



## Factors affecting OHS practices in private universities: An empirical study from Bangladesh



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### ABSTRACT

Both production and service industries believe that occupational health and safety (OHS) practices are important for quality assurance of products/services. Unlike many other industries where production process and service receivers remain isolated, the production and consumption of university services are directly concomitant; quality of education is affected by OHS measures. An incident, due to lack of safety practices, in a university would have an adverse effect on nation's present and future. However, although have been examined in various industries, OHS research in academic institutes is comparatively limited. More specifically, the overall OHS status of the universities in developing countries is sufficient to shock any parent; similarly, research in this domain is rare. Reducing this literature gap, the current study takes an initiative that investigates the antecedents of OHS adoption in private universities in Bangladesh. Applying quantitative research method we used PLS-based structural equation modeling (SEM). The empirical results find that *regulatory pressure*, *top management commitment*, and *social factors* directly and positively influence university's intention to adopt OHS measures. Going further, *top management commitment* is reflected by *formal policy*, *formal training*, and *encouragement*. This research contributes significant knowledge to OHS literature while develop guidelines for the practitioners including government agencies, university management, and opinion leaders. We concluded with the limitation of the current study and promising a future research in this context.

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### 1. Introduction

Quality of an organization is largely dependent on its people. In other words, the products or services offered by an organization reflect the quality of its people. A university, for instance, produce graduates. The quality of the graduates is significantly influenced by the quality of the lecturers, no doubt. But there are some supportive activities that actually contribute significantly to the production process, although indirectly; physical environment and infrastructure is one of the main – we use air-conditioned classrooms with multimedia facilities. Beyond anything, a safe school with sound infrastructure of buildings and facilities for safe work

are pre-requisite for sustainable education system specifically, occupational health and safety (OHS) issues are crucial. Walton (1985) claims that safe workplace leads to better management of human resources by guaranteeing high performance. Brewer and Walker (2011) too assert that OHS in higher education has significant consequences on university quality assurance. In fact, OHS issues are now not considered as privilege anymore but are as the rights of the people of an organization (Islam and Jain, 2013). Similarly, it has been observed that OHS demonstrates an organization's responsibility to its employees and therefore became an integral part of corporate strategy (Montero et al., 2009). Moreover, in order to ensure most out of an organizational system managers realize that the people need to be safe, sound, and remain healthy (Zacharatos et al., 2005). Therefore, in general, it is formulated that OHS is similarly important for an organizations as well as for its employees (Walton, 1985; Whitener, 2001).

Since the revolution of the industrial workers securing their rights happened, employees acquired the right to work in a safe place – the formal rules of OHS have been evolved. Literature is

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getting rich in OHS domain, mostly focusing general industries that cover from manufacturing to construction to public organizations. Table 1 presents a brief survey on prior OHS studies. However, it is observed that OHS research in academic institutions is glaringly low. But, students and academic staff represent a lion share of the learned society; any incidents in academic institutes would have serious consequences to the present and future of a nation. Among the limited studies in academic organizations, most are actually obsessed with safety issues of the laboratories and focus on the proper implementation and/or practice of scientific procedures. For instance, the extant literature claim that, in medical and scientific research, laboratories use chemicals that are hazardous for human life (Hankin and Britter, 1999; Young, 1991), and therefore, institutes are always under the threat of serious accidents. But the “laboratories are very rarely audited by health and safety professionals” (Marendaz et al., 2013, p. 168). Interestingly, there exists a missing link – a safe laboratory in a faulty building is as bad as having no precaution. In fact, a number of safety incidents are reported which actually take place because of overall operational and managerial scope of OHS measures. Consider the following example: in almost every year serious terrorist activities are seen in USA’s schools that terribly shock the whole world. Unfortunately, literature is not ostentatious addressing such non-technical issues, which actually demands more holistic approach than merely ensuring lab safety. Hence, the main focus of this study is on the drivers of overall safety in academic institutes – from behavioral perspective. In other words, the objective of this study is to examine the factors that drive an academic institution to intend to adopt OHS measures.

Methodologically, this study used a quantitative approach. We first develop a research model from existing literature that integrates concepts from information systems, and institutional and marketing theories. The research model also presents formal hypotheses, which are developed from prior studies. Then, the

constructs and their relationships have been tested with empirical data obtained from a survey conducted in six private universities in Bangladesh. Bangladesh is chosen for the following rationales.

