

ECONOMIC IMPACT ON THE USAGE OF STANDARDS

FOR THE ELECTRICAL & ELECTRONIC (E&E), FOOD
& BEVERAGE (F&B) AND AGRICULTURE SECTORS

EXECUTIVE SUMMARY



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FOR THE ELECTRICAL & ELECTRONIC (E&E), FOOD & BEVERAGE (F&B) AND
AGRICULTURE SECTORS



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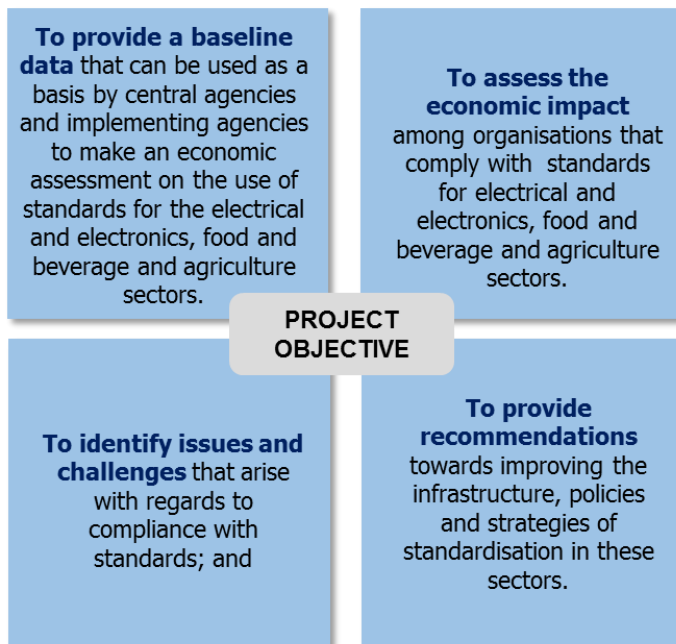
A PROJECT COMMISSIONED BY THE DEPARTMENT OF STANDARDS MALAYSIA

1. INTRODUCTION

1.1 About the Project

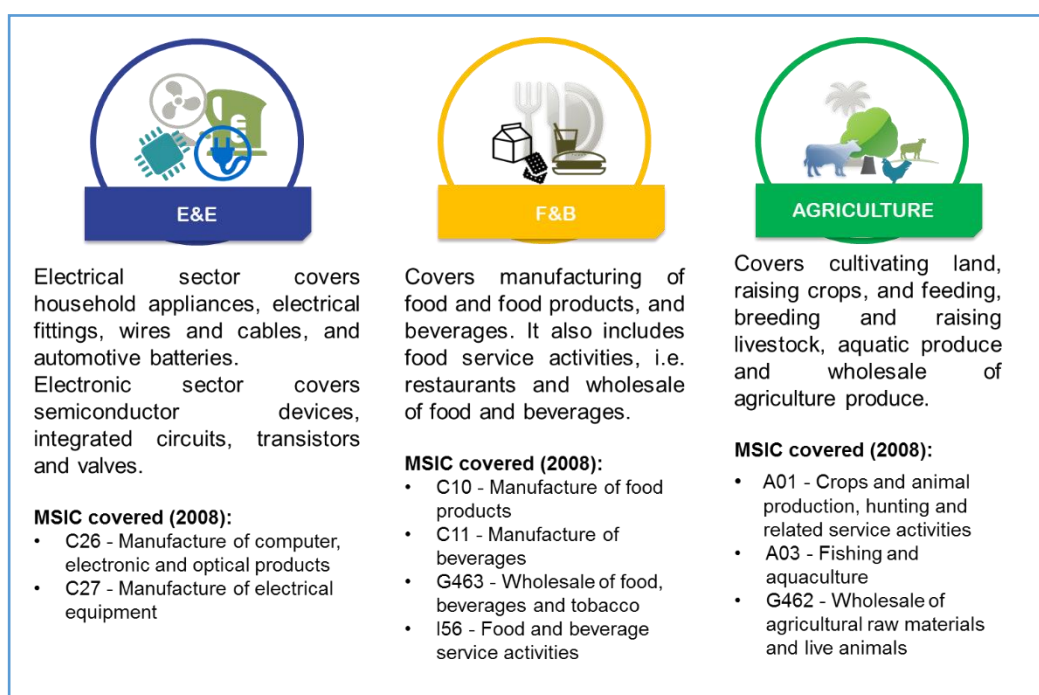
Standards have become, undisputedly the international language of commerce. Adherence to agreed product and service specifications strengthens international trade, enabling trillions of dollars of goods to flow across borders. The common acceptance of standards is fundamental to success of a robust, fair and free trade. The purpose of this project is to cater for the following objectives:

