



## Six Sigma and the Malaysian Hotel Industry

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### Abstract

This paper is developed to examine the significance of Six Sigma Methodology towards the improvement of the Malaysian Hotel Industry. It was known that there are many strategies that had been developed over the years to improve service quality and delivery in the Hospitality and Tourism Industry. The industry by norm is known to use service deliverer; therefore, seeking the best method to increase employee job performance is seen to be vital. From the review of the literature it was found that they are several hospitality and tourism organizations used Six Sigma to enhance their service delivery efficiency. Six Sigma,  $6\sigma$  symbolizes a specific number, which is 3.4 defects per million opportunities (DPMO), where opportunity is understood as any possible source of error in product, process, or service. There are three principles that build Six Sigma approach and they are: a) teamwork, b) statistical control process (SPC) and c) shared vision. Nonetheless, this paper will focus on a single constituent of Six Sigma that is 'Shared Vision'.

**Keywords:** Six Sigma; Teamwork; Statistical process control shared vision; Hospitality; Job performance

### Introduction

Tourism is an important industry that contributes at least 9 per cent of the world's GDP, employs over 255 million people worldwide and represents 8% of the global workforce [1,2]. The industry makes a significant contribution to the economic development of many countries, with some countries reliant on tourism as a catalyst for growth and development. This is the case in Malaysia where the tourism industry has been hosting large numbers of tourists arriving for business or vacation purposes as well as transient passengers' en-route to other destinations. In 2014, the tourism sector contributed MYR 72 billion (US\$ 16.48 billion) towards Malaysia's Gross Domestic Product (GDP) [3]. In 2010, Kuala Lumpur was ranked as the seventh most visited destination in the world [2]. The growing number of tourist arrivals has led to an increase in the provision of hotel accommodation. In 2013, for example, there were 3,094 hotels available and by 2014 the number had increased to 4,072. Statistics provided in a Malaysian Government plan show that the number of hotels at all rating levels (from one star to five star) increased by 24% between 2013 and 2014. Growth in tourist arrivals increased by 6.7% in 2014 and the average annual increase in the period 2013-2014 is 12% [4].

Strong competition has been a feature of the tourism industry for some time and this has led to the development of sophisticated business operation strategies. However, the hotel sector has traditionally been slow to adopt these innovations [5,6]. O'Mahony et al. [7] notes, for example, that instead of improving service and developing distinctive products that satisfy the needs of their customers, hotels tend to concentrate on improving revenue through increased sales, generally by lowering prices. The review of the literature found that the Six Sigma methodology has been widely used in manufacturing businesses [8]. However, there are number of service organizations that have embraced the product improvement methodology [9]. Kivela and Kagi [10] stated that Six Sigma is a product improvement approach that is also well accepted by service oriented businesses. Although the methodology is designed specifically to improve productivity, the concept gained serious interest from service organizations as a method to improve the quality of services. This was due to the effectiveness of the methodology in improving products and services as well as work systems [9-17].

### Literature Review

The review of the literature found that the Six Sigma methodology has also been widely used in manufacturing businesses. The manufacturing sector uses Six Sigma primarily to improve product quality [8]. However, there are number of service organizations that have embraced the product improvement methodology [9]. Kivela and Kagi [10] stated that Six Sigma is a product improvement approach that is also well accepted by service oriented businesses. Although the methodology is designed specifically to improve productivity, the concept gained serious interest from service organizations as a method to improve the quality of services. This was due to the effectiveness of the methodology in improving products and services as well as work systems [9-17]. According to Pande et al. [18], Six Sigma methods were derived from three basic fundamental tenets and they are: i) statistical measures on the process or product, ii) zero defects in employee performance, and iii) top management commitment.