It is generally agreed that, the overall status of OHS practices is better in the leading and internationally accredited universities which are mostly from developed countries; it will be a unrealistic assumption if we expect the same in other universities especially when they are from developing countries. The workers in developed countries perceive that their organization will ensure all preventive measures of work-related risks and ensure their safe return to home after work (Zacharatos et al., 2005); moreover, an employee may refuse to work if s/he finds his/her workplace is not safe enough from occupational hazards. However, this is not necessarily the case in developing countries (Oughton, 2010). Prior literature also demonstrated that, developed countries have both mandatory and voluntary guidelines for OHS issue in their organizations (Islam and Jain, 2013; Robson et al., 2007). Moreover, government or its regulatory bodies are very strict on safety laws, violations of such regulations may result fines and criminal prosecutions against organizations (Gray and Scholz, 1993). On the contrary, OHS related laws and regulations as well as their implementation are quite fragile in developing countries. For instance, Pringle and Frost (2003) found that despite the 2002 OHS regulations, workers’ safety is still a misnomer in China. Complimentarily, Belal and Owen (2007) identified same problems in Bangladesh.

Among many developing countries, Bangladesh is a topic of interest when the discussion is made under the light of occupational safety and hazards. In recent times Bangladesh witnessed increasing number of accidents in workplace, which raise global attention. For instance, the recent collapse of Rana Plaza (a building near the capital city consisting several export-oriented garment factories) resulted more than 1127 people to die due to poor OHS practice and government monitoring (Burke, 2013). Sev-

**Table 1**  
A brief literature survey of existing literature on OHS.

Area	Methodology	Sample	Significant factors	Reference
Manufacturing	Empirical	In Canada, survey of 138 managers	Management trust, organizational factor, social factor	Zacharatos et al. (2005)
	Empirical	Steel manufacturing, 408 response	Management commitment	Watson et al. (2005)
	Empirical	Survey – 53 participants	Safety systems	Borofsky and Smith (1993)
	Empirical	Manufacturing and Mining in Australia, 326 employees survey	Safety knowledge, safety climate, and motivation of management	Griffin and Neal (2000)
	Qualitative	49 group leaders interview	Management commitment and leadership	Hofmann and Morgeson (1999)
Garments	Both qualitative and quantitative	In Australia, questionnaire survey	Management experience, regulatory and competitive pressure	Mayhew and Quinlan (1999)
Retail stores	Qualitative	Content analysis	Soft regulations result poor OHS performance	Islam and Jain (2013)
Academic institutions	Empirical	Survey 920	Safety climate and management commitment	Wu et al. (2008)
Mining	Qualitative	In China; literature review	Regulations; management commitment	Pringle and Frost (2003)
	Quantitative	300 Coal miner survey	Risk taking behavior and job attitude	Paul and Maiti (2007)
Public agency	Qualitative	In UK, 8 interviews	Competitiveness, training, budget	Smallman and John (2001)
Healthcare service	Empirical	Misc. employees, survey of 98 employees	Safety climate	Burke et al. (2008)
	Qualitative	Longitudinal study of 33 interviews	Safety climate	Neal and Griffin (2006)
Construction	Empirical	Survey with 374 employees	Management commitment Supervisor support, internal group processes	Siu et al. (2003)
Transport sector	Empirical	In Norway, survey of 1442 participants	Supervisor support, risk and work pressure	Storeth (2007)
Military	Qualitative interviews	Content analysis of 42 infantry soldiers	Work pressure, safety motivation, safety climate and supervisor support	Zohar and Luria (2004)

eral newspapers claimed that, although a number of severe cracks were exposed in the immediate preceding day, the workers refused to work but were forced to work in the day of collapse. This particular incident creates international pressure to improve OHS in Bangladesh. Consequently, several research attempts associated with OHS in Bangladesh have been made – but they are obsessed in garments sector (which is actually deserved - a number of incidents in several garments incentivized such research in this domain). However, the overall OHS condition and practice in Bangladeshi universities, specifically in private universities, are far below from the standard; in some cases, the condition is actually even worse than that in a garment factory.<sup>4</sup> But, no study has been conducted in this area – to the best of our knowledge. This research promises to close this research gap. Hence, the specific objective of this study is to identify the factors that would drive the Bangladeshi private universities to intend to adopt OHS measures. For analyzing empirical data, we used PLS-based structural equation modeling (SEM) technique.