The findings and recommendations provided can be used as a basis to identify and priorities the economically-driven market relevant projects for future development of Malaysian Standards



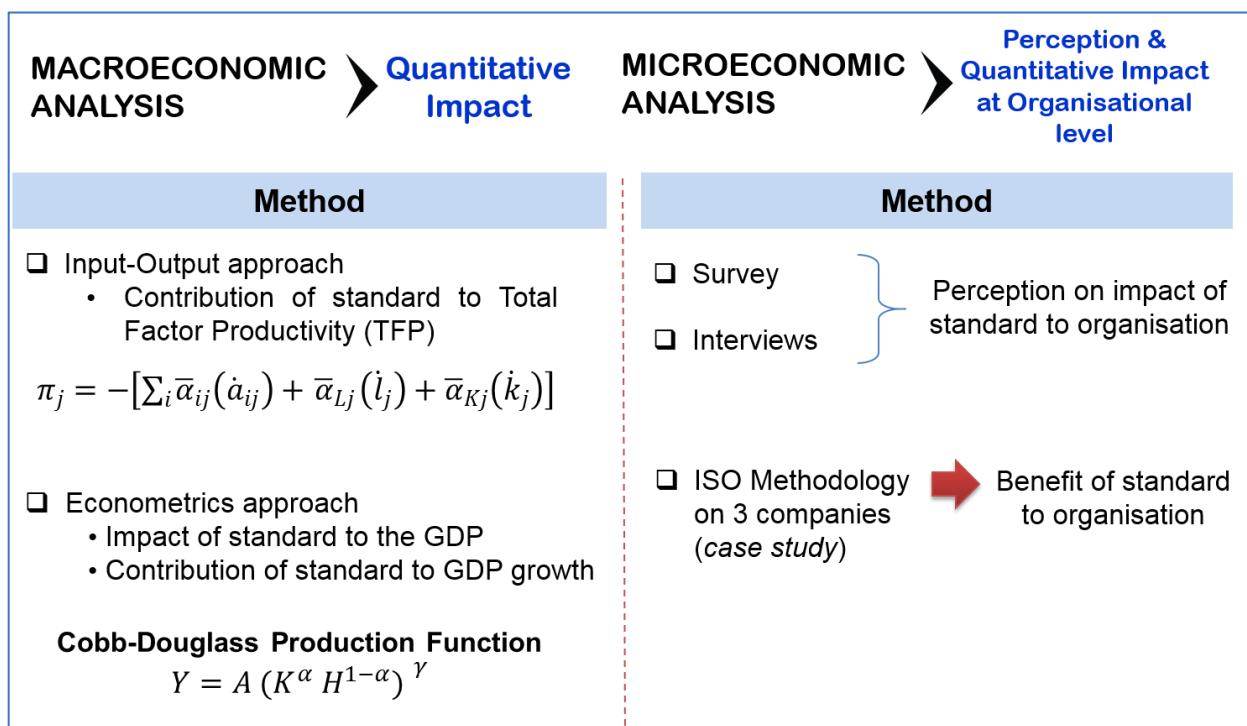
1.2 Scope of the Project

The study covers the following industry classification of the 3 sectors:



1.3 Project Methodology

This study investigates both the micro and macro-economic impact of standards as illustrated by the following chart.



2. MACROECONOMIC ANALYSIS (IMPACT ANALYSIS)

Input Output

Contribution of standards to total factor productivity (TFP):

POSITIVE



E&E

0.15%



F&B

0.08 %



AGRICULTURE

0.02 %

2.1 Input-Output approach (TFP)

The results and findings of the Input-Output analysis confirm that standards contributed positively to the Total Factor Productivity (TFP) of Malaysia.