### The development of the Six Sigma framework

Six Sigma was developed and named by Dr. Mikel Harry a Senior Engineer from the Motorola Corporation, in 1975. He designed the approach after his search for ways to reduce defects and improve production [9]. The purpose of the methodology is to improve employee performance, work processes, productivity and the quality of the product and, at the same time, reduce the cost of production [19]. The main reason for the development of the Six Sigma framework was the continuous improvement in the manufacturing of complex devices involving large numbers of parts with a high probability of defects [8]. Linderman et al. [20] offered the following definition of Six Sigma:

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Six Sigma is an organized and systematic method for strategic process improvement and new product and service development that relies on statistical methods and the scientific method to make dramatic reductions in customer defined defects rates (p.195).

In Six Sigma,  $6\sigma$  symbolizes a specific number, which is 3.4 defects per million opportunities (DPMO), where opportunity is understood as any possible source of error in product, process, or service [21]. This philosophy proposed continuous improvement in the firm as a means of increasing the efficiency of job processes (free from defects) [22]. Therefore, by implementing Six Sigma, firms are able to decrease their defect rates in work processes, improve the quality of products, satisfy customers, reduce costs, improve efficiency, and increase productivity [21,22]. In keeping with the definition proposed by Linderman et al. [20], Pallet et al. [23] proposed that:

Quality is never an accident, it has to be visioned, initiated, planned, delivered, monitored, and sustained ... a successful quality assurance system must achieve the goals of boosting employee morale, maximizing guest satisfaction, and optimizing long-term profitability (p.349).

Therefore, both definitions offered by Linderman et al. [20] and Pallet et al. [23] present Six Sigma as a method for improving organizational processes that goes beyond quality assurance or quality control. In fact, Six Sigma is closer to the concept of Total Quality Management [8]. Motorola Corporation's success story in implementing Six Sigma is a good example for firms adopting the improvement methodology [24].

The Six Sigma pillars are derived from the five main components of Total Quality Management practice, and they are: customer focus, employee involvement, continuous improvement, leadership and fact-based decision making [25]. The three basic precepts of TQM are customer focus, continuous improvement and teamwork [26,27] and those precepts are included in the fundamentals of Six Sigma methodology [28,29]. According to Breyfogle [21], the three most important tools for achieving zero defects are continuous improvement, Statistical Process Control (SPC) and teamwork. The implementation of Six Sigma was designed to produce high quality products and it has been reported that organizations that adopted Six Sigma in their work processes and organization system gained improvements in their business' performance [9,30].

At present, the Six Sigma methodology is represented in all sectors [9,31]. Six Sigma has been proven to reduce process variation and defect rates in all critical business processes [32]. As a result, the approach also offers a foundation for improving service effectiveness [meeting the desirable attributes of a service], and service efficiency [time and costs] [33]. Furthermore, Six Sigma includes the relentless and rigorous pursuit of processes to achieve continuous improvements and breakthroughs in service performance that impact on the bottom line results of an organization [24]. Antony and Banuelas [34] have further posited that the main focus of the Six Sigma methodology is not to count the defects in the work processes, but to focus on the number of opportunities that might exist. Adams et al. [35] explained that a defect in Six Sigma is anything that includes processes, procedures, and features of the outcome.

The Six Sigma approach presents a powerful method for detecting major problems and developing strategies to overcome these problems and improve the customer experience [36]. When implementing Six Sigma, a firm should address several issues. Firstly firms should know, in detail, the work process and, secondly, make meeting customer needs and expectations a priority [34]. Organizations should also

address the issues involved in core processes and how they define and measure defects [21]. Furthermore, organizations must find a method to detect why defects occur in the processes and how frequently they have happened [37]. Organizations should also consider the impact of such defects on customer satisfaction, which has a number of implications for this thesis. Finally, there should be a strategy developed and implemented to prevent defects [38].

### The dimensions of Six Sigma ( $\sigma$ )

Six Sigma consists of three main components: i) teamwork, ii) statistical process control, and iii) shared vision. Those pillars are further elaborated upon next.