The remainder of the paper proceeds as follows. The next section develops the research model and the hypotheses, from existing literature. The third section presents the research methodology used in order to test the model. The fourth section presents the results of data analysis. The fifth section discusses research implications and limitations. This paper concludes with a conclusion section.

## 2. The model and hypotheses development

The research model developed for this study is presented in Fig. 1. Prior studies assert that both external factors and organizational internal factors are vital for organizational adoption of OHS practices. According to institutional theories, organizations do not operate in isolation; rather, they need to admit the rules of the surrounding and global environment. Many of the times, organizations consume pressure from external environment and then design their organizational strategy, policy, and operations which are compatible to the requirements of the institutional environments (Scott, 2001). Therefore, our research model posits that *external pressure* will have a significant and positive effect on OHS adoption in organizations. Detailing the nature of *external pressure*, Hossain and Quaddus (2013) established three kinds: government pressure, mimetic pressure, and competitive pressure – we adopted their approach.

It is commonly accepted and expected that government would take the main role making companies to adopt proper OHS measures that save its citizens. In most countries, government exercises its power and force organizations to adopt a system in order to gain compliance to a desired practice (Gray and Scholz, 1993). This is a ‘regulative process’ (Lawrence et al., 2001). In academic sector, for instance in Bangladesh, government assigned the University Grants Commission (UGC) to monitor the activities of the public and private universities. In order to conduct business, universities are bound to follow UGC’s regulations and guidelines. Hence, government agencies are treated as the most effective sources imposing OHS practices (Aalders and Wilthagen, 1997; Walters, 1983) to universities. This leads to the first hypothesis:

**H1.** Regulatory pressure will have a positive influence on OHS adoption in universities.

“Mimetic pressure involves the perception of some value of mimicking a behavior from other referent actors” (Lawrence et al., 2001, p. 628). *Mimetic pressure* is exerted on an organization

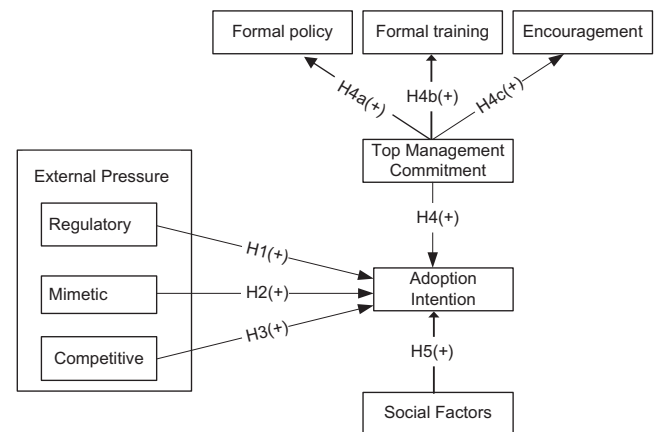


Fig. 1. The research model with hypotheses for OHS adoption in private universities.

by itself when the organization perceives that another organization on the same business environment is getting benefit adopting a practice, and feels pressure to act likewise (DiMaggio and Powell, 1983; Lawrence et al., 2001; Teo et al., 2003). In the current context, a university would try to gain competitiveness by adopting OHS practices, which are already been practiced in other (local or overseas) universities. This leads to develop the following hypothesis:

**H2.** Mimetic pressure will have a positive influence on OHS adoption in universities.

Prior studies suggest that *competitive pressure* has significant contribution to organizational adoption of OHS-related human rights and responsibilities (Hossain et al., 2012; Porter and Kramer, 2006). In the current context, private universities in Bangladesh face more competition than the public universities. In order to remain competitive and survive in the market, private universities adopt various techniques that include recruiting qualified academic staff, offering competitive salary to them, ensuring better working environment and so on. Therefore, constructive and positive competition among universities would enhance the intention of the universities to become more competitive and intend to apply OHS tools and innovations (Alam et al., 2007). For instance, if a university is equipped with central fire alarm system it would bring competitive pressure to the market, and eventually other universities may intend to adopt the same. We therefore, propose the following hypothesis:

**H3.** Competitive pressure from other private universities will have a positive influence on OHS adoption in universities.