2.2 Econometrics approach (GDP)

The econometrics approach finding shows that the contribution of standards to Gross Domestic Product (GDP) over the period of 13 years (2001 to 2013) is positive and statistically significant. The analysis reveals a strong and positive relationship between standards and economic performance. A 1% increase in standards will increase the GDP by 0.02% (for E&E), 0.26% (for F&B) and 0.06% (for Agriculture). Standards also contribute to 1.3% (for E&E), 4.6% (for F&B) and 1.5% (for Agriculture) of GDP growth.

Econometric GDP

1% increase in standard developed contribute to GDP of :

POSITIVE



E&E

0.02 %



F&B

0.26 %












AGRICULTURE

0.06 %

Growth rate	E&E	F&B	AGRICULTURE
Growth rate of standards (Avg. 2001-2013, in %)	22.6	7.5	10.5
Impact in % points on GDP	0.02	0.26	0.06
Growth rate of GDP (Avg. 2001-2013, in %)	1.5	5.7	4.0
Contribution of standards to the growth of GDP (Avg. 2001-2013, in %)	1.3	4.6	1.5

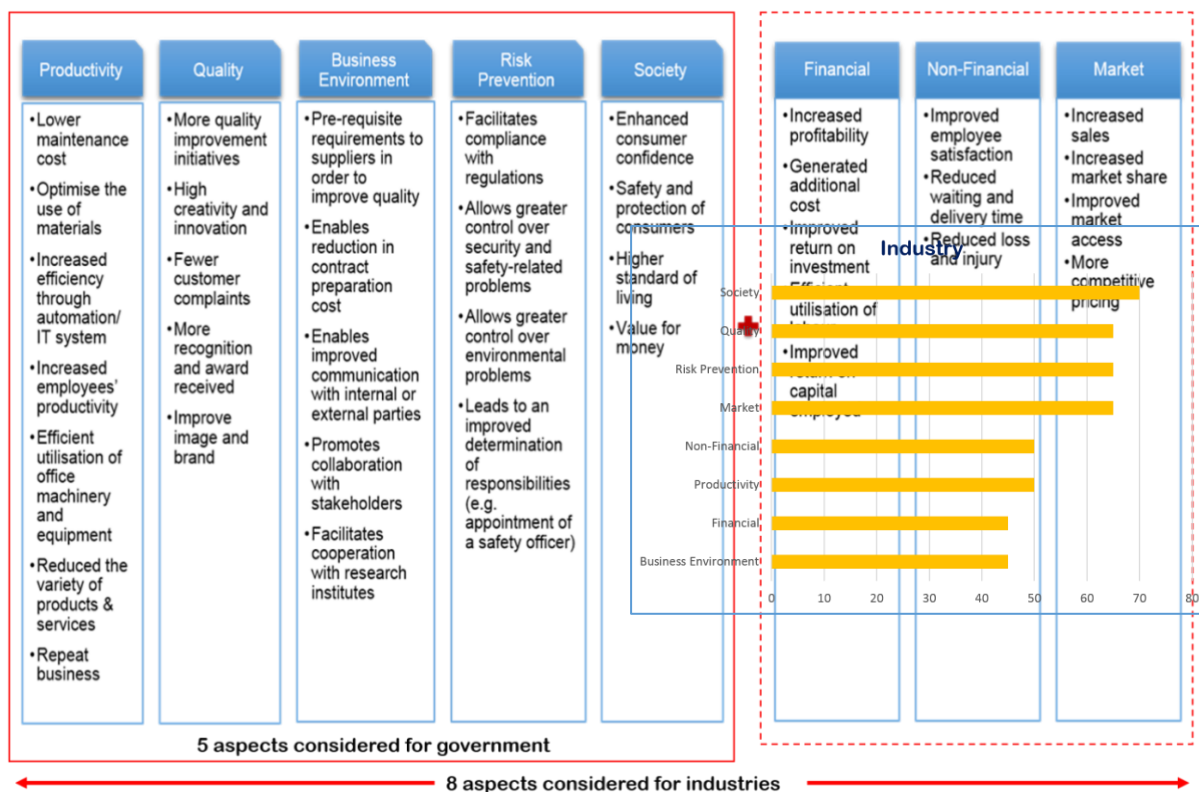
2.3 Comparative summary of similar econometrics analysis

