Notably, the unit cost attributable to a fatal workplace incident may reach as high as Nu. 1.2 million. Extrapolating from the 19 fatalities documented, the aggregate employer cost is estimated to be approximately Nu—22.7 million.[19]

Table 4.Direct Cost of Workplace Injury to the Employer (Nu. in million)

Types of Injury	Permanent Disablement	Temporary Disablement	Fatal Accident
Max Cost	0.68	0.51	0.50
Min Cost	0.27	0.08	0.29
Average Cost	0.47	0.30	0.40
Indirect Cost (2:1)	0.95	0.59	0.80
Total Cost	1.42	0.89	1.19

Long-Term Healthcare Costs

Occupational injuries and illnesses frequently precipitate chronic health conditions and enduring disabilities, necessitating prolonged medical intervention. These ongoing healthcare needs result in substantial cumulative costs borne by both the affected individuals and the healthcare system at large. Consequently, such long-term expenditures represent a critical consideration in evaluating the full socioeconomic impact of workplace hazards.

Government Revenue from PPE Sales Tax

Table 5 illustrates the annual revenue generated from a 10% sales tax on the five PPE items, based on the estimated consumption by 41,428 foreign workers in the construction industry. The total revenue amounts to Nu. 19.30 million. The "Coefficient" for each PPE item in Table 5 represents the estimated average number of units of that specific PPE item consumed or required by one worker over a period of one year.

Table 5.Revenue from 10% Sales Tax on PPE (in Nu.)

PPE Type	Coefficient	Average Market Rate	Total Cost (in million)	10% Tax (per unit)	Total Tax Imposed (in Million)
Helmet	1	248	102.5	25	1.0
Safety Boot	1	1,425	59.0	143	5.9
Harness	0.3	1,465	60.7	147	1.8
Reflective Vest	2	168	6.9	17	1.4
Gloves	15	148	6.1	15	9.2
Total		3,454	143.0	347	19.3

Cost-Benefit Analysis (CBA)

The cost-benefit analysis evaluates the economic justification for maintaining the 10% sales tax on Personal Protective Equipment (PPE) by comparing government revenue with the broader societal and financial costs of workplace injuries. The findings expose a significant fiscal imbalance, casting doubt on the sustainability and rationality of the current taxation policy.

From the government's perspective, the revenue generated from the PPE sales tax, Nu. 19.3 million annually, this is vastly outweighed by the economic burden of occupational injuries. In the construction sector alone, where injury rates reach 39%, the total cost amounts to Nu—650.1 million annually, assuming a conservative Cost- Benefit Analysis (CBA) ratio of 0. 03. Even when applying the global average injury rate of 12% and a higher CBAR of 0.10, the cost remains substantial at Nu. 200.3 million. In both scenarios, the tax revenue covers only 3% to 10% of the injury-related expenses, highlighting the strain this mismatch places on Bhutan's healthcare system and public finances.

From the employer's standpoint, the current tax structure creates counterproductive economic incentives. The average cost of providing PPE is merely Nu. 347 per worker, translating to Nu. 0.35 million per 1,000 workers. In stark contrast, the price of a single workplace fatality is estimated at Nu. 1.2 million, over 3,500 times the PPE cost, while the price of a case resulting in permanent disability rises to Nu. 1.42 million, or 4,100 times higher. These figures can disincentivize investment in safety, potentially leading to increased liability and costs for employers in the long term.

Sector-specific analysis reveals that the heaviest burdens fall on high-risk industries. The construction sector, with an injury rate of 39%, incurs an average cost of Nu. 23.6 million per 100 workers annually, making it the most affected occupational group. Similarly, the manufacturing sector, with an injury rate of 22.4%, faces costs of Nu—13.5 million per 100 workers each year, still a substantial economic strain.

Table 6.Cost–Benefit Analysis of Workplace Injury Scenarios from Government and Employer Perspectives, including tax revenues, direct and indirect costs, total costs, and cost–benefit ratios for varying injury outcomes and PPE investment

Perspective	Scenario	Tax Revenue (nu in million)	Direct Costs (Nu in million)	Indirect Costs (2:1)	Total Cost (Nu in million)	CBA Ratio (Cost/ Saving)	Implication
Government	Global Injury Rate (12%)	19.3	100.2 (healthcare)	100.2	200.3	0.1	Tax revenue covers only 10% of injury costs.
	Construction (39%)	19.3	216.7 (healthcare)	433.4	650.1	0.03	Tax revenue only 3% of injury costs.
Employer	PPE Provision (1 worker)	-	-	-	0.0003	-	Base investment
	Permanent Disability	-	0.47 (compensation)	0.95	1.42	1:4,100	1 injury = Cost of PPE for 4,100 workers.
	Fatal Accident	-	0.40 (compensation)	0.8	1.2	1:3,500	1 death = Cost of PPE for 3,500 workers.