Existing OHS studies admit the role of organizational factors in organizational adoption of OHS practices (e.g. Harpur, 2009; Montero et al., 2009). They identified mainly two aspects of organizational factors including resource and (top) management attitude (Alam et al., 2007). However, recent studies found that ‘resource comes later’ but the management attitude plays the leading role for organizational adoption of OHS, especially as the initial stage (Barling et al., 2002). Moreover, it is observed that, private universities do not experience resource shortage, but lack of management’s readiness deters OHS adoption. Therefore, the current study investigates only the role of *management attitude* in OHS adoption.

Prior studies find that top management have significant role for adoption of OHS as top (senior) managers are capable of and usually have the authority to take strategic decision (Hayes et al.,

<sup>4</sup> Between February–May 2014, the authors visited eight universities in Bangladesh and found no university had fire alarm system or a master point, the ‘exit’ signs are not visible in dark, but the campuses had slippery floors without the yellow sign, exposed electrical power points, sharp edges, and the list goes on.

1998; Hofmann and Morgeson, 1999). Barling et al. (2002) argue that *top management commitment* is extremely influential for organizations to adopt OHS policy and practices. Precisely, in education industry, *top management commitment* is found as the most important factor for OHS implementation (Wu et al., 2008). In this study, we thus propose:

**H4.** Top management commitment will have a positive influence on OHS adoption in universities.

Moving one step further, the current study declassifies *top management commitment* – i.e. how exactly the management of a university set different strategic policies related to OHS. Analyzing current OHS literature we deduce that an organization's management attitude can be reflected through developing and disseminating formal policies, conducting regular formal training, and encouraging the participants.

Scholars argue that high performing organizations have formal OHS policy (Walton, 1985; Whitener, 2001). Therefore, an organizational with positive management attitude toward OHS is willing to develop OHS-related policies; moreover, they integrate the policies with organizational vision, mission, and culture; and communicate through academic and social clubs, charters and so on. Thus we, propose following hypothesis:

**H4a.** Top management commitment will have a positive influence developing formal policies related to OHS, in universities.

Christian et al. (2009) reported that OHS performance is related to proper training. Top management's commitment in the direction of OHS implementation is often expressed through training to its people (Harpur, 2009; Montero et al., 2009). Formal training might reduce possible risks of incidents and increase employees' confidence – both have effects on firm productivity (Harpur, 2009). Hence, this study posits that top management must provide proper training program so that its people can learn OHS matters. We thus deduce the following hypothesis:

**H4b.** Top management commitment will have a positive influence developing formal training related to OHS, in universities.

Within an organization, mandates do not guarantee full practice of OHS measures; managers, therefore, motivate and encourage its people to exercise OHS guidelines. Sometimes, the managers participate themselves (Kristensen, 2011), while encourage others for hazard identification and report, or reward for such reporting (Quinlan et al., 2001). In some universities bonus marks are offered if students report a safety hazard – this is actually to increase their commitment and ensure the participation. Hence, we deduce that:

**H4c.** Top management commitment will have a positive influence encouraging the people to participate in OHS tradition, in universities.

Proposing the last hypothesis, we introduce the effect of social factors. Social Cognitive Theory (SCT) recognizes that gaining social recognition or status is the main motivators for adopting an innovation. In a given environment, organizations may tend to be treated differently or to receive respect from the other members of the society – and consider OHS measures as a means of “image” or “prestige” or “be different”. The relationship between social factors and organizational OHS (in the name of workplace responsibility) is well documented in literature. For instance, Brønn and Vidaver-Cohen (2009) claimed that organizations perform OHS to justify themselves as a good ‘corporate citizen’. We therefore, we propose the following hypothesis:

**H5.** Social factors will have a positive influence on OHS adoption, in universities.

### 3. Research methodology

The research paradigm of this current study is quantitative-positivist. Applying positivist paradigm we developed formal hypotheses, identified quantifiable measures of variables, tested the hypothesis, and finally drew the inferences about a phenomenon (i.e. OHS adoption in universities) from the sample to a stated population. Methodologically, empirical approach is adopted.

#### 3.1. Sample

We conducted a survey in six private universities in Bangladesh – all operate their (main) campus(es) in the capital city. These universities have been selected with the following rationale: (a) though arguably, these are the top six private universities in Bangladesh. We construed the list from a Delphi session conducted among five executives, three guardians, and seven current students; (b) they enjoy the lion share of the private education business in Bangladesh, in terms of number of current students and graduates, and staff; (c) universities in the other locations actually target the local students while these universities entertain students from all over the country, hence, the commitment to OHS would be more, we assume; (d) these universities operate in their own campuses while many others rent apartments – OHS initiative and commitment are more likely to be visible in own campus, we presume. The questionnaire was distributed among 350 sample consisting 275 students and 75 staff. To secure confidence, the respondents were ensured that their identity could never be detected thus ensuring privacy and anonymity. Overall, 277 returned surveys were useable with 79% response rate.