							  		
	Germany	Canada	Australia	New Zealand	United Kingdom	France	Malaysia (2001-2013)		
Year of study	1999	2007	2006	2010	2005	2008	2015		
Period subject to analysis	1961 - 1990	1981 - 2004	1962 - 2004	1978 - 2009	1948 - 2002	1950 - 2007	2001 - 2013		
Estimated function (method used)	GDP Output	Labour productivity	GDP Output	Labour productivity	Labour productivity	GDP Output	Input-Output & GDP Output		
Type of standards considered as variable	DIN	CNS	AS & AS/NZ	NZ & AS/NZ	BS	AFNOR	MS		
Sectors covered	All	All	All	All	All	All	E&E	F&B	Agri
Growth rate of standards (% p.a.)	12.9	0.7	4.6	4.1	5.1	6.8	10.5	7.5	22.6
Impact in % points on GDP	0.9	0.2	0.8	N/A	0.3	0.8	0.06	0.26	0.02
Growth rate of GDP (% p.a.)	3.3	2.7	3.6	2.1	2.5	3.4	4.0	5.7	1.5
Contribution to growth of GDP (%)	27.3	9.0	21.8	N/A	11.0	23.8	1.5	4.6	1.3
<div> <div></div> <div>GDP for all sectors</div> <div></div> </div>									

NOTE. Method used is in line with other studies. Data used was provided by DOS, with value added at constant 2005. The finding of this study is in line with the trend of other studies.

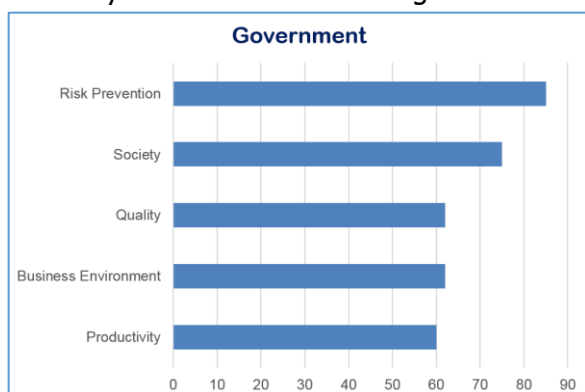
3. MICROECONOMIC ANALYSIS

































3.1 Finding from the Survey (questionnaire)





A survey was conducted to gauge the impact on the usage of standards for government agencies and industries. The impact was measured against 5 aspects for the government sector and 8 aspects for the industry sector. Each aspect was further sub-divided into several indicators as illustrated in the figure above. The survey was grouped into 5 ratings whereby 'significant impact' is considered for the response which indicated ratings of 4 and 5.

Similarity exists for both the government and industry sectors where they believe that standards benefit them the most in the aspects of risk prevention, society and quality. Industry also recognises that standards contributed significantly to the aspect of market such as improved market access and increased sales.



		 E&E	 F&B	 AGRICULTURE
PRODUCTIVITY				
QUALITY				
BUSINESS ENVIRONMENT				
RISK PREVENTION				
SOCIETY				
MARKET	N/A			
FINANCIAL	N/A			
NON-FINANCIAL	N/A			

 Neutral
  Significant

The figure illustrates the extent of contributions of standards within the relevant government agencies and the 3 sectors of industry. F&B is the sector which recorded the highest impact of standards, followed by E&E and Agriculture sectors.

NOTE. Neutral – Score of 1 to 3; Significant – Score of 4 to 5

Summary of survey findings for government and industry is illustrated in the following figures.

GOVERNMENT

Participation in standardisation activities and impact of standards

90% 
 Participated in
 standardisation activities
 at the national and/or
 international levels

70% 
 Standards **significantly impact**
 productivity, quality and society
 as well as business environment
 and risk prevention

Summary of findings - Government

80% 
 Used standards in
 their act/ regulations

20% 
 Standards contributed to a
 large extent to innovation

Benefit of standards - Government

90% 
 Society &
 Customer
 Standards are used as an
 enabler to enhance public
 confidence and
 satisfaction


75% 
 Quality
 Standards have helped
 government initiate more
 quality improvement
 activities

50% 
 Risk
 Prevention
 Standards complement
 government's role in protection
 of health, safety of Malaysians
 and the environment