**Teamwork:** Teamwork is one of the major pillars in the Six Sigma methodology [21,29,39,40]. The continuous improvement proposed in this philosophy was developed through different tasks assigned to teams of workers. The success of an improvement program depends on cross-functional teams [40,41]. Teamwork was a key factor in Six Sigma's success because team members are the main carriers of the philosophy [42]. In Six Sigma, roles such as 'Champions', 'Master Black Belts', 'Black Belts' and 'Green Belts', etc, are explicitly established. According to Pande et al. [22], people that work in the organization can be categorized into; a) Champions (Executive Committee) - obtain resources and eliminate barriers, b) Master Black Belts (Top management) - have important abilities and deep knowledge of Six Sigma methodology, c) Black Belt (full time agent) - improvement projects, and d) Green Belt (Employee) - belong to the improvement program but this group of employees only has part time contribution to a task. These groups of employees in the organization have different task and roles. Thus, teamwork is seen to be pivotal to Six Sigma implementation [43].

**Statistical Process Control (SPC):** On the other hand, Six Sigma team members are trained to improve employees' abilities, teamwork, statistical methods and tools [43-45]. Six Sigma offers a solid statistical methodology for experimentation and research [46]. In fact, the definition given by Linderman et al. [20] indicate that the initiatives for improvement were grounded in powerful statistical methods. Hence, another distinctive aspect of the Six Sigma approach is its strong statistical foundation [24,47,48].

**Shared vision:** Pearce and Ensley [47] defined Shared Vision as '... a common mental model of the future state of the team ...'. This definition represents a capacity for sharing the future image of what is desired by firm members, developing common commitment to this future image and establishing some principles for pursuing it [37]. According to Locke and Latham [49], shared vision was among the most important ideas concerning leadership in the twentieth century. Employees' ability to share a future image toward which they can direct their efforts enables the achievement of a series of significant advantages for the organization. Through Shared Vision, the relationship between professional improvement, lifelong learning and long term commitment can be stimulated [37]. These factors have significant implications for organizational performance.

### Teamwork and Statistical Process Control (SPC) in Six Sigma as sources of shared vision: The goal theoretic perspective

The goal theoretic perspective affirms that establishing specific and challenging goals leads to better results [50]. Therefore, goals should fulfill both requirements. Firstly, establishing specific goals should focus workers attention and lead their efforts in the right direction. Furthermore, goals should be specific and clear to enable

an organization to improve its product [50]. The second requirement established by the goal-theoretic perspective is that the goal should be challenging and difficult. This increases employee effort and positive results can be obtained [50,51].

### The application of Six Sigma towards the service industry

In general, the majority of studies on quality management and improvement programs originate in, and are designed to improve, product quality in the manufacturing sector [52]. However, scholars and specialists have posited that some principles could also be implemented successfully in the service sector [9,10]. The similarity between Six Sigma and this study is that Six Sigma focuses on the concept of employee teamwork. According to Pande et al. [18], employees play an important role in the work process, system and procedures because without employees, none of these activities would be possible. Senge [37] contended that top management is responsible for disseminating the organization's vision and goals to employees. Breyfogle [21] stated that an employee who understands and believes in the firm's vision and goals, knows what to do and knows how to achieve this is considered a champion. Hence, teamwork and shared vision are seen as important dimensions in assisting this study to develop a service delivery improvement model for the Malaysian Hotel Sector.

In the manufacturing sector, it is quite common to have some sort of measurement in place, which provides an indicator of process performance and product quality [53]. In the service industry, measurement is often overlooked and therefore, improvement in quality is not adequately addressed by many service-oriented businesses [54]. In manufacturing processes, it is quite common to have process maps before Six Sigma projects are initiated [14]. However, the use of flowcharts and process maps is not so common in many service processes [17]. In the manufacturing sector, the measurement of work processes is analysed and each process is clearly defined (repeatability and reproducibility study). However, in the service sector, the system depends on employee performance [24]. In addition, Kwak and Anbari [55] and Kivela and Chu [17] suggested that human behaviour and characteristics such as friendliness, eagerness to help and honesty are assumed to have a major influence on service processes, which determine the quality of service provided to customers. In services, the emphasis should be on the improvement of timeliness characteristics (delivery time) and service non-conformity characteristics [33].