#### 3.2. Data examination

This study split the responses into Wave 1 (first three universities) and Wave 2 (the other three universities). We used the Mann–Whitney U test (M–W) test to compare the sample distributions at item level. As shown in Table 2, the M–W test for the selected factors are non-significant, with only one exception – FP2 (formal policy); the difference in perceptions is not unlikely, and does not affect the whole model. The overall non-significant M–W test suggests that the sample distributions of the two independent groups do not differ statistically – that means, we can add the responses to conduct data analysis.

#### 3.3. Data analysis technique

The research model presented earlier (Fig. 1) is relatively complex and the phenomenon under study is comparatively new and/or changing. Moreover, the sample size is relatively small considering the population. Therefore, component-based structural

**Table 2**  
The result of the Mann–Whitney U test.

	Z-value	p-value
Gender	1.04	0.16
RP4: Important for accreditation	0.64	0.77
CP1: Low switching cost for students	0.60	0.82
FP2: Uses health and safety posters	1.921	0.00
TMC1: Top management has clear goal and vision	0.45	0.96
FT2: Arranges workshops	1.13	0.12

equation modeling (SEM) using PLS has been adopted considering its suitability over covariance-based SEM with regard to model complexity, sample size, and distributional properties (Chin, 2010). In other words, PLS has been selected because of its suitability when the primary objective of research is theory development. As such, data were analyzed using *Smart-PLS* version 2.0.M3.

## 4. Results

### 4.1. Assessment of measurement properties

The initial research model consisted of 42 observed variables. Referring to Igbaria et al.'s (1995) argument, this research adopted the minimum cut-off level of 0.6 for item loading; following this rule, one item was discarded. The revised model with 41 observed variables was again tested using PLS and all item exceeded 0.6 reliability criteria (see Table 3). The results confirm that the items are reliable to represent their respective construct.

We then have analyzed Composite Reliability (CR) and Average Variance Extracted (AVE) to evaluate the model in terms of internal

consistency. Referring to Table 3, all constructs met the acceptable criterion for CR ( $\geq 0.7$ ) and AVE ( $\geq 0.5$ ).

Moreover, we assessed the square root of the AVE and cross-loading matrix to assess the discriminant validity as suggested by scholars (Chin, 2010; Igbaria et al., 1995). The square root of AVEs exceeds the inter-correlations of the constructs with the other constructs in the model (Henseler et al., 2009) (see Table 4). Moreover, the cross-loading matrix was developed but is not provided to save space. No item loads higher value on other constructs than on the construct it represents. The results, therefore, confirms that the measurement model has strong discriminant validity at item as well as construct level.

### 4.2. Assessment of the structural model

The results of the structural model detailing the path coefficients and *t*-statistics are summarized in Table 5. The nomological validity or explanatory power of the proposed model can be assessed by observing the  $R^2$  values of the endogenous constructs. Based on the scores of  $R^2$ , it can be interpreted that the model explains 50.9% of the variance ( $R^2$ ) of the OHS practices. The