Discussion

The findings of this study provide compelling evidence that the current 10% sales/import tax on PPE in Bhutan, while contributing to government revenue, inadvertently imposes a far greater economic burden on society through increased healthcare expenditures and productivity losses stemming from preventable workplace injuries and illnesses. The cost-benefit analysis ratios of 0.10 and 0.03 clearly demonstrate that the revenue generated from PPE sales tax is dwarfed by the costs associated with inadequate PPE usage and subsequent health consequences. This aligns with broader economic principles where taxes on essential protective goods can create negative externalities, shifting costs from the point of sale to the public health system and individual welfare

The analysis of market prices indicates that the sales tax directly contributes to higher PPE costs, which, as evidenced by Department of Labor reports and local studies, discourages investment in high-quality PPE and leads to lower compliance rates. This creates a vicious cycle: higher costs lead to reduced usage, which leads to more accidents and, subsequently, higher healthcare costs. The significant injury rates observed in the Bhutanese construction sector (39%) underscore the issue with urgency.

The substantial healthcare costs borne by the government, particularly for inpatient treatments, and the cumulative impact of thousands of workplace injuries annually.[24] They represent a significant strain on public finances. The indirect costs, estimated at twice the direct costs, further amplify this burden, affecting productivity and overall economic output.[8] While the study did not quantify intangible costs, the emotional and social impact of morbidity and mortality on workers and their families is immeasurable.

From the employer's perspective, the direct and indirect costs of workplace injuries and fatalities are substantial, far exceeding the cost of providing PPE. This suggests that even without a tax exemption, employers have a strong financial incentive to invest in PPE. However, the sales tax adds an unnecessary barrier, particularly for smaller enterprises or those operating on thin margins, which can potentially lead to non-compliance and ultimately result in higher costs through compensation and lost productivity in the long run.

The current policy of taxing PPE appears to be a false economy. The relatively modest revenue generated (Nu. 19.3 million) is overshadowed by the hundreds of millions of Ngultrums in healthcare costs and economic losses due to preventable incidents. A tax exemption on PPE would not only make these essential items more affordable and accessible, thereby enhancing OSH compliance, but also contribute to a healthier workforce, reduced burden on the public healthcare system, and improved national productivity. Such a policy would align Bhutan with international best practices that prioritize worker safety and public health.

Study Limitations

While the underlying concepts and principles employed in this study are broadly applicable, practical constraints serve as a representative case study for all industries. The survey focused primarily on five commonly used Personal Protective Equipment (PPE) items, excluding safety harnesses, which may have introduced a generalization bias to the findings. Furthermore, the reliance on secondary data for crucial elements, such as workplace injuries, healthcare expenses, and morbidity/mortality rates, means that the quality and depth of the findings are inherently dependent on the completeness and accuracy of these existing reports from relevant agencies. It is also important to note that this study did not capture the full unit cost of employees resulting from workplace accidents or injuries, beyond direct compensation. Crucially, the study also did not account for the potential impact of other policy interventions, such as the enforcement of PPE standards through inspections or mandatory recertification of PPE imported, nor did it delve into other possible compounding factors that could influence workplace safety and health outcomes beyond the scope of tax policy. These unexamined variables may silently influence the real-world effects, and their exclusion represents an acknowledged limitation of this analysis.

Conclusion and Recommendations

This study unequivocally demonstrates that the current sales tax on personal protective equipment (PPE) in Bhutan creates a significant financial disincentive for its widespread adoption, leading to increased workplace injuries, higher healthcare expenditures, and substantial economic losses that far outweigh the tax revenue generated. The findings from the cost-benefit analysis highlight a clear economic argument for reconsidering the taxation of essential safety equipment.

Based on these findings, the following policy recommendations and implementation strategies are proposed to enhance occupational health and safety, reduce healthcare burdens, and foster sustainable economic development in Bhutan.

In response, it is strongly recommended that the Department of Labour, in collaboration with the Ministry of Finance, explore and implement a tax exemption on all essential PPE, applying to both imported and domestically produced items (if any). Removing this financial barrier will enhance access to quality safety equipment and promote fair market conditions. Complementing this exemption, a clear and progressively enforced penalty system should be established to ensure compliance with PPE regulations among employers, suppliers, and employees. Effective implementation will require legislative amendments, a government-maintained list of eligible PPEs, and a nationwide awareness campaign to educate stakeholders about the exemption and the importance of PPE. Together, these measures will significantly improve occupational health and safety while fostering sustainable economic development.

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