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The effect of monetary and non-monetary rewards on employee motivation: A review

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Abstract

The success of any facet of the business can almost be traced to motivate employees. This is especially true and important in today's turbulent and often chaotic environment where commercial success depends on employees using their full talents. The ability to attract, retain and develop talented employees is a key feature of a successful business. But this is not always easy because people are all different with different needs, interests, goals and thoughts and therefore would be motivated by different things. Sometimes employees even have goals that conflict with the organization's objectives. Therefore, monetary and non-monetary rewards are frequently suggested as methods for enhancing the motivation and performance of employees and to align the employees' objectives with the organizations. The objective of this paper is to review the literature relating the effect of monetary and non-monetary rewards on employee motivation. The review confirms the positive effect of monetary and non-monetary rewards on employee motivation. Moreover, it reveals that non-monetary rewards are more effective in the organizations where the employees are paid comparable salaries to compensate for their desire for monetary incentives at the work place. This means that non-monetary rewards would not be effective in a situation where the employees are struggling to fulfill their physiological needs as these are the most basic requirement of the employees. But monetary rewards are the fundamental component in employee motivation and it has the unique power to motivate employees by satisfying different kinds of needs without any support of other rewards. Therefore, the organizations have to focus on both of the monetary and non-monetary rewards and employ method/s appropriately in order to motivate and retain their employees and in turn to maximize the organizational performance.

Keywords: *Employee motivation, monetary rewards, non-monetary rewards.*

1. Introduction

The current business era is highly dynamic and competitive. It is widely accepted by the organizational theorists that manpower is one of the most important assets of an organization because things are getting done through employees. In other words, the success of an organization in realizing its objectives heavily depends on the performance of its employees. Therefore, it is important to focus on the factors affecting the performance of the employees and organizations develop different type of strategies to achieve competitive advantage over competitors in order to ensure their high organizational performance and long-term sustainability in the industry. According to Bateman and Snell (2007), the fundamental success drivers for competitive advantage for businesses are innovation, quality, and cost competitiveness. None of the above-mentioned success drivers can be successfully addressed and implemented, respectively, without highly skilled managers motivating their subordinates to achieve these objectives.

Motivation is the mostly accepted managerial tool which is widely utilized by the organizations to attract, retain and develop employees in order to capitalize their knowledge and talents for the success of the organization. Employees are individuals who bring their own perspectives, values and attributes to organizational life, and when managed effectively can bring considerable benefits to organizations (Mullins, 2002). One of the biggest challenges that managers face in executing business strategies to achieve competitive advantage is the selection and employment of motivational techniques that build commitment to operate excellence and winning attitudes among employees (Thompson, Strickland & Gamble, 2005; Peluso, Innocenti & Pilati, 2017).

William (2010) noted that the specific needs, characteristics, expectations, experiences, values and lifestyles have an influence on the development and formulation of appropriate motivation strategies and compensation schemes. To motivate and reward employees, human resource managers have deployed a host of strategies and tactics. According to Donnelly (2008) managers have had to use a variety of strategies that include monetary, non-monetary rewards and support tactics to motivate and reward employees. Arnolds and Venter (2007) mentioned that organizations have a big crisis of motivating employees. Their study showed that billions of money is spent on courses and incentives to help increase employees motivation each year; however it does not always give out higher levels of employees' motivation. This is because there is a different perception between employees and management on how the goals and objectives of the organization must be attained. Management and employees give different importance to the many motivational incentives taking into consideration the situation on the ground.

Rewards are generally used by many organizations as a motivational tool to enhance the performance of employees and it is a broad construct that has been said to represent anything that an employee may value that an employer is willing to offer in exchange for his or her contributions. Mendonca (2002) states that reward and compensation system is based on the expectancy theory which suggests that employees are more likely

to be motivated to perform when they perceive there is a strong link between their performance and the reward they receive. Sajuyigbe, Olaoye, and Adeyemi (2013) stated that rewards are basic conceptual elements in improving employee performance. Luthans (2000) highlighted two types of rewards which are monetary or financial (extrinsic) and non-monetary or non-financial (intrinsic) reward and both can be utilized positively to enhance employees' performance.

Armstrong (2007) defined that monetary rewards are refund in cash and in form of money for a given work done by workers in the organization. Bonus scheme, profit sharing, commission, tips, promotion, fringe benefits are considered as key dimensions of monetary rewards. Kasser and Ahuvia (2002) assert that, the idea of using monetary factors as inducements for employees to work well is not a new one, as there are records of some payment schemes as far back as the seventeenth century. Further, added that Frederick Taylor in 1911 described money as the most important factor in motivating the industrial workers to achieve greater productivity. Taylor advocated the establishment of incentive wage systems as a means of stimulating workers to higher performance, commitment, and eventually satisfaction. Robbins and Judge (2008) described that money is the crucial incentive to work motivation because it is the vehicle by which employees can purchase the numerous needs satisfying things they desire. Gbadamosi and Joubert (2005) found that money ethic is significantly and positively related to job performance of employees in the public sector in Swaziland. Springer (2011) supports the view that monetary reward and performance are positively correlated and argues that pay-incentives appear to increase productivity of employees regardless of what job they do. In contrast, Pinto (2011) found that wages did not significantly influence motivation and satisfaction of employees of eight companies of diverse economic segments in Brazil. In addition to that Fehr and Falk (2002) also recorded a negative correlation between monetary incentive and performance. But Mustapha (2013) found a significant and positive correlation between pay and job satisfaction. Further Santhapparaj and Alam (2005) studied job satisfaction among academic staff in private universities in Malaysia, Tan and Waheed (2011) analyzed Herzberg's motivation-hygiene theory and job satisfaction in the Malaysian retail sector and Wietzel (2009) examined the factors that motivate workers and promote retention in government service. All these studies found significant positive relationship between monetary rewards and employee motivation. In addition, Anthony, Govindarajan and Dearden, (1998), Kunz and Pfaff, (2002), Stringer et al. (2011) also supported that monetary rewards could be used to enhance the employee motivation and performance in organizations. Although positive effect of monetary rewards on employee motivation is dominating the literature, no effect and negative effect shown in the different setting cannot be underrated.

In recent years role of non- monetary rewards on employee motivation is also being focused to enhance the performance of employees in organizations. Musaazi (2002) described that non-financial rewards are the non-monetary gains that influence people through non-material rewards such as giving more responsibility, promotion, praise and recognition. This therefore opens up the debate that non-monetary rewards have a role

to play internal motivation of employees that monetary rewards cannot address. Kaur (2013) argued that financial reward played a critical role in attracting talented employees, but they have only a short-term impact on the motivational levels of employees. Harunavamwe and Kanengoni (2013) mentioned that the importance of money as a motivator has been consistently downplayed by most behavioral scientists like Herzberg who points out the value of challenging jobs, feedback, cohesive work teams and other non-monetary factors as stimulants to motivation.

Non-monetary incentive has a significant and distinct role that infuses enthusiasm in a worker to perform. Fisher (1995) agreed that, motivating employees through the use of non-monetary rewards is an important way to achieve an objective without the use of money. Wiesen (1999) states that non-monetary incentive has the prospects to encourage workers devoid of cash rewards. Heyman and Dan (2004) found that organizational performance can be raised to the highest level by offering non-monetary rewards to the workers/employees. Nelson (2003) noted that praise and recognition are the most efficient intrinsic rewards an employee wants to hear as employees want to feel that they are making a contribution at their workplaces. Dambisya (2007) investigated that the use of nonfinancial incentives for health worker leads to satisfaction of employees and found that non-financial rewards affect the performance of an individual. Luthans (2008) asserts that, non-monetary rewards include: praise, recognition and benefits and further added that it can be positively utilized to enhance performance. Neckermann and Kosfeld (2008) also affirmed that, non-monetary rewards are social recognitions and they further extended the list to include genuine appreciation, certificate and acknowledgement. Tausif (2012) explored the relationship between non-monetary rewards and job satisfaction for the educational sector in Pakistan and result shows that there is a strong relationship of non-financial rewards with job satisfaction.