**Table 3**  
Psychometric properties for the constructs.

Construct	Item	Loading	CR	AVE
Regulatory pressure	RP1: Laws to ensure adoption	0.753	0.823	0.609
	RP2: UGC puts strict supervision	0.825		
	RP3: UGC is highly committed	0.761		
	RP4: Important for accreditation	0.753		
Mimetic pressure	MiP1: Other private universities benefited greatly	0.779	0.873	0.698
	MiP2: Favored by customers/students	0.928		
	MiP3: Improvement in work process	0.792		
Competitive pressure	CP1: Low switching cost for students	0.699	0.820	0.70
	CP2: Other universities serves similarly	0.605		
	CP3: Students will move out unless OHS is adapted	0.849		
	CP4: OHS adoption gives competitive advantage	0.603		
Top management commitment	TMC1: TMC has clear goal and vision	0.782	0.902	0.606
	TMC2: University knows well about it	0.775		
	TMC3: Implementation strategies are available	0.730		
	TMC4: Considers OHS practice important	0.798		
	TMC5: Enforces to follow OHS policy	0.783		
	TMC6: Resources are available to adopt OHS	0.802		
Formal policy	FP1: existence of formal policies on OHS	0.723	0.866	0.502
	FP2: Uses health and safety posters	0.727		
	FP3: Appoints health and safety consultants	0.751		
	FP4: provides first-aid box	0.644		
	FP5: Firefighters available and known to all	0.695		
	FP6: give precise lab instructions	0.649		
	FP7: labels dangerous places with proper signs	0.657		
Formal training	FT1: Provides training on OHS practice	0.782	0.924	0.709
	FT2: Arranges workshops	0.883		
	FT3: Provides classroom based lessons	0.872		
	FT4: Distributes leaflets and booklets	0.855		
	FT5: Arranges site tours in orientation programs	0.814		
Encouragement	EM1: Encourages us to learn	0.801	0.895	0.681
	EM2: Rewards us for practicing	0.799		
	EM3: Encourages us to identify hazardous sites	0.877		
	EM4: Rewards to demonstrate safe behavior	0.822		
Social factors	SF1: OHS practice gives higher status	0.906	0.903	0.703
	SF2: More prestigious than other universities	0.946		
	SF3: Symbolizes industry status	0.796		
	SF4: Sign of being competent	0.528 <sup>a</sup>		
	SF5: Pressure from important people	0.681		
Intention to adopt	ADP1: Endorsed OHS plans	0.858	0.923	0.749
	ADP2: Approved financial budget	0.872		
	ADP3: Developed certain plans	0.870		
	ADP4: Considers this adoption seriously	0.862		

<sup>a</sup> Discarded item.

**Table 4**  
Correlation of latent variables and square root of AVE.

	ADP	RP	MiP	CP	TMC	SF	FP	FT	EM
Adoption (ADP)	0.866								
Regulatory pressure (RP)	0.559	0.780							
Mimetic pressure (MiP)	0.250	0.289	0.835						
Competitive pressure (CP)	0.180	0.225	0.246	0.837					
Top management commitment (TMC)	0.620	0.430	0.199	0.143	0.779				
Social factors (SF)	0.104	0.120	0.209	0.239	0.095	0.838			
Formal policy (FP)	0.467	0.367	0.233	0.020	0.534	0.055	0.709		
Formal training (FT)	0.538	0.489	0.096	0.155	0.514	0.233	0.477	0.842	
Encouragement (EM)	0.632	0.527	0.247	0.179	0.538	0.194	0.416	0.674	0.825

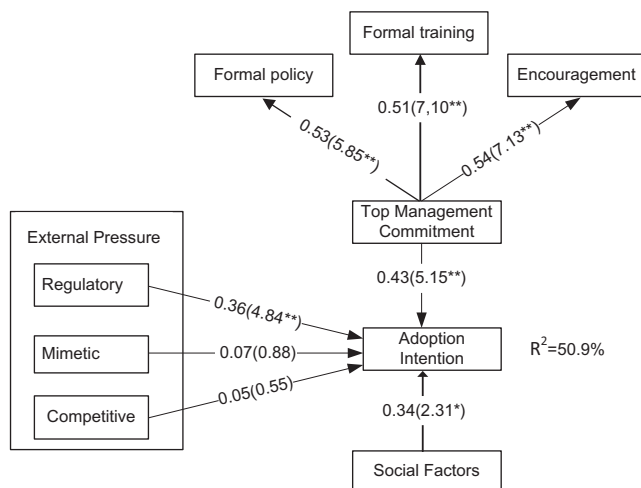
Diagonal elements are the square root of AVE.

**Table 5**  
Structural properties of the constructs.

Hypothesis	Link	Path coefficient	t-value	Supported?
H1	Regulatory pressure to adoption	0.356	4.839**	Yes
H2	Mimetic pressure to adoption	0.077	0.888	No
H3	Competitive pressure to adoption	0.053	0.545	No
H4	Top management commitment to adoption	0.431	5.149**	Yes
H5	Social factors to adoption	0.338	2.312*	Yes
H4a	Top management commitment to formal policy	0.533	5.850**	Yes
H4b	Management commitment to formal training	0.514	7.103**	Yes
H4c	Management commitment to encouragement	0.538	7.126**	Yes

\* Significant  $p < 0.05$ .