INDUSTRY

Participation in standardisation activities and impact of standards

70% 
**Participated in
 standardisation activities**
 at the national and/or
 international levels

50% 
 Standards **significantly
 impact** society, quality,
 risk prevention
 and market

35% 
 Standards contributed to
**a large extent to
 innovation**

Benefit of standards → Industry



Quality & Productivity
65%

- Standards minimise rejections of products due to non-compliance and compensation claims
- Standards are used as basis for pre-requisite requirements to control the quality of supplied materials

80% Standards improved business operations, reduced loss and injury, and reduced waiting and delivery time

80% 
**Society &
 Risk
 Prevention**

Standards enhanced customer confidence and safety of consumer and improved image and branding

35% 
Technology

- Standards act as a catalyst for innovation of products, process and technology
- Standards disseminate knowledge and technical information, and by supporting the efficient functioning of organisations

Standards and Organisation growth



Industries confirm that standards contributed significantly to organisational growth

3.2 Finding from the Interviews

PURPOSE

- To attain more information
- Support the data collected during the survey

SELECTION OF INTERVIEWEES

- Categories of companies – a mixed selection of companies with various activities
- Different coverage of products produced

METHODOLOGY

- One-to-one interview between representatives from the selected companies
- Malaysian Pineapple Industry Board (MPIB) + 28 companies have been interviewed; 8 from E&E, 9 from F&B and 11 from Agriculture

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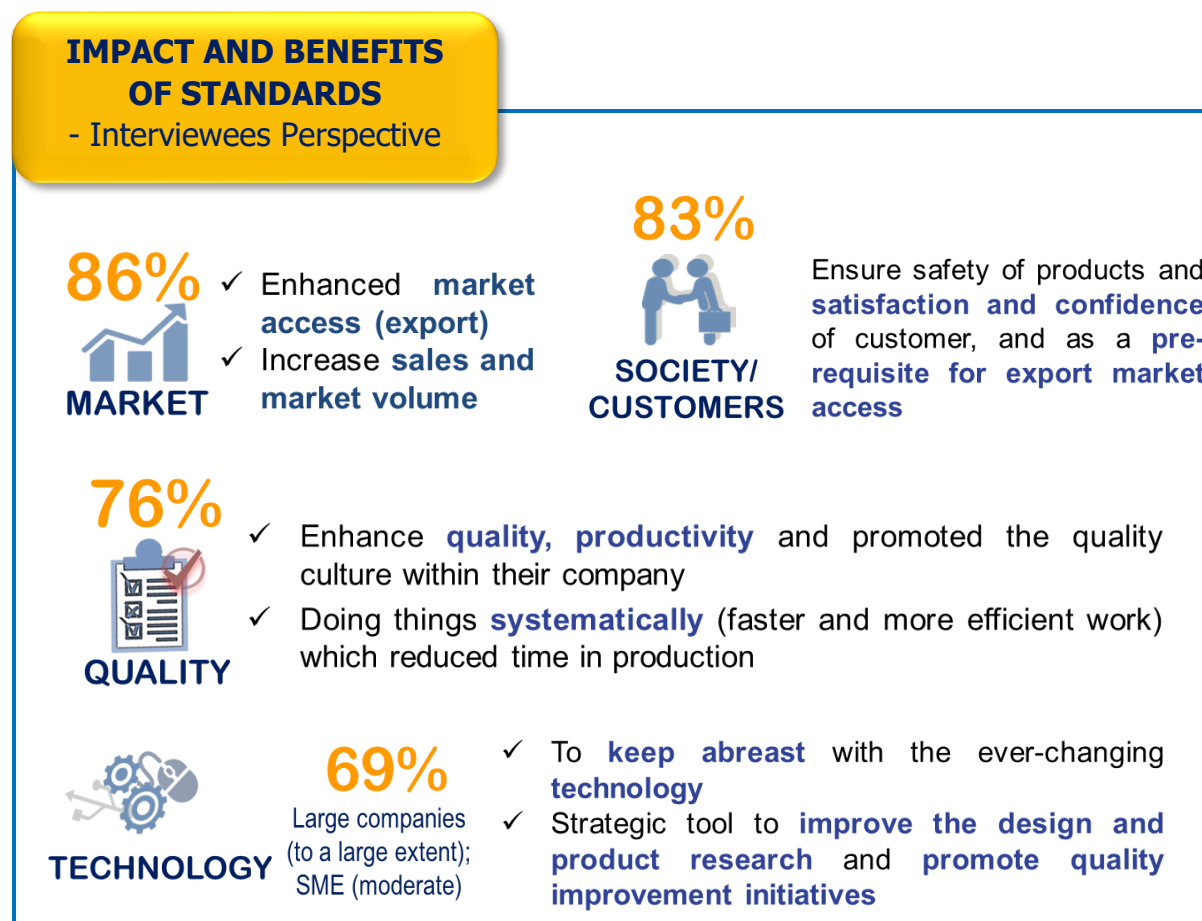
Getting commitment from companies to be interviewed and to reveal confidential information such as their P&L