However, Bowen (2002) warns that managers have to be aware of nonmonetary rewards because such rewards should not be used at all times and should be utilized sparingly. Beer and Cannon (2002) contended that non-monetary rewards with their advantages have the ability to motivate employees but there is no assurance that they will always lead to efficiency and success in the workplace. This implies that although there are some views regarding the possibility of failure for the use of non-monetary rewards for motivation majority of studies found that non-monetary rewards have positive correlation with employee motivation.

According to the findings from above mentioned studies it is obvious that monetary and non-monetary rewards have positive impact on motivation. But it is vital for employers to understand what effectively motivates their employees in order to maximize the overall potentials available in an organization. However, it might be challenging for an organization to find out what motivates its employees, this is because individuals are motivated differently. According to Thompson (2000), organizations are often faced with difficulty in selecting rewards that are suitable for employees. There is still much confusion as to which rewards really motivate employees in order to obtain high

performance. Because there are mixed findings in the literature to determine which type of reward is more effective in enhancing employee motivation.

In this backdrop, this paper reviews theoretical and empirical literature to improve our understanding on monetary and non-monetary rewards and their effect on employee motivation.

2. Literature review

2.1 Monetary and non-monetary rewards in employee motivation

A reward is defined as all of the monetary, non-monetary, and psychological payments that an organization provides for its employees (Bartol & Locke, 2000). A reward is presented after the occurrence of an action with the intent to cause the behavior to occur again. This is done by associating positive meaning to the behavior and it represents what the individuals want to obtain from work or what they perceive (Bartol & Locke, 2000). Reward is an important tool that management can use to channel employee motivation in desired ways. According to Pinto (2011) reward is the benefits that arise from performing a task, rendering a service or discharging a responsibility. Osborne (2013) defines reward as anything that an employee may value and desire and that the employer is able or willing to offer in exchange for the employee's contributions. Merchant (2007) stated that many organizations use reward systems to emphasize on which parameters their employees should put extra effort on, by including them in their reward program. For a reward system to be motivational, the reward should satisfy a number of criteria such as, value, large enough to have an impact, timely, understandable, and durable and cost-efficient Merchant (2007). Rewards are traditionally divided into two categories as monetary rewards and non-monetary rewards.

Monetary rewards consist of tangible awards that are external to the attempts and performed tasks of an employee. Ivancevich and Konopaske (2013) define extrinsic rewards as financial compensation which is made up of direct and indirect financial compensation. Monetary rewards are of great importance because they are the basic element of the employment relationship which aims at improving human resources outcomes (Banfield & Kay, 2008). Bustamam, Teng and Abdullar (2014) recognized the prime purpose of monetary incentive towards successful accomplishment is to motivate the employees and encourage them so as to excel in their job performances.

Non-monetary reward systems include intangible rewards that offer compensation to the employee for their performance. Non-monetary rewards are intangible in nature and offer psychological satisfaction to the employee. According to Armstrong (2007) signs of gratitude, appreciation and thankfulness to the employee offer some form of nonmonetary reward to the employee. Non-monetary rewards boost the psychological motivation of employees as well as promote employee commitment which is a major critique of the monetary forms of reward (Zhang, Farh, & Wang, 2012).

2.2 Monetary rewards and employee motivation

Many studies conducted not only in developed countries but also in developing countries have identified the effect of monetary and nonmonetary rewards on employee motivation, productivity and overall business performance (Peluso et al., 2017; Markova & Ford, 2011; Kumar, Hossain & Nasrin, 2015). Numerous studies have also demonstrated that rewarding employees is one of the best ways to keep the workforce motivated (Mamdani & Manhani, 2016; Zhang et al., 2012; Bustamam et al., 2014).

Judiesch (1994) conducted a Meta-analysis and found that individual pay incentives increased productivity by an average of 43.7%. Another study conducted by Barongo (2013) regarding significant beneficial interaction between salaries and motivation. He presented a convincing argument that increasing salaries within organizations may help to increase the performance of the employees. Kohn (1993) as cited in Fryer (2010) explains that, workers will have decreased motivation and that their achievement will be negative once the monetary incentive strengths are taken away. Besides, Cameron and Pierce (1994) as cited in Shaw and Gupta (2015) propose that incentives are without a doubt solidly and completely related to individual performance and further, that sparks appeared to have no negative bearing on motivation.

Lazear (2000) also suggests that by adding financial rewards to the compensation of employee for the sake of motivation can attract more geared workers to the organization. Further he described that introduction of monetary rewards could gain extra efforts of the employee to that extent where the marginal value added is equal to the marginal cost paid for that additional work. This shows that financial incentives are some types of paid value to employees in return for their extra efforts. Akintoye (2000) asserts that money remains the most significant motivational strategy demonstrates the motivational power of money through the process of job choice. Furthermore he explained that money has the power to attract, retain, and motivate individuals towards higher performance. Sinclair and Katz (2005) mentioned that money possesses significant motivating power in as much as it symbolizes intangible goals like security, power, prestige, and a feeling of accomplishment and success. Luthans (2005) also highlights that money provides a rich basis for studying employee behavior as it offers explanations for why people behave and act as they do.

Monetary rewards are of great importance because they are the basic element of the employment relationship which aims at improving human resources outcomes (Banfield & Kay, 2008). Edirisooriya (2014) conducted a study on impact of rewards on employee performance. This study has examined the relationship between extrinsic reward, intrinsic reward and employee performance in electrical companies. The study concludes that reward plays a vital role in employee performance and it is demonstrated that there is a very strong relationship between pay and employee performance. It proves that most of the employees in electrical companies highly prefer monetary rewards irrespective of their position.

Weerasinghe (2017) conducted a study to distinguish the impact of financial incentives towards employee motivation in University of Sri Jayewardenepura in Sri Lanka. The study comprised an exploratory contextual analysis outline with both quantitative and qualitative strategies. This study evidently shows that financial incentives have been utilized to hold their key employees and balance out their employee motivation and the fact proven through the academic and nonacademic staff, that there is a positive impact of financial incentives towards the employee motivation. William (2010) conducted a study in Cameroon on factors that influence employees' motivation. The study examined financial rewards and performance benefits. The study found that financial rewards and performance benefits both contributed significantly to employee motivation and thereby increasing employees' level of productivity.

A case study conducted on a Taiwanese construction firm indicated that monetary compensation remains a powerful motivator for workers. Gkorezis and Petridou (2012) assert that financial rewards that are associated with performance have the potential to influence employee motivation and organizational effectiveness. Haruvamwe and Kanengoni (2013) note that an analysis of thirty-nine studies conducted over four decades by various researchers in different countries concluded that financial rewards motivate employees. Further United Nations Development Programme mentioned extrinsic rewards play a key role in motivating employees in developing countries and rewards are poor and below the Poverty Datum Line. The study found monetary rewards have significant positive impact on employee motivation in developing countries. Osa (2014) mentioned that the financial incentives can motivate worker to perform well on their occupation. Further he added that administrators persistently look for approaches to make an encouraging domain where workers will work at their discretionary levels to accomplish the authoritative objectives. Work place motivators largely incorporate with financial incentives where it can be different while similarly affecting partners. The reason for financial incentives is to compensate workers for amazing occupation execution through cash. Research demonstrates that pictured financial incentives vary for workers in view of profession stage and generation.