Six Sigma has the capacity to improve service because the concept focuses on improving cross sectional teamwork, prevention as a better strategy than cure, concern about employee morale, reduction in costs, developing employee problem solving skills, increasing job satisfaction, providing consistent service, and making decisions using data rather than assumptions [33]. Moreover, by using flowcharts to chart service, problems can be detected [9,52]. Six Sigma also: improves cross-functional teamwork across the entire organization, transforms organizational culture from 'fire-fighting' mode to 'fire prevention' mode, increases employee morale, reduces the number of non-value added steps in critical business processes through systematic elimination of waste, and leads to faster service delivery, reduced cost of poor quality (COPQ) customer complaints, and costs associated with misdirected problem solving. For this reason, Six Sigma could potentially cover the entire working process in a service organization. Thus, including the teamwork, statistical process control, and shared vision dimensions of Six Sigma in this study is seen as important.

### Six Sigma and Service Organization (Hospitality Industry)

Six Sigma was also found to be applicable to service organizations.

However, it was suggested that the structure be modified to suit the core business of the service organization. Consequently, the Six Sigma concept could be tailored to improve service by focusing on teamwork as well as using statistical data to make decisions. In relation to this research, it was also found that employees are essential to implementing the methodology in goal setting and vision [31,32]. The Six Sigma approach has recently been introduced to the hospitality sector. For example, Starwood Hotels and Resorts are known to be among the first hotel groups in the world to embrace Six Sigma. In addition, it was reported that service organizations that embraced the concept showed dramatic changes in revenue, reduced costs, and gained other positive outcomes [9,56].

According to Kwak and Anbari [55], Six Sigma is a powerful methodology and it was developed to accelerate improvement of service quality by focusing relentlessly on reducing process variation and eliminating non-value added steps or tasks. They added that improved processes led to improved customer satisfaction, increased productivity, a bigger market share, and sustainable profitability. Although Six Sigma has a proven ability to improve services, many service organizations remain unconvinced by the Six Sigma methodology [57]. According to Kivela and Chu [17], attempts to measure processes and deploy quality management programs in service organizations often struggle to develop and apply measurement tools to improve service delivery. Authors reported that working processes in the service industries are not well understood, charted, controlled, or documented due to excessive 'noise'.

The term 'noise' refers to an uncontrollable factor or event (for example, emotions of the persons who provide the service) during service delivery. In service organizations, most decisions about services rely on the judgment of the service deliverer [58,59]. In other words, decisions and processes are carried out by people unlike in manufacturing organizations [57]. In service organizations, work activities are not necessarily related to the work process and, therefore, the linkage between process measurements and service performance characteristics is difficult to establish [60]. Factors such as human (employees and customers) feelings, emotions and the variability of the service are among the barriers to implementing Six Sigma in service organizations, as service characteristics in general are known to be intangible and different to products [54]. It has also been found that in services, decision making is determined by the service deliverer and they are the determinants of the success of a service [55,61]. The occurrence of defects depends on the employee's level of competency, skill, knowledge and consistency in delivering the service [16,61]. By comparison, in manufacturing firms, if a product has a defect, product quality can be controlled, redesigned, recreated, or put on hold instantly. Any products that do not comply with the standards specified by the manufacturing organization can be withdrawn [18,22]. This is not the case with service delivery.

### Methodology

In Part A, the demographic profiles of respondents will be presented and these consist of; i) department, ii) gender, iii) age range, iv) salary range per-month, v) length of employment with current employer, and vi) level of qualification. This analysis is important because different demographic backgrounds produce different outcomes and this analysis was conducted as a means of gaining a better understanding of hotel employees' background. In Part B, six questions were adapted to assess Shared Vision and, again, a 7 point Likert type scale was used because this was how the scales were used

in previous research. Questions relating to Shared Vision were taken from the work of Gutierrez et al. [8]. The Klang Valley was identified as the most appropriate geographical sampling area because the region includes the main CBD (Central Business District) of Kuala Lumpur, the capital city of Malaysia, as well as the surrounding cities Putra Jaya and Selangor. The region is also recognized as the most popular choice for business, transitory and vacation tourists with more than 9.2 million tourist visits in 2011 or 35.7% of overall tourists in Malaysia. Kuala Lumpur, the capital city, is known as the gateway to Malaysia and 19.2% of all hotels in Malaysia are located in the Klang Valley Region [62].