COMPANIES PARTICIPATED IN INTERVIEWS




The figure shows the impact and benefits of standards based on the feedback from respondents of the interviews.



Standards are believed to have **significantly impacted the industries in the aspects of market, society/customer, quality and technology.**






The study **confirmed and acknowledged benefits of standards** for both government and industries in the following aspects:

GOVERNMENT	
50% Risk Prevention 	Standards complement government's role in protection of health, safety of Malaysians and the environment. From the survey, more than 50% of government agencies indicated that to a large extent, standards have supported their role and function in ensuring the safety and protection of customer.

GOVERNMENT	
 <p>90% Society & Customer</p>	<p>Standards are used as an enabler to enhance public confidence and satisfaction. Findings from the survey have indicated that more than 90% of the respondents agreed that the use of standards have significantly enhanced consumer confidence in their services.</p>
 <p>75% Quality</p>	<p>Standards have helped government initiate more quality improvement activities. More than 75% of the respondents have indicated the significant role of standards in promoting quality conscious culture within the organisation.</p>

INDUSTRIES	
 <p>80% Society & Customer</p>	<p>Standards enhanced customer confidence and safety of consumer and improved image and branding. More than 80% of survey respondents and companies interviewed shared the view that the use of standards has enhanced consumer confidence in their products.</p>
 <p>80% Quality & Productivity 65%</p>	<ul style="list-style-type: none"> Standards help businesses to enhance quality of products and the efficiency of their processes. Standards improved business operations, reduced loss and injury, and reduced waiting and delivery time. More than 80% of the respondents indicated that standards lead to more quality improvement initiatives to resolve quality related issues which consequently improve companies' image and brand. Standards minimise rejections of products due to non-compliance and compensation claims. Around 65% of the survey respondents agreed that standards have reduced the rate of rejects and reworks of their products, thus increasing profit for their company. Management system standards help Malaysian companies in various ways such as to increase efficiency of resources, improve risk management

INDUSTRIES		
	<ul style="list-style-type: none"> Standards are used as basis for requirements to control the quality of supplied materials. 	and increase customer satisfaction as services and products consistently delivered as promised.
 <p>Market</p> <p>→ 75% survey</p> <p>→ 86% interviewees</p> <p>→ 77%</p>	<ul style="list-style-type: none"> Standards facilitate business expansion through penetration and access to new markets, and increase revenue. The implementation of management system standards such as GMP, HACCP, and Food Safety Management enable F&B companies gain entry into foreign markets. This is evident by the significant response demonstrated by more than 75% of survey respondents and 86% of interviewees. 	<ul style="list-style-type: none"> Standards promote and facilitate international trade. About 77% of companies that use International Standards export their products. This indicates that the use of International Standards facilitates export and increase competitiveness.

INDUSTRIES	
 <p>35%</p> <p>Technology</p>	<ul style="list-style-type: none"> Standards disseminate knowledge and technical information, and by supporting the efficient functioning of organisations. Standards act as a catalyst for innovation of products, process and technology. Standards facilitate innovation by reducing the time to market for new products, promoting the diffusion of innovative products, and facilitating inter-operability in network industries thus creating the environment for the development of new products. The survey provides evidence to support this catalytic role of standards in innovation – 35% of companies stated that standards significantly encouraged innovation. Standards contribute higher impact to innovation for multinational and large companies compared to SMEs.
<p>FINANCIAL (cost of compliance)</p> 	<p>Cost of implementation of standards is normally regarded as an additional operational cost and a burden to industries. The increase in sales, profitability and market access gained through the implementation of standards outweigh the cost for compliance to standards. Industries need to shift its thinking from viewing cost of standards compliance as expenditure to a necessary investment that can further enrich the organisation in the long run.</p>