A qualitative research approach has been employed by Chan and Ma (2017) to explore the relationship between monetary rewards and employee motivation in Chinese companies. The findings show contradiction with previous studies about extrinsic motivation may have negative effect on creative workers' performance. Amin and Majid (2017) conducted a study in Malaysian manufacturing industry regarding impact of compensation and benefits on executives' performance. Findings indicated that there is significant influence of compensation and benefits on employee motivation. A study conducted by Sawicki in 2016 includes an international study carried out in 14 countries such as Germany, Belgium, Spain, France, Italy, Sweden, Great Britain, Romania, turkey, Finland, Austria, Czech Republic, the Netherlands and Poland, where 13600 employees were researched in terms of mood and motivation for work. The study clearly shows that 60% of workers are not satisfied with the level of their remuneration. Additionally, about 40% believe that their motivation is on the decrease. The study also asked about the reasons for resignation from the previous workplaces. A study was

conducted by Belushi, and Khan (2017) to investigate the impact of monetary incentives on the Shinas College of Technology - Oman employees' motivation and found that the employees are motivated by salary and on duty allowance rather than other benefits.

A quantitative study conducted by Met, Ali and Juhary (2015) to investigate the direct effect of monetary motivation on employees' job performance and mediating effect of job satisfaction on the relationship between monetary motivation and employees' job performance at oil and gas offshore production facilities in Malaysia. The results showed that there is a significant direct effect of monetary motivation on employees' job performance, and job satisfaction partially mediated the relationship between monetary motivation and employees' job performance.

This brief review revealed that although few studies predict that monetary incentives may lead to decreased effort and employee motivation, majority of studies revealed a significant positive relationship between monetary rewards and employee motivation. Because monetary reward, by its nature, is related to the satisfaction of various needs hence it can lead to motivating people at work. The physical value of money may not be valuable, but the perceived value of money is what makes it acquire motivating power.

2.3 Non-monetary rewards and employee motivation

In the early 20th century, money was considered as the most important factor into the production of goods and services. However, after a line of researches, one in particular that is the "Hawthorne Studies", conducted by Elton Mayo from 1924-1932 at the Hawthorne Works of the American Western Electric Company in Chicago. It was concluded that employees were not motivated not only by salaries, but that employee behavior was linked to their attitudes (Lindner, 1998). Hijazi, Anwar and Mehbood (2007) mentioned that recent studies show that non-financial rewards have the potential to improve the competitiveness of organizations in attracting and retaining employees. These rewards are primarily unique to an organization, are a less costly alternative to financial rewards and have a long-term focus, especially in the case of learning and development. Organizations face negative consequences, when they ignore the importance of non-financial rewards on employee retention.

In the United Kingdom context, non-financial motivation is particularly strong in the public sector, and so-called "public service motivation" which has a motivation to serve the interests of the community, which also leads public sector employees to commit efforts because of the value they attach to a social service or other public goal (François, 2000). Stovall (2003) conducted a research on non-financial rewards and worker job satisfaction. The result shows that an effective reward package could have an important impact on the employee's performance. Further he explained that non-financial rewards motivate workers which lead to job satisfaction.

In the context of Africa, Kotler and Kallen (2007) conducted a study to describe how non-financial motivation result in employee motivation and how it affects in behaving positively towards the following ways: employees who stay loyal to the organization,

speaking positively about the organization in comparison to newer employees. In another study Kube et al. (2006) describe that monetary rewards are beneficial in short-term period and ineffective for long-term period. Further they state that non-monetary rewards have a significant and consistent effect on their satisfaction. Dewhurst, Guthridge and Mohr (2009) examined the responses received from executives, managers, and employees around the world and found that three non-monetary motivators such as praise from immediate managers, leadership attention and a chance to lead projects or task forces were more effective motivators than the three highest-rated monetary incentives like cash bonuses, increased base pay and stock or stock options.

Erbasi and Arat (2012) examined the impact of financial and non-financial incentives for food and hospitality sectors in Turkey and found that both financial and non-financial rewards are important elements of job motivation. Nonetheless, non-monetary rewards are considered more important in terms of motivating workers to increase their performance compared to monetary rewards performance in motivating employees. Tausif (2012) investigated the relationship between non-monetary rewards and job satisfaction among teachers in public schools in Kisii County and found that non-financial rewards are the most powerful predictors of job motivation and ultimately job satisfaction. Aktar (2012) contend that non-monetary rewards which are represented by recognition, learning opportunities, challenging work and career advancement, have been found to be an effective tool in motivating workers and consequently increase their performance. This reward is highly appreciated probably due the opportunity it offers in terms of skill development of the workers which in the long run could be translated to higher monetary reward. Another study was conducted by Ijaz (2013) to exhibit to what extent non-financial incentives are utilized in the public sector of Pakistan and whether non-financial incentives have the potential to increase the motivation of public employees as much as the financial incentives. According to the results of the study, most of the employees think that the level of utilization of the nonfinancial incentives in their organization is inadequate. Also, the findings suggest that they value non-financial incentives as much as financial incentives.

Aisha (2013) conducted a research on the effects of working ability, working condition, motivation and incentives on employee multi-dimensional productivity in Indonesia. The results showed that working conditions, incentives and motivation had a statistical significant effect on employee productivity.

Tausif (2012) explored the relationship between non-financial rewards and employees job satisfaction for the educational sector of Pakistan. Results show that non-financial rewards are the strong determinant of job satisfaction for the employees of public educational sector of Pakistan. Njambi (2014) also found a significant relationship between employee motivation and organizational performance in Kenya. The study also found that both intrinsic factors such as employee achievements, recognition, and work prestige, all were significant in enhancing employees' level of motivation among employees. Kumar, Hossain and Nasrin (2015) conducted a study to measure the

impact of non-financial rewards on employee motivation in different organizations of Bangladesh. The results indicate that a significant impact on non-monetary rewards contribute to employee motivation. There is a positive correlation between non-monetary rewards and employee motivation.

This literature reviews signifies the importance of non-monetary rewards to enhance employee motivation. Furthermore this analysis explored that effective non-monetary rewards can change a person's attitude in the workplace which itself brings a positive change in environment and also enhances employee performance. When employees have positive attitude towards their job, they feel committed with the organization and get engaged in the work and results will be effective output. Thus, non-monetary rewards are also vital to satisfy employees' many other needs such as social interaction, belongingness, recognition, respect, attention, a feeling of achievement, autonomy, a meaningful job, a feeling of self-worth, developing one's full potential, feedback about performance etc. Finally, although few studies casted doubt on the motivational power of non – monetary rewards majority of the studies confirmed the positive relationship between non- monetary rewards and employee motivation.

2.4 Monetary and non-monetary rewards: Which is more effective?

The present review shows sufficient evidence to support the view that both monetary and non - monetary rewards have a positive effect on employee motivation and their performance. But which dominates over other is remaining unanswered. Some studies attempted to answer this question. Al-Nsour (2012) investigated the influence of financial and non-financial incentives on the organizational performance of the employees in Jordanian Universities and concluded that financial incentives are more valuable than non-financial. Rahim and Daud (2013) from their study in Malaysia confirm that extrinsic rewards such as salary, medical, bonus and accommodation are at high level of importance than non-monetary rewards. Zaman (2011) states that monetary rewards correlate directly with employee motivation while non-monetary rewards does not make any significant impact on employee motivation. Wallace and Zeffane (2001) noted that monetary rewards are among the most powerful factors affecting employee motivation and performance, money is a unique reward that can satisfy different needs such as physiological need for food.