There are approximately 40-50 four and five star hotels in this region. In addition, in 2010 Euro monitor reported that Kuala Lumpur was among the top 100 tourist destinations in the world, and The Klang Valley Region was ranked seventh after Bangkok (Thailand) and Antalya (Turkey). Hence, the Klang Valley was seen to be the most appropriate geographic area for this research. Four and Five star international hotels were chosen as the target population because these establishments are recognized as having well defined management systems, organizational structures and large, well-staffed departments. A stratified sampling method was used to select the respondents that were included in the study. Respondents from both Rooms Division and Food and Beverage departments were chosen because they were involved in face to face interactions with customers during the many and varied services delivered within four and five star hotels.

The raw data underwent three different types of analyses and these were: i) principal component analysis (PCA), ii) reliability and validity testing and iii) the Cronbach Alpha value to assess consistency. According to Hair et al. [62], there are two possible multivariate methods which can be used to identify the importance of each dimension. It was deemed important for multivariate analysis to be conducted in this research as a means to explore the significance among questions. Principal component analysis was seen as the most suitable multivariate method for several reasons. The method has the capacity to identify the most important questions (or variables) of each dimension and to explain the variation between variables. 400 questionnaires were distributed to four and five star hotels with 312 usable responses collected, which represents a 78% response rate [63].

## Findings

### Department and gender

By conducting cross tabulations between department and gender it was found that the front office department represents 50.3% of respondents and the food and beverage department represents 39.1% of the total respondents in the sample. In addition, there were respondents that represented departments directly related to the front office or the food and beverage department. This group of respondents constituted 10.6% of the total respondents. Overall, it was found that female respondents represented the highest percentage of respondents (60.9%) of the overall sample. This is not an unbalanced sample, however, as the hotel industry workforce, in this study in particular, is dominated by female employees. The distribution of respondents by department is presented in Table 1.

### Designation

As explained in Chapter Three, the Rooms Division is traditionally divided into two areas consisting of the Front Office and the Housekeeping department. Unlike the Rooms Division, the Food and Beverage department can be divided into 4 major sub-departments that

Departments		Gender		
		Male	Female	
Front Office	Count	77	80	157
	%	24.7%	25.6%	50.3%
Food and Beverage	Count	37	85	122
	%	11.9%	27.2%	39.1%
Others	Count	8	25	33
	%	2.6%	8.0%	10.6%
<b>Count</b>		<b>122</b>	<b>190</b>	<b>312</b>
<b>Total</b>		<b>39.1%</b>	<b>60.9%</b>	<b>100.0%</b>

Table 1: Respondent Distribution by Departments.

consist of the Coffee House, Banquets, Concept Restaurant and Room Service. However, other types of food and beverage areas may also exist depending on the hotel size [64-67]. The analysis of data found that employees from the front office department constituted 38.6% of the total respondents, with front desk assistants or receptionists constituting the highest percentage of these respondents. Respondents in the food and beverage department represented a total of 40.1% of the sample and waiters and waitresses from the coffee house represented (9.9%), bartenders represented (4.5%), and banqueting staff represented (9.3%) of these respondents. From the analysis, it can be suggested that those respondents from the Food and Beverage Department constituted the highest percentage and dominated the sample. However, respondents that represented others (hotel employees from either Front Office or the Food and Beverage Department) constituted 21.5%. Table 2 presents the frequency of designation.

### Age range

In this analysis, it was found that hotel employees within the age range of 21 to 25 years old represented the highest number of respondents with 55.8% in total. When coupled with the 26-30 age groups, the highest proportion of hotel employees that responded in this study was relatively young. Respondents from the age range of 41 to 45 years represented the smallest number in the overall sample with 1.6%. Table 3 shows the age and gender break down of the sample.