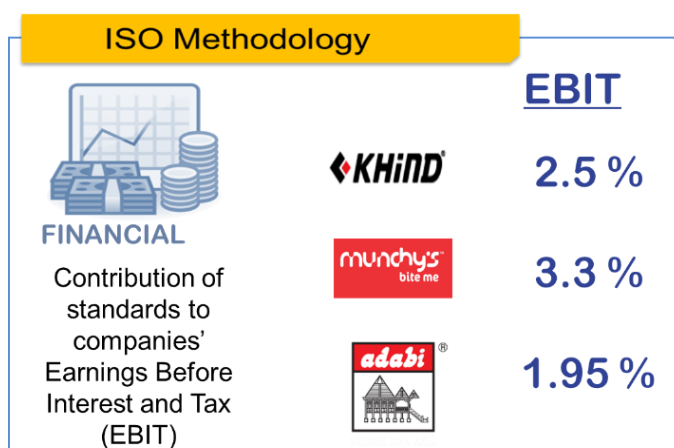
3.3 Case Study (Using ISO Methodology 2.0)

ISO methodology was designed to assess the economic benefits of standardisation to an organisation, and therefore to assess the benefits of standards within a particular industry sector. This methodology is based on the value chain approach and the assessment is based on the company value chain and business function. Benefits of standards are identified along the entire company value chain and its external interfaces.

The selection of companies for the case studies was made based on the fact that the company had been a user of standards for at least a number of years and involved in standard development activities. This fact has been verified during the earlier interview sessions with the companies. Khind Holdings Berhad from the E&E sector and, Munchy Food Industries Sdn. Bhd. and Adabi Consumer Industries Sdn. Bhd from the F&B sector have agreed to partake in this assessment.

Contribution of standards to Malaysian companies (ISO Methodology)

- The results of ISO Methodology assessment on the 3 companies have proven that standards contribute to approximately an average of **2.6%** of the companies' earnings before interest and tax (EBIT).
- The results of contribution of standards for Malaysian companies are consistent with the findings on contribution of standards of other countries.



	Siemens	Juhayna Food Industries	Pretoria Portland Cement	PTT Chemicals	PT. Wika Beton	Khind Holdings	Munchy Food Industries	Adabi Consumer Industries
Country	Germany	Egypt	South Africa	Thailand	Indonesia	Malaysia	Malaysia	Malaysia
Sector	E&E	F&B	Construction	Chemicals	Construction	E&E	F&B	F&B
Contribution of stds (%)	2.8	3.3	2.5	3.0	6.0	2.5	3.3	2.0

4. CONCLUSION

The combined findings from the survey, interviews with industries and ISO Methodology have given a comprehensive understanding of the importance of standards to organisations.

The findings indicated that there are **impacts of standards on the economy** of the country on all aspects used i.e. **financial, non-financial, productivity, quality, competitiveness (market access), risk prevention, business environment and impact to society**. Some impacts are more significant than others, like society and quality.

From the macroeconomic and microeconomic analysis carried out, the **findings confirm that standards contribute positively to the Malaysian economy**.

The findings of the study illustrate the extent to which **standards are essential to the functioning of Malaysian businesses, sector supply chains and markets**. The sector analysis reveals the extent to which standards are essential to the functioning of businesses and markets. **Standards enable savings through enhanced client-supplier relationships and better communication between**

companies which fosters the overall healthy functioning of markets. The analysis also provides evidence for the role of **standards as a catalyst for innovative activity through the diffusion of knowledge**.

For government agencies, **standards complement government's role in protection of health, safety of Malaysians and the environment**. Standards are referred in technical regulations and are used as a basis for products meeting legal requirements.

Due to the importance of standards, it is pertinent that the government continues to give greater emphasis on strengthening standards infrastructure, standards development and advocating the uptake of standards on the supply and demand side of the whole value chain.

Industries, particularly industry associations, should play a bigger role in promoting the uptake of standards by their members through increased collaboration with government agencies and standards experts.