Many recent studies state that monetary rewards have a significant positive effect on employee motivation, productivity and performance, while others cast doubt on previous research and assert that there is low correlation among the non – monetary rewards (Mokhniuk, 2016). Zaidi and Abbas (2011) also reported that monetary rewards have higher correlation with motivation than non-monetary rewards. On contrary Uzonna (2013) states that the use of non-monetary rewards can be effective and less costly way of motivating staff as opposed to monetary rewards.

With these it is apparent that money is indeed the important factor that motivates people at the workplace. Because although some studies stated that non-monetary rewards are most effective in employee motivation than monetary rewards majority of the studies

found that monetary rewards are most effective than non-monetary rewards due to money is regarded as a very high reward for the individuals that have worked hard for it. It is also regarded as the highest form of reward for employees.

3. Conclusion

This paper reviewed extant literature dealing with the effect of monetary and non-monetary rewards on employee motivation. The success of monetary rewards on the motivation of employees has long been discussed in the literature. This paper found that monetary rewards are traditionally accepted in the international scenario and it is evident that monetary rewards have significant and importance effect on employee motivation without any major differences between developed and developing country context. This is due to the fact that money is considered as the sign of triumph and accomplishment because it allows the human to fulfill the needs of belongingness. It enables the human to establish the status, rank and authority. However, there are researchers who completely disagree with money being the only key motivator stating that money does not significantly affect employee's motivation. Though monetary reward contributes a lot in motivating the employees, but at the same time nowadays organizations have also been recognized the non-monetary rewards are equally important in enhancing the employee motivation. The impact of non-monetary rewards is instrumental in improving the employee morale. Employees expect recognition and encouragement for their services because nobody likes to be unappreciated for the efforts he or she made. Therefore, the organizations have to focus on both of the monetary and non-monetary rewards in order to motivate and retain their employees in order to maximize the organizational performance. However, it should be noted that non-monetary incentives are only effective when money is not an issue, that is, only if employees are satisfied with their salaries or monetary rewards.

All in all, monetary reward is the fundamental component in employee motivation and it has the unique power to motivate employees without any support of other rewards. Non-monetary rewards also needed for employee motivation, but these rewards do not have the power to motivate employees without the support of monetary rewards.

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Contribution of Sri Lankan state university staff to knowledge exchange between universities and industry

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Abstract

Many studies have been attempting to solve the existing debate on knowledge exchange between university and industry and the role of the university in the last few years. However, still, inconclusive arguments have been going on the topic. Therefore, the study hopes to spark the burning debate on knowledge exchange between university and industry through academics' contribution. Accordingly, the study organized empirical facts and findings around joint researches, contract researches, human resource mobility, and training that easily knowledge moves from university to industry, and on which finalized the study scope developing four directional hypotheses connecting knowledge exchange process with aforementioned dimensions. First-hand data were gathered through an e-mail survey from the academic staff of national state universities and have them processed through the SPSS software package. Basic descriptive statistics and inferential data analysis tests were employed on the data to assess the academic contribution to the knowledge exchange process. The statistics highlighted that the overall involvement of academic staff in joint works, contract works, human resource mobility, and the training with industry are very low in Sri Lanka. The regression results of the study confirmed the significant impact of joint research works and training on the knowledge exchange process between universities and industry in the Sri Lankan context. Thus, universities should develop a more flexible and convenient policy package to promote joint research work and training to uplift the contribution of academic staff into industry matters effectively.

Keywords: *Contract research, human resource mobility, joint research, knowledge exchange, training.*

1. Introduction

Universities are institutes that perform a key role within contemporary society educating a larger proportion of the population (Perkmann et al., 2012). Indeed, publicly funded universities and their researches must have a profound impact on the economy and national development addressing scorching economic and social issues (Balconi, Brusoni, & Orsenigo, 2010). However, universities in the past have witnessed failing in accomplishing the underline principle of knowledge exchange at a commercial level, thus businesses have to have their own in house research mechanism for knowledge generation and self-development (Lee, Hwang, & Choi, 2012). With times, not long ago, internal research and development capability of business firms became a camouflaged vein for fierce competition and competitive entry. Accordingly, a company, which is financially and technically strong, could beat any rivals in the business, however, that was not always fair to strangers and start-ups, which was a major competitive threat for economies. The paradigm of open innovation changed everything in which former leading industrial enterprises confronted remarkably strong competition from many new companies and star-ups (Chesbrough, 2012), with transferring science and technology across boundaries of organizations. Now, it is noticeable that firms do not encourage much in house research competencies, albeit existing attempts extensively relying on the external source of knowledge and researches (Howells, Ramlogan, & Cheng, 2012; Siegel, Waldman, & Link, 2003). This paradigm shifts enabled universities to commercialize knowledge at a cost of the industry with a profit. Accordingly, under open innovation, universities should think of breaking its traditional vein of protective sentiment and waving friendly hands to industries for mutual benefits. Consequently, a notable trend recorded everywhere is that many, not all universities have taken considerable effort to develop a “third mission” (Perkmann et al., 2012; Razak & Murray, 2017) for a collaborative journey with the industry. It confirmed universities have been undergoing the process of change towards where scientific knowledge can be effectively commercialized through patents and licensing.

University name itself gives the meaning of openness, hence by nature university is open to everyone (Poyago-Theotoky, Beath, & Siegel, 2002), and is not confined to its boundary to anyone who is in and is expected to be in. The sky is the boundary and horizon is the limit of the university, therefore unless and until one has his psychological boundary, no one has defined correctly limit of the university. This open nature of the university is a blessing to open innovation where knowledge can easily flow between the boundaries of organizations. Very often, universities make their scientific output freely available with the aim that it would be picked up by researchers for further development or industry for application (Striukova & Rayna, 2015). Moreover, university researches often address real industrial issues that have been scorching the long run, in particular, research output may be a form of new product, service or business process that can be commercialized through patent and licensing.

The knowledge exchange between university and industry may take different forms. The most common transfer channels are conferences, meetings, publications, contact researches, collaborative researches, co-supervising, industrial PhDs, consultancies, informal conversations, and supports (Jonsson et al., 2015). Academics play an important role in this process sharing knowledge through researches, consultancies, training, supervising, and so on. When they are active and forward in the process, knowledge movement is alive and worthwhile. Accordingly, it is worthwhile to assess their support for the knowledge exchange process in an open innovative ecosystem. The research problem of the study was how to do and to what extent, academics contribute to university-industry knowledge exchange in Sri Lanka. Thus, the primary focus was given to explore the contribution of academic staff to the knowledge exchange process with industry in Sri Lanka. Accordingly, the present study will be significant in many ways. First, this is the first systematic study that describes the industry-university relationship in Sri Lanka. Hence, the study would be a great support and be a platform for policymakers and industry delegates to promote future collaborative engagements in the economy. Second, the study explored to what extent academics contribute to the knowledge exchange process would provide a more accurate picture of present knowledge movement in the economy through universities.

The paper is structured to give an idea about the university-industry knowledge exchange process so that section two of the paper briefs theoretical base and empirical findings around the topic. The road map and techniques used for the study are discussed in section three, and section four is used for the data analysis. The fifth section is detained for discussion and recommendations.