### Salary range

Salary or wages was one of the most significant factors identified in the qualitative research phase and, thus, was also important in this stage of the research because it has the ability to motivate, enhance performance and satisfy employee's needs and wants. It was found that 30.1% of respondents earn a salary of between MYR 1501 and MYR 2000 per month and this salary range incorporates the highest number of employees within the total sample. Respondents that earned between MYR 3001 and MYR 3500 were the smallest group and, interestingly, were evenly divided between male and female respondents. The salary range of MYR 3501-MYR 4001, however, was dominated by female employees. Table 4 presents the overall salary distribution.

### Length of employment with current employer

In this section, respondents' length of employment with their current employer is discussed. Table 5 shows that respondents that have worked for more than 3 years with their current employer make up 20.8% of the total respondents. In this analysis, it was also found that no male employees had worked with their current employer for more than 7 years. The number of employees that worked for their current employer for more than 8 years was rather low in percentage.

### Level of qualification

Level of qualification was found within the literature to have an

Designation	Gender			
	Male	Female		
<b>Front Office Department</b>				
Front Office Supervisor	Count	3	1	4
	%	1.0%	.3%	1.3%
Assistant Front Office Supervisor	Count	8	16	24
	%	2.6%	5.1%	7.7%
Receptionist/Front Desk Assistant	Count	13	29	42
	%	4.2%	9.3%	13.5%
Telephone Operator	Count	5	8	13
	%	1.6%	2.6%	4.2%
Bell Captain	Count	10	0	10
	%	3.2%	.0%	3.2%
Bellman	Count	18	0	18
	%	5.8%	.0%	5.8%
Porter	Count	4	0	4
	%	1.3%	.0%	1.3%
Doorman	Count	5	0	5
	%	1.6%	.0%	1.6%
<b>Total</b>				<b>38.6%</b>
<b>Food and Beverage Department</b>				
Food & Beverage Supervisor	Count	13	12	25
	%	4.2%	3.8%	8.0%
Assistant Food & Beverage Supervisor	Count	5	14	19
	%	1.6%	4.5%	6.1%
Captain	Count	3	4	7
	%	1.0%	1.3%	2.2%
Waiter/ess	Count	11	20	31
	%	3.5%	6.4%	9.9%
Bartender	Count	14	0	14
	%	4.5%	.0%	4.5%
Banquet Waiter/ess	Count	0	29	29
	%	.0%	9.3%	9.3%
<b>Total</b>				<b>40.1%</b>
<b>Others</b>				
Count		10	57	67
%		3.2%	18.3%	21.5%
<b>Total</b>				<b>21.5%</b>
<b>Grand Total</b>				<b>100.0%</b>
				<b>39.1%</b>
				<b>60.9%</b>
				<b>100.0%</b>

Table 2: Respondents Designation.

Age Range		Gender		
		Male	Female	
16-20	Count	9	0	9
	%	2.9%	.0%	2.9%
21-25	Count	51	123	174
	%	16.3%	39.4%	55.8%
26-30	Count	29	46	75
	%	9.3%	14.7%	24.0%
31-35	Count	27	9	36
	%	8.7%	2.9%	11.5%
36-40	Count	1	12	13
	%	.3%	3.8%	4.2%
41-45	Count	5	0	5
	%	1.6%	.0%	1.6%
<b>Total</b>				<b>312</b>
				<b>39.1%</b>
				<b>60.9%</b>
				<b>100.0%</b>

Table 3: Respondent Distribution by Age Range.

impact on the level of service rendered to customers' [65,66]. In Malaysia, the structure of formal education begins with primary

Salary Range		Gender		
		Male	Female	
<500	Count	14	13	27
	%	4.5%	4.2%	8.7%
500-1000	Count	22	31	53
	%	7.1%	9.9%	17.0%
1001-1500	Count	35	43	78
	%	11.2%	13.8%	25.0%
1501-2000	Count	39	55	94
	%	12.5%	17.6%	30.1%
2001-2500	Count	4	10	14
	%	1.3%	3.2%	4.5%
2501-3000	Count	5	5	10
	%	1.6%	1.6%	3.2%
3001-3500	Count	3	3	6
	%	1.0%	1.0%	1.9%
3501-4000	Count	0	11	11
	%	.0%	3.5%	3.5%
>4001	Count	0	8	8
	%	.0%	2.6%	2.6%
Others	Count	0	11	11
	%	.0%	3.5%	3.5%
<b>Total</b>		<b>122</b>	<b>190</b>	<b>312</b>
		<b>39.1%</b>	<b>60.9%</b>	<b>100.0%</b>

Table 4: Respondent Distribution by Salary Range.

Length of Employment with Current Employer		Gender		
		Male	Female	
< 12 months	Count	16	44	60
	%	5.1%	14.1%	19.2%
One year or more but less than 2 years	Count	9	23	32
	%	2.9%	7.4%	10.3%
Two years or more but less than 3 years	Count	24	31	55
	%	7.7%	9.9%	17.6%
Three years or more but less than 4 years	Count	21	44	65
	%	6.7%	14.1%	20.8%
Four years or more but less than 5 years	Count	32	9	41
	%	10.3%	2.9%	13.1%
Five years or more but less than 6 years	Count	1	4	5
	%	0.3%	1.3%	1.6%
Six years or more but less than 7 years	Count	13	18	31
	%	4.2%	5.8%	9.9%
Seven years or more but less than 8 years	Count	0	9	9
	%	0%	2.9%	2.9%
Eight years or more but less than 9 years	Count	1	3	4
	%	0.3%	1.0%	1.3%
Nine years or more but less than 10 years	Count	5	5	10
	%	1.6%	1.6%	3.2%
<b>Total</b>		<b>122</b>	<b>190</b>	<b>312</b>
		<b>39.1%</b>	<b>60.9%</b>	<b>100.0%</b>

Table 5: Respondent Distribution of Length of Employment with Current Employer.

followed by secondary schools. Later, students either enroll in private or public colleges or universities. The tertiary education system in Malaysia can be divided into Science and Technology and Social Science. In this analysis, the respondents' qualifications can be partitioned into two types and these are: i) qualifications that relate to hospitality and tourism at various levels, and ii) qualifications not related to hospitality and tourism at various levels. It was found that a large proportion of respondents graduated with a hospitality and tourism diploma 26.3%. School leavers with a MCE (Malaysian Certificate of Examination

– Year 5 in the Malaysian Secondary School System) (related to hospitality and tourism) and respondents that held a Master’s Degree in hospitality and tourism represented 6.4% of the sample and those with these high level qualifications were mostly female. The breakdown in qualification levels is presented in Table 6.

### Shared vision

The Kaiser-Meyer-Olkin value of 0.79 exceeded the recommended value of 0.6 [63] and Bartlett’s Test of Sphericity is statistically significant. This showed that there is a high degree of interrelationship among the questions within the dimension of shared vision. The unrotated factor solution extracted one factor with an Eigenvalue greater than one. According to Table 7, this factor accounted for 63.9% of percentage variance. In this test only one factor was generated from the analysis. Hence six questions were reduced into one factor.

Level of Qualification		Gender		
		Male	Female	
SPM Hospitality and Tourism Related (MCE-Malaysian Certification Examination)	Count	16	4	20
	%	5.1%	1.3%	6.4%
SPM Non Hospitality and Tourism Related (MCE-Malaysian Certification Examination)	Count	30	24	54
	%	9.6%	7.7%	17.3%
Diploma-Hospitality and Tourism Related	Count	23	59	82
	%	7.4%	18.9%	26.3%
Diploma-Non Hospitality Tourism Related	Count	10	13	23
	%	3.2%	4.2%	7.4%
First Degree Hospitality Tourism Related	Count	23	42	65
	%	7.4%	13.5%	20.8%
First Degree Non Hospitality and Tourism Related	Count	0	26	26
	%	.0%	8.3%	8.3%
Masters Hospitality and Tourism Related	Count	3	17	20
	%	1.0%	5.4%	6.4%
Others	Count	17	5	22
	%	5.4%	1.6%	7.1%
	<b>Total</b>	<b>122</b>	<b>190</b>	<b>312</b>
		<b>39.1%</b>	<b>60.9%</b>	<b>100.0%</b>

Table 6: Respondent Distribution by Level of Qualification.

Factor	Eigenvalues	Percentage of Variance	Cumulative Percentage
1	3.837	63.9	63.9

Source: Data analysis 2014.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy=0.79.

Bartlett’s Test of Sphericity=1136.664, Significance=0.00.

Table 7: Result of the unrotated factor extraction from the 6 questions (variables) representing Shared Vision (SV).

S. No	Factor One	LD
1.	In the organization, there is clear vision guiding the strategic goals and missions	0.69
2.	The leadership of the company shares a common vision of the organization’s future with me	0.86
3.	Our department shares the same ambitions and vision as other departments	0.83
4.	People in our department are enthusiastic about pursuing goals and missions of the whole organization	0.85
5.	I think the shared vision in the organization is appropriate	0.80
6.	I agree with management on what is important for our organization	0.73
	<b>Reliability Cronbach’s Alpha=0.88</b>	

Source: Data analysis (2014).

LD: Factor Loading.

Table 8: Result of Varimax rotated factor matrix for Shared Vision (SV).

The pattern loadings, factor structure and factor interpretation are shown in Table 8. The dimensions were defined by the variables with significant factor loadings of 0.6 and above. Reliability tests on each of the factors indicate a Cronbach Alpha coefficient above 0.88. This means that the 6 questions can be accepted.

### Discussion

As for shared vision, only one factor was extracted. Respondents reported that there is a clear vision guiding the strategic goals and mission in their organization (0.69). They also asserted that the leadership of the company shares a common vision of the organization’s future with hotel employees (0.86). Furthermore, different departments shared the same ambition and vision as other departments (0.83). It was also revealed that these hotel employees were enthusiastic about pursuing the goals and mission of the whole organization (0.85), and they reported that the shared vision in their organization was appropriate (0.80). Finally, they agreed with management on what was important for their organization (0.73). The evaluation of results found that the factor loading of “shared vision” was 0.6, which is above the recommended value. Thus, it can be concluded that shared vision plays a significant role in improving hotel employees’ performance. Shared Vision was found to be significant to employee performance as a means of achieving personal and organizational goals and therefore, it can be suggested that Shared Vision is a significant dimension contributing to high employee performance. This is in line with Gutierrez et al.’s [8] contention that an organization should clearly explain to employees the reason for the organizations existence. They added that employees should also be informed of the reason why they do the job and the implications of this.

### Contribution to Knowledge and Practical

This study has successfully obtaining its objective that was to examine the significance of Six Sigma as product and service improvement methodology. Through statistical analysis it was also found that the majority of respondents in this study understand what they have to do in order to achieve organizational objectives and goals. They also submitted that the idea of sharing a vision in their organization were adequate and sufficient. Furthermore, hotel employees in this sample asserted that their top management is serious in disseminating organization vision towards them. Therefore, it can be suggested that shared vision in this study is well-understood by hotel employee in this sample. Moreover, top management knows the importance of shared vision towards their employee. In summary, this study enriches the body of knowledge towards the field of service improvement methodology. Practically, the findings of this study can be used as a reference to examine whether hospitality organizations truthfully disseminate their business aspirations towards their employee.

## Limitations

Despite of the success of this study, few limitation were also faced. Time, money and sample selection constraint were the main concern in this research. The duration of 5 months of data collection limits the researcher to get more respondents. The sample selection was also found to be a barrier to this research. Therefore, Klang Valley was chosen in this study. This study was done and acts as a pilot study to assist towards bigger sample such as, the Northern and Southern part of Peninsula Malaysia as well as Sabah and Sarawak. To sum up, bigger sampling and ample time will be allocated towards future study.

## Conclusion

Overall, this study had successfully achieved its main objective that was to examine the significance of Six Sigma in the Hospitality Industry in Malaysia. It was also felt that shared vision is one of the most important principles in organization, because in the absence of shared vision left hotel organization without reason to exist. In conclusion, this study had revealed that shared vision has the ability to improve employee job performance (service) in a long run.

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