\*\* Significant  $p < 0.001$



**Fig. 2.** The OHS adoption model with the results (\* $p < 0.05$ , \*\* $p < 0.001$ ).

obtained  $R^2$  value is “moderate”; moderate  $R^2$  is acceptable for an endogenous latent variable with only a few exogenous latent variables (Henseler et al., 2009) (see Fig. 2).

#### 4.3. Global fit measure

We also calculated the global fit measure (GoF) for PLS path modeling which is defined as the geometric (or arithmetic) mean of the average communality and average  $R^2$  for endogenous constructs. In this study, we obtained a GoF value of 0.461 for the complete model, which exceeds the cut-off value of 0.36 for large effect sizes of  $R^2$ . As such, it allows us to conclude that our model has better explaining power in comparison with the baseline values (GoF<sub>small</sub> = 0.1, GoF<sub>medium</sub> = 0.25, GoF<sub>large</sub> = 0.36).

$$\text{GoF} = \sqrt{\text{AVE} \times R^2} = 0.461$$

## 5. Discussion

### 5.1. Summary of findings

Among the external pressures, *regulatory pressure* is the only supported antecedent that has positive impact on OHS adoption. In other words, government (agency’s) legislation and their effective implementation can make private universities to adopt OHS measures. However, developing countries including Bangladesh experience that some private universities may “keep the regulations in pocket” – the reasons are twofold: many of the owners of private universities are either direct policy-makers or do exercise influence; the second reason is very obvious – corruption – universities “manage” the regulatory bodies “quite comfortably”. As an alternative method, accreditation authorities should make universities to adopt OHS tools; then they monitor the progress, and audit the regular practice once implemented. It is found that *mimetic pressure* cannot contribute much for OHS adoption in private universities; however, the effect is positive. This finding suggests that the stakeholders of a university do not ‘mimic’ someone else’s behavior/practice but are driven by their own judgment. Similarly, *competitive pressure* enjoys less significant influence but positive contribution to OHS adoption. That means, at least the surveyed six universities do not find any pressure from market in the way to adopt OHS practices.

*Social factors* play a significant role in OHS adoption. In fact, some of these universities try to develop an image in the society that they have been using “state of the art” practices of the Western world, and hence try to prove it through practicing OHS measures. They keep “trying to be different” than their competitors which in turn would secure them more business.

*Top management commitment* plays a significantly important role for OHS adoption. Prior studies too proved that top management with strong commitment to its people and the society as a whole can make a substantial difference. The current study also examined the contributing factors of top management commitment i.e. how we can observe the reflection of top management

commitment. It is found that *formal training* and *encouragement* are equally important, followed by *formal training*, to establish the commitment of the top management toward OHS practices. First, top management should develop and disseminate formal policies regarding the implementation and continuous exercise of OHS practices. Then, as OHS can reduce employees' stress in workplace, management should provide formal training to its students and staffs, arrange meaningful regular drills and other such regular practices. Once a culture of practicing OHS measures is established, management should encourage the people to practice the features in their daily lives, voluntarily.

### 5.2. Implications for theory

This research extends the existing OHS literature by incorporating constructs and dimensions from different theories. In past, a number of initiatives have been observed identifying the driving factors of OHS adoption but produce discrete results; this study presented the OHS adoption drivers in simpler and complete way – both from external and internal contexts. Important theoretical contribution also is offered considering OHS implementation prescription in academic institutes – this is the first theoretical initiative in literature, so far the authors are concerned. Finally, this research fulfilled the four 'building blocks' for theoretical contribution (Whetten, 1989). First, the factors included in this study are comprehensive and parsimonious – answer to 'what'. Second, 'how' the factors are related is answered by "using "arrows" to connect the "boxes" that assist understanding the causality and effect of the factors. "Together, the What and How elements constitute the domain of the theory" (Whetten, 1989, p. 491). Complying with the third dimension, 'why', this research presented the underlying dynamic of the explored factors, and the causal relationships that are supported by prior studies. Finally, we presented the limitations of the study and provided future research direction suggesting how the current research can be used in other applications ('who, when, where').

### 5.3. Implications for practice

This study develops several practical implications targeting different stakeholders of an educational system: government agencies and accreditation bodies; university management; and civil society. Although has been tested in one developing country (i.e. Bangladesh), with some reservations, the findings of the current study can be applied in other developing countries as well.