2. Literature review

Open innovation is defined as the purposive use of inflows and outflows of knowledge to accelerate internal innovation and expand the markets for external use of innovation (Chesbrough, 2012). It may take place in three different ways (Gassmann & Enkel, 2004) as inside-out innovation, outside-in innovation, and mixed innovation. Inside-out innovation focuses on commercializing internal knowledge through patents and licensing rather than waiting on own internal paths to the markets (Striukova & Rayna, 2015). Outside-in innovation absorbs external knowledge flows to foster internal research and development activities. In this process, customers, suppliers, competitors, cross-sector companies, universities, and research institutions are considered as potential sources of ideas (Chesbrough, 2003). The last type of process is called the "coupled process", which is the combination of both inside-out and outside-in innovation (Striukova & Rayna, 2015).

Before the open innovation, knowledge exchange existed between university and industry. Single European Act (1987) promotes university-industry collaboration (Striukova & Rayna, 2015) and Nonwovens Cooperative Research Center established in 1991 as National Science Foundation (NSF), State-Industry-University Cooperative

Research Center (UIDP, 2014) evident past knowledge-based interactions. However, many of former relationships were often government-led or result of public policies (Zinck & Newen, 2008) rather than the real requirement of knowledge exchange. University-industry collaboration brings many advantages to both entities. For the industry, it provides access to technology, fresh knowledge, qualified graduates, specialized talents and networks (Lee, Hwang & Choi, 2012), facilitates research and development, human resource mobility, innovative solutions, collaborative publications (Lee et al., 2012; Perkmann & Walsh, 2007). In return, the university will benefit from attracting funds for research, accessing real data and modern equipment, familiarizing with industrial science and technology, supplementary income (Blackman & Segal, 1993). Further, it reinforces academic entrepreneurship, university spin-offs, and application of academic researches (Lee et al., 2012; Perkmann & Walsh, 2007). Instead of the aforementioned advantages, there are several demerits have been discussing at many academic forums. For the industry, there is a big risk if any sensitive information leaks to competitors, if core business activities outsource through the collaborations (Dahlender & Gann, 2010), and it is a challenge to capture the benefit from external knowledge and maintain long-term relationships with several parties simultaneously. Moreover, innovating with partners not only share risk but benefit too. To university, external engagement significantly deteriorates the research agenda of scholars (Blumenthal et al., 1996).

2.1 Types of university-industry relationship

In a competitive environment, knowledge can be moved between university and industry in different manners. According to Ahrweiler, Pyka and Gilbert (2011) and Feldman and Baba (2015), the relationship can be either formal, informal or both. The formal relationships include licensing of patents, academic spin-offs, contract research, collaborative research, counseling (Perkmann et al., 2012), co-publications, mutual secondments, and employment of graduates, that based on a signing a legal agreement between the entities (Padilla-Melendez & Garrido-Moreno, 2012). In contrast, activities such as informal meetings, consultancies, lectures and conference participation, and ad-hoc advice can be identified as informal relationships (Ahrweiler et al., 2011). These informal interactions may purely be based on personal connections and interpersonal relations of each party (Melese, Lin. Chang, & Cohen, 2009 ; Perkmann & Walsh, 2007). Moreover, these interactions can be segregated as industry-pull connection and university-push interaction (Poyago-Theotoky et al., 2002). As per Schartinger, Rammer, Fischer, and Fröhlich (2002), the interaction between academics and industry has grouped into four: Joint research, Contract research, Human resource mobility, and Training. These interactions could be seen both at individual and institutional levels. All types of knowledge interaction between university staff and firms could be arranged based on the degree of formalization, suitability to transfer tacit knowledge, and personal contact as follows.

Table 1
Types of knowledge interactions between university and firms

| Types of knowledge interaction | Formal interaction | Transfer of tacit knowledge | Personal contact |
|--|--------------------|-----------------------------|------------------|
| Employment of graduates by firms | +/- | + | - |
| Conferences or other events with firm and university participation | - | +/- | - |
| New firm formation by university members | + | + | +/- |
| Joint publications | - | + | + |
| Informal meetings, talks, communications | - | + | + |
| Joint supervision of Ph.D. and Masters theses | +/- | +/- | +/- |
| Training of firm members | +/- | +/- | + |
| Mobility of researchers between universities and firms | + | + | + |
| Sabbatical periods for university members | + | + | + |
| Collaborative research, joint research programs | + | + | + |
| Lectures at universities, held by firm members | + | +/- | + |
| Contract research and consulting | + | +/- | + |
| Use of university facilities by firms | + | - | - |
| Licensing of university patents by firms | + | - | - |
| Purchase of prototypes developed at universities | + | - | - |
| Reading of publications, patents, etc. | - | - | - |

+: interaction typically involves formal agreements, transfer of tacit knowledge, personal contacts;
 +/-: varying degree of formal agreements, transfer of tacit knowledge, personal contacts;
 -: interaction typically involves no formal agreements, no transfer of tacit knowledge, no personal contacts.

Source: *Extracted from Schartinger et al., (2002, p. 302)*

This study mainly focuses to assess the academic contribution to knowledge exchange between university and industry. The term academic contribution is used here to describe all types of direct, indirect, codified, non-codified, personal / official, formal/informal engagement of academic staff to transfer knowledge and science between the university and the industry. Knowledge interaction is measured by the side of the industry and the side of the university (Schartinger et al., 2002). This study, the university side is chosen as a study area. Having considered the nature and types of relationships a university had with industry, the current study focused its investigation along key dimensions which disclose all types of knowledge interactions and well express the contribution of academic staffs are joint research, contract research, staff mobility and training (Schartinger et al., 2002).

3. Methodology

The study aimed to explore the contribution of academic staff to university-industry knowledge exchange in Sri Lanka through four directional hypotheses, therefore by nature study was quantitative and explanatory. The study applied the deductive research method and questionnaire survey strategy. A conceptual framework was developed through the literature review in which joint research, contract research, staff mobility, and training were identified as the independent variables and knowledge exchange as the dependent variable. All the academic staffs attached to state universities were the population and 425 respondents were selected as the sample randomly. The study reached the sample through a standardized questionnaire. The questionnaire had three sections. Section one contained the short answer questions related to respondents' demographic information such as the university, faculty, age, gender, research focus so on. Section two included a set of Likert scale questions to measure four independent variables. The questions related to joint research, contract research, human resource mobility, and training were managed through previous studies. Here, studies of Kitson and Hughes, 2010; Scandura, 2016; Ankrah and Al-Tabbaa, 2017; Schartinger et al., 2002; Padilla-Melendez and Garrido-Moreno, 2012; assisted a lot. The last section included standard questions developed by Kitson and Hughes, (2010), albeit a few questions had to alter as suitable to the Sri Lankan context. This cross-sectional study collected data from 15th May 2019 to 31st July 2019. Face and content validities of the questionnaire were ensured, being evaluated by two senior academics of the Rajarata University of Sri Lanka. The alpha test was used for reliability measurement. The study mainly employed descriptive statistics, correlation, and regression analysis to test developed hypotheses.

4. Results and discussion

A study distributed a questionnaire to the sample academics through e-mails, but only 178 had responded. Based on the return questionnaires, the study checked the test reliability through the Alpha coefficient.

Table 2
Reliability results

| Variable name | Numbers of items | Alpha value |
|-------------------------------|------------------|-------------|
| Joint Research | 06 | 0.889 |
| Contract Research | 07 | 0.874 |
| Human Resource Mobility | 07 | 0.780 |
| Training | 06 | 0.906 |
| University-Knowledge Exchange | 08 | 0.773 |

As per table 2, the alpha coefficient of each variable was greater than the threshold value (0.7), and it indicated that the questions included in the questionnaire are not biased. That was ensured consistent measurement across time and the various items in the instrument.

4.1 Sample profile

The sample represented all the state universities. Out of the respondents, 25% of them were from the University of Sri Jayewardenepura. The responses from the Universities of Rajarata, Sabaragamuwa, Peradeniya, and Moratuwa were 18%, 14%, 14%, and 9.6% respectively. The responses from the university of Vavuniya, Wayamba, and South Eastern were very low compared to the other state universities. As per table 03, the study fairly represented both genders. Around 45.5% of respondents are male, and 54.5% are female, and both groups belonged to all grades of staff; 2.2% are Senior Professors, 7.9% are professors, 59.6% are Senior Lecturers, and 30.3% are Lecturers. In terms of qualification, 43.8% of respondents had Ph.D. qualifications and 14.6%, 36% qualified M.Phil, and Master Degrees respectively. An area of specialization was identified, along with the academic faculties he/she serves to. The majority of the respondents were from the Management and followed by Medicine and Science Faculties. The lowest contribution was reported by the Faculty of Technology. 40% of respondents joined universities just after graduation without proper industry experience and, 6.2% of respondents have experience in charitable organizations. Only 34.8% of respondents have working experiences in either small and medium or large-scale public or private sector organizations.

Table 3
Demographic statistics

| Category | Percentage |
|-------------------|------------|
| Gender | |
| Male | 45.5 % |
| Female | 54.5 % |
| Job title | |
| Senior Professors | 2.2 % |
| Professors | 7.9 % |
| Senior Lecturers | 59.6 % |
| Lecturers | 30.3 % |
| Qualifications | |
| PhDs | 43.8 % |
| M.Phil | 14.6 % |
| M.Sc./ MBA/ MA | 36 % |
| BA/ B.Sc. | 5.6 % |

4.2 Overview of the variables

Joint research activity for the study means that a collaborative research works of an academic with the industry, aiming to develop an existing/new product, service, business process, best practices or solve the problems of the industry, and was measured through five Likert questions range from one to five. As per table 04, the overall mean value for the joint research activity is 2.479, and the standard deviation is 0.924.

Accordingly, the level of joint research activity of academic staff is very low in the Sri Lankan context. This lower collaboration has captured due to the lower connection of academics with industry as a means of improving the product, service, and business processes. The deeper analysis found that 44% of respondents had never been joining with external organizations for knowledge exchange. Though many respondents have been engaging in applied type research works, only 13.4% of them often connect with industry for joint research works. Those factors have lowered the collaborative research works of academics with industry.

Contract research is a paid-service performed by university researchers for external organizations on a contractual agreement. The study measures degrees to which an academic has such contractual agreements for knowledge sharing with industry. Table 04, indicated that the overall mean value of contract research is 2.042, and the standard deviation is 0.773. It demonstrates that respondents maintain a minimum level of contractual agreement with industry for research and knowledge sharing. The detail exploration of the contractual research works found that 63.8% of respondents had never taken industrial assignments and research on contract. Consequently, very rarely industry too had called them for industrial assignments. Business proposal development, work for a patent, product/process improvement, feasibility study, and business project partner are the most popular paid contractual activities that academics engage in his/her career. However, the survey indicated that more than 68.9% of respondents have never involved in any contractual activity in their careers. Further, it was noticed that academic are not willing to transmit knowledge on price and has lowered motivation of academic to contractual work. However, many respondents have been working for external institutes, as consultants and been persuading students for commercial consultancies were noted through findings.

Table 4
Descriptive statistics of variable

| Variable | Mean Value | Standard Deviation |
|-------------------------|------------|--------------------|
| Joint Research Works | 2.479 | 0.924 |
| Contract Research Works | 2.042 | 0.773 |
| Human Resource Mobility | 2.229 | 0.796 |
| Training | 2.447 | 1.031 |
| Knowledge Exchange | 3.579 | 0.733 |

Human resource mobility between university and industry is the most productive way of transferring non-codified knowledge among organizations. The descriptive statistics indicated that overall mean value as 2.229, and the standard deviation 0.796 indicating slight positive progress of the variables compared to the previous two. Accordingly, human resource mobility between industry and university actively exists at an average level. Though academic staff did not have the executive level of experience in the business world, many students have jobs found in industry, and industry people have started higher studies the recommendation of academics.

Training is recognized as an effective source of transferring knowledge which resides in one's mind that cannot be codified into a physical format. On the job training is not always adequate to upsurge the required skills of employees, training, therefore, is considered an effective mechanism to develop employees' strategic competencies. Six Likert questions were used to measure the level of staff involvement for employee/student training at industry/university in the knowledge exchange process. The overall mean and standard deviation of the variable are 2.447 and 1.031 respectively as per table 04. It indicates that the level of staff involvement in training activities is average. Often academics actively involved in many trainings activates as a means of resource person for workshops and training sessions. Further, through personal connections, academics brought industry experts for undergraduates training. Those factors have swelled the training level into the average position in Sri Lanka. The most popular students training method found here was that field visits and industry tour.

4.3 Correlation test

As exhibits in table 05, joint research, contract research, human resource mobility, and the training display positive correlation coefficients with the knowledge exchange process. Their respective significance values are also lower than 0.05 level. Accordingly, it can be concluded that all independent variables have statistically significant positive associations with the knowledge exchange process in Sri Lanka. Findings aligned with many previous studies (Ankrah & Al-tabbaa, 2017). The most important part of this survey is to measure the impact of individual variables on the knowledge exchange process. Four directional hypotheses that were developed upon previous literature were tested by regression analysis. The regression results were reported below.

Table 5
Correlation results

| Variable | KT | JR | CR | HRM | TR |
|-------------------------------|--------|--------|--------|--------|----|
| Knowledge Exchange (KE) | 1 | | | | |
| Joint Research (JR) | .641** | 1 | | | |
| Contract Research (CR) | .571** | .680** | 1 | | |
| Human Resource Mobility (HRM) | .515** | .550** | .635** | 1 | |
| Training (TR) | .627** | .714** | .698** | .623** | 1 |

**Correlation is significant at the 0.01 level (2-tailed)

As per table 06, the R square value is 0.485, and the ANOVA significance value is 0.000. R square value exhibits that the regression model can predict a 48% variation of the knowledge exchange process through joint research, contract research, human resource mobility, and the training. The value is reasonable and acceptable for studies. R square value above 30% (Sengupta & Ray, 2017; Scandura, 2016), is used for accurate prediction in research studies. The predictive power of the overall model is good as ANOVA tests got significant. Durbin Watson statistic is 1.884 and, it is very close to

threshold value 2. It assures the absence of heteroscedasticity in the data set. Multicollinearity problem among independent variables was checked through collinearity statistics. Variance Inflation Factor recorded its maximum of 2.649. It was less than 10, and respective tolerance values were greater than 0.1. Both measurements assured the non-existence of multi-collinearity among variables.