The *first* managerial implications are for the government and its associated agencies. The empirical results demonstrate that, governments have strong influence to make universities to intend to adopt OHS policy (unless or otherwise the university management do the same from their self-commitment towards safer workplace). Current literature finds that most of the developed countries have strong OHS guidelines in academic institutions (Hill Jr. and Finster, 2013; Lyons, 2013; Subhani, 2010). Most of the universities in developed countries have OHS policies which are highly compatible with government legislations (Oughton, 2010). For instance, Australian universities need to follow the federal as well as state laws such as NSW OHS Act 2000 (Oughton, 2010). However, this is still missing in Bangladesh, till today. Though Bangladesh *Labour Act 2013* made a number of amendments of the original *Labour Act 2006* and offers several provision for safe workplace mainly in industrial workers aspect (ILO, 2013) leaving no roadmap specific to academic workplace safety. More specifically, the private universities in Bangladesh are regulated by the *Private University Act 2010*, again, the Act compels the universities to have own campus but does not impose any safety related provision or guideline rather provide some general rules and regulations for university

operations. Hence, government's legislative arm should conceive workplace safety laws, specific to different sectors including garments and institutions; then, the executive arm of the government should monitor the application of such law(s). The current study, with empirical evidence, suggests that government pressure actually is the strongest driver to make private universities to adopt OHS measures, and more importantly, the agencies should conduct unbiased and regular audits. Similarly, the safety of the students and the staff should be a significant concern to the accreditation bodies; they should mandate the universities to adopt and exercise OHS measures before the universities are granted with an accreditation.

The *second* implications are for the university management. Contrast to general perception which believes that an academic environment is safer for students to study and staff to work, however, increasing number of accidents and injuries raise question about the management commitment (Shariff and Norazahar, 2012). Hence, the top management of a university should take the initiative and leadership role for adopting OHS features and conceive strategic directions for such. The top management should realize the importance of OHS practices to business efficiency. For instance, a fire incident in one of the participant universities forced it to close the university for one month and to spend around \$45,000 per month for renting generators; moreover, the lack of proper disaster recovery plan ruined its public image. The strategic direction then need to be followed by operational activities including hazard identification, safe buildings structure, and regular inspection (Marendaz et al., 2013). Ideally, the mid-level managers would comply safety guidelines including forming safety committee, conducting safety training and so on. Eventually, the safety practices should become the culture of the organization (Blewett and O'Keeffe, 2011).

The *third* and final practical implications address the civil society and the opinion leaders. From an international survey Velazquez et al. (2006) found that people now-a-days are getting more concern on OHS issues. The civil society may raise the voice and exercise pressure on the universities to adopt OHS practices. Responding to such pressure may indirectly increase the public image of the university, as well as increase the business of the university because the representative of the civil society often work as the opinion leaders. Furthermore, the powerful alumni could convince the university that complying the OHS measures should enhance the prestige in the society and business environment.

### 5.4. Limitations and future research direction

Some limitations of the current study are worthwhile to mention and to be addressed in future research. First, this research examined the OHS measures from six private universities (out of around 76), all in the capital city. The other locations and hence their socioeconomic and other factors might have a different opinion from our model; therefore, future study could test the model in other settings. Moreover, data were under a cross sectional design; however, the respondents' perceptions might get changed over a period of time. Therefore, in future, a longitudinal study is promised to conduct in the same domain. Furthermore, similar study in public universities can be conducted and compared with the results from the current study. Finally, how OHS characteristics themselves (e.g. cost, complexity) affect its adoption will be interesting and promised to be researched.

## 6. Conclusion

Occupational health and safety (OHS) issues are gaining increasing attention in various industries mainly in mining,

construction, and manufacturing. Students of today are the future of a nation – securing their health and life is therefore a significant priority of any society. However, little is known about the driving factors of OHS adoption in private universities. This research has investigated the antecedents of OHS adoption intention in academic institutes by conducting a survey in six Bangladeshi private universities. Using PLS-based structural equation modeling (SEM), this research found that government regulatory pressure, organization's top management commitment, and social factors are important for OHS adoption in private universities. Moreover, top management can consider different strategies including formal policy, training, and encouraging the practitioners. This study offers theoretical contribution by formulating and validating the related constructs and dimensions. Furthermore, it proposed a guideline for government and accreditation agencies, university managers, and representatives of a civil society.

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