Table 6
Regression result

| R Square .485 | | Adjusted R Square .473 | | ANOVA Sig. 0.000 | | Durbin Watson 1.884 | |
|-------------------|-----------------------------|------------------------|---------------------------|------------------|------|-------------------------|-------|
| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
| | B | Std. Error | | | | Tolerance | VIF |
| (Constant) | 1.974 | .137 | | 14.445 | .000 | | |
| Joint Research | .264 | .066 | .334 | 3.990 | .000 | .424 | 2.359 |
| Contract Research | .091 | .080 | .098 | 1.136 | .257 | .401 | 2.491 |
| Human Resource | .103 | .068 | .114 | 1.526 | .129 | .531 | 1.884 |
| Mobility Training | .183 | .066 | .248 | 2.794 | .006 | .378 | 2.649 |

a. Dependent Variable: Knowledge Transferring Process

The first hypothesis “Joint research has a significant impact on university-industry knowledge exchange process”, was tested. As per the test statistics, the regression coefficient of the model is 0.264, and it is statistically significant. Accordingly, the study accepted hypothesis one and confirmed the impact of joint research has on knowledge exchange between university and industry in Sri Lanka. Many previous studies have confirmed the collaboration between firms and universities (Howells et al., 2012). The deeper exploration of statistics indicates that more than 50% of respondents have connected industry for at least one joint knowledge-sharing activity. The proportion of academics in an Engineering discipline is significantly higher in the process than in other groups. Academics from Management disciplines obtained the second position in joint activities with industry. The lower joint activities are shown by the Medical discipline. Interestingly, not a surprise, but the reality is that the Technology discipline has very little collaboration with industry at this movement, as strangers to the field of higher education in Sri Lanka. To conduct Engineering, Management, Science, and Agriculture research work more accurately, academic must-have lucrative collaborations with industry. Therefore working with industry is likely to be highly complementary with academic research performances (Balconi & Laboranti, 2006).

Contractual agreements between academics and external institutions formalize and facilitates for movement of codified knowledge between university and industry that exists earlier in hidden, is tested through hypothesis two. The variable is not significant, hence the study does not accept hypothesis two: Contract research has a significant impact on the university-industry knowledge exchange process, confirming that the impact of contractual research work for knowledge exchange in Sri Lankan is not significance. Study findings align with many previous insights too. Though contract research activities have significant in many previous studies as a knowledge transfer (Perkmann et al., 2012; Ankrah & Al-tabbaa, 2017), practically firms interact less with universities (Schartinger et al., 2002). However, it was evident in the study that nearly 70% of respondents had not entered contractual agreements with external institutes as knowledge professionals. This lower inclination for contractual works significantly lowered the contribution it has to knowledge exchange. Consequently, only less than 7% of respondents in Sri Lanka, earn more than 10% of the income of their monthly salary through contractual agreement, and the amount is very below comparing to academics in other nations.

Human resource mobility between university and industry is at present considered as a most productive way of transferring non-codified knowledge among organizations, was tested through hypothesis three: Human resource mobility has a significant impact on the university-industry knowledge exchange process, was statistically insignificant in Sri Lankan context. This lower human resource mobility was caused due to less participation of academic staff for business activities as consultant, observers and business auditors. Findings do not fully support for previous studies. Schartinger et al. (2002), pointed out that mainly in services, personnel mobility, and training courses for firms are the most important types of knowledge interaction channels.

The regression coefficient of training on the knowledge exchange process is 0.183, and its respective significant value is 0.006, therefore, hypothesis four was accepted. Accordingly, it can be concluded that training has a substantial impact on the present knowledge exchange process of the country between the university and industry. The deeper exploration of the variables found that respondents frequently conducts workshops and training programs to industry people as well as to the graduates Further, it noted that many academics have been joining the industry to design and implement long-term training on the requirements of the industry. Moreover, on personal contacts, the majority of academics (about 68%) regularly take undergraduates to the industry for training. This active involvement has swelled the academic contribution of academic staff to the knowledge exchange process significantly. Many previous studies have confirmed the relationship.

5. Conclusion and recommendation

The objective of this paper was to explore the contribution of academic staff to the knowledge exchange process between the university and industry. As a knowledge

agent, an academic should persuade to lower the gap between what an academic should do from what academics do in the knowledge exchange process. In reality, the gap is fixed and, widening continuously, therefore assessing the contribution of academics to the knowledge exchange process was imperative everywhere. In particular, this paper has aimed at analyzing academic contributions to the knowledge exchange across academics' involvement in joint works, contract works, human resource mobility, and training work with industry. To undertake this purpose, the study collected new and fresh data from university academics through a standardized questionnaire. Four directional hypotheses that predicted the significant effect of the joint, contract, human resource movement, and training to knowledge exchange, were tested through regression analysis.

A study distributed a questionnaire among academics through e-mails. Responses represented all state universities, gender groups, and job categories. The majority of the respondents were from Management Faculties and followed by Medicine, Science Faculties. First, our evidence shows that the overall involvement of academic staff in joint work, contract work, human resource mobility, and the training with industry are very low. This was mainly due to the lower connection of academics with industry as a means of improving the product, service, and business processes. Secondly, it found that academics are not willing to transmit their knowledge on the price to third parties, however, they have been actively involving training and development activities with the industry largely as resource persons for workshops and training sessions. Finally, four directional hypotheses that assess the impact of joint, contract, human resource movement, and training to knowledge exchange, were tested through correlation and regression test. All four independent variables correlated significantly with the knowledge exchange, however, at the regression, contract research and human resource mobility were insignificant. Accordingly, in Sri Lanka, only joint research and training work significantly affect to knowledge exchange process between the university and the industry. Hence, the findings of the study highlight the necessity of having a strong policy framework to uplift the academics' involvement in collaborative works with industry. Secondly, the policies should focus to strengthen the knowledge flow between university and industry through active academic involvement. In this process, it would be more worthwhile to pay much concentration to joint research and training works.

6. Limitation and further research area

Given the nature of the study, some limitation has to be taken into account. First, the study considered only the university side of the knowledge exchange process though it has two main parties as university and industry. Resulting in a room is still vacant for future researchers to consider both sides in the future. Though the study touched one side of the bridge, we firmly believe that some of our findings could spark a debate of knowledge exchange and will be informative for future research activities. Secondly, the study took only joint research, contract research, human resource mobility, and training into consideration when measuring academic contribution through a large pool of

knowledge exchange types are available. Therefore someone who wishes to consider more, have a chance to do.

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Indoor environment quality in green buildings: A case of apparel firm in Sri Lanka

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Abstract

Though the use of green buildings is a world trend, it is less popular among Sri Lankan industries due to a lack of awareness. Particularly, the Sri Lankan apparel industry can improve its efficiency through numerous benefits of green buildings such as lower operating cost and higher labor productivity. Therefore, this study attempts to increase awareness about the benefits of green buildings among apparel manufacturers providing evidence for the social benefits based on the indoor environment quality. The indoor environment quality was assessed by five dimensions (dust, noise, illumination, relative humidity, and temperature) selecting green and non-green apparel factory buildings in Sri Lanka. The data covering 24 days were used and analyzed by mean analysis. Though both green and non-green buildings confirm the standard limits of dust, noise, illumination, and relative humidity, the non-green buildings lay out of the standard limits of temperature. Interestingly, the green buildings record relatively favorable indoor environment quality in terms of all factors while generating numerous other benefits. Thus, the adoption of green buildings in the apparel industry is desirable, and the findings help enhance the awareness of its benefits and inclination towards the green buildings.

Keywords: *Apparel industry, green building, indoor environment quality, Sri Lanka.*

1. Introduction

Though the concept of green building has become a fad in the world construction industry yet, it is not popular in some regions such as Sri Lanka (Waidyasekara & Fernando, 2012; Green Building Council of Sri Lanka, 2015), and in some contexts such

as tropical countries. However, there are a few companies that initiated to use and set up green building factories in Sri Lanka especially in the apparel sector. The green buildings positively impact on the sustainability of companies by lowering operating cost, reducing resource consumption and wastes, creating a healthier and comfortable working and living environment for the employees (Wedding & Brown, 2007), strengthening marketability, increasing energy efficiency and employee productivity, creating a non-toxic environment to the occupants (Ali & Nsairat, 2009; Sauve, 2012). Also, it reduces employees' stress, depression (Kroll, 2010), absenteeism and litigation thereby, the costs (Heerwagen, 2000). Building designers identify lower operation costs, lower lifetime cost, higher return on investment, and enhanced marketability as the business reasons to use green buildings (Chan, Qian, & Lam, 2009). Thus, adoption of green buildings helps the Sri Lankan apparel industry to be competitive and enter into the best ten global exporters as per the expectation of the country (Gaille, 2018).

Presenting a set of approaches towards sustainable building architecture, Cam and Ong (2005) propose three roles of building environment domain to ensure a positive impact. Those roles include: (1) set an institutional setting to raise awareness of building environmental issues among stakeholders and economic benefits of the environment friendly architecture; (2) set benchmarks for building an environmental practice to safeguard and evaluate against those benchmarks; (3) set a platform for inspiring new designs, ideas and technical solutions. Lack of awareness about the benefits of green building among individuals, organizations, and environment is the main cause for not adopting it in the Sri Lankan apparel sector (Thilakarathne & Silva, 2012). Chan et al. (2009) also recognize the lack of awareness as an obstacle to the use of green buildings. Thus, taking this fact with the suggestions of Cam and Ong (2005), the study attempts to provide evidence for the benefits of green buildings thereby, enhance the awareness. Ali and Nsairat (2009) suggest that the green building assessment system in a developing country should focus on three dimensions: social, environmental, and economic benefits. The focus of this study is to inquire about the existence of social benefits of green buildings in the apparel sector in Sri Lanka. Therefore, the study selected Indoor Environment Quality (IEQ) considering its direct influence on occupants' productivity, health, and well-being (Kamaruzzaman, Egbu, Zawawi, Ali & Che-Ani, 2011). Also, improved IEQ minimizes the adverse impact on the occupants and environment, and enhance economic benefits. Also, this study strives to clear the contrasting findings in present literature about the level of IEQ of green buildings (i.e. Lee, Wargocki, Chan, Chen, & Tham, 2018 vs. Lee & Kim, 2018). Therefore, this study particularly attempts to substantiate that IEQ is better in green factory buildings than non-green in the apparel sector in Sri Lanka.

The outcome of this study will be useful to convince the benefits of green buildings to the decision-makers. Further, perceived benefits may widen the popularity of green buildings in the apparel sector, and across the industries in Sri Lanka. Also, it will lead to the establishment of a legislative framework and an appropriate evaluation mechanism for the building architecture in Sri Lanka. Also, this study presumes that improved productivity by green building helps the Sri Lankan apparel industry enhance

its presence in the global apparel market. The rest of the paper is organized as follows. The next section discusses relevant literature followed by the methodology employed in this study. The next sections are devoted to data analysis, results & discussion, and conclusion.

2. Literature review

Sri Lankan apparel industry is recognized for providing high-quality ethical fashion apparel for iconic global fashion brands such as Victoria's Secret, Pierre Cardin, GAP, Nike, Land's End, Marks & Spencer, Liz Claiborne. During the last four decades, the industry has marked an epic growth transforming from sewing solution provider (as a contracted manufacturer) depend on textile quota from developed countries to total apparel solution provider. Today, as the leader in Sri Lankan manufacturing sector, the apparel industry contributes 42.2 percent of total principal commodity export in 2017 (Department of Census and Statistics, 2018). Also, the apparel industry is an important employment sector generating over 650,000 employments, and having over 2,078 establishments which employ 25 or more employees (Department of Census and Statistics, 2019). Irrespective of its importance to the country, Sri Lanka presently is not among the best global apparel manufacturers though it aims to become one of the best ten (Gaille, 2018).

In today's competitive business landscape, every business faces the challenge of business sustainability. The apparel industry has been adapting various techniques such as lean manufacturing and total productive maintenance to face this challenge. Adaption of green buildings helps firms to be sustainable (Yoon & Lee, 2003). Being a labor-intensive industry, apparel industry consumes space, energy, water, and generates greenhouse gasses, thus it becomes a cause of environment pollution. Concern on green building is becoming essential since both apparel manufacturers and buyers recognize the importance of being environmentally sensitive by mitigating adverse effects to the environment. Apart from being environment-friendly, green buildings provide various other benefits such as social and economic. However, by nature, social and economic benefits are prominent in developing countries (Gibberd, 2005; Libovich, 2005).

The Office of the Federal Environmental Executives defines the green building as “the practice of (1) increasing the efficiency with which buildings and their sites use energy, water, and materials, and (2) reducing building impacts on human health and the environment, through better siting, design, construction, operation, maintenance, and removal – the complete building life cycle” (Fischer, 2010, p. 6). Accordingly, the green building concept focuses on designing and constructing the buildings that use resources more effective manner (American Chemistry Council, 2015), and on reducing and eliminating the harmful effect and create a healthier and comfortable environment for people (Chatterjee, 2009; Green Building Council SA, 2007). Accordingly, the green buildings differ from non-green buildings by particularly aiming at protecting human health, environment, and resource throughout the building lifecycle.

The adaption of green buildings can be evaluated by the extent of efficient use of resources based on ecological principles that provide healthy facilities for occupants (Kibert, 2007). Further, the green buildings are certified against various assessment tools such as Leadership in Energy and Environmental Design (LEED), Comprehensive Assessment System for Built Environment Efficiency (CASBEE), and Green Building Assessment Tool (GBTool). The LEED assesses the green buildings under six categories: sustainable sites, water efficiency, energy, materials, indoor environmental quality, and innovation and design. CASBEE uses six subcategories under two broad categories: build environment quality and reduction of built environment load. GBTool assesses green performance against seven categories: resource consumption, loadings, indoor environmental quality, quality of service, economics, pre-operations management, and commuting transportation. Also, the green building assessment method proposed for developing countries by Ali and Nsairat (2009) considers IEQ as a category to assess social benefits. Accordingly, every assessment tool presented here considers IEQ as an essential criterion in green building.

LEED uses air quality, lighting quality, acoustic design, and control over one's surroundings to evaluate IEQ, whereas CASBEE uses noise and acoustics, thermal comfort, lighting and illumination, and air quality. GBTool assesses IEQ by air quality and ventilation, thermal comfort, daylighting and illumination, noise and acoustics, and electromagnetic pollution. Also, Ncube and Riffat (2012) develop an IEQ index considering thermal comfort, indoor air quality, acoustic comfort, and lighting. The proposed green building assessment method for developing countries by Ali and Nsairat (2009) uses occupant health and safety, indoor air quality performance, quality of life, increase ventilation efficiencies, thermal comfort, daylight, acoustic and noise control, and visual quality to assess IEQ. Based on those facts, five factors namely, dust (indoor air quality), noise (noise and acoustics), illumination (lighting), humidity (indoor air quality), and temperature (thermal comfort) are chosen to assess the IEQ.

3. Methodology

The study selected a case including green and non-green factory buildings of a leading apparel manufacturer in Sri Lanka located in the same geographical location. The study considered two green and non-green buildings and made a comparison of IEQ factors of both categories. The study selected dust, noise, illumination, relative humidity, and temperature to assess the IEQ. The standard measurements were used to assess the variables. The secondary data from the Environmental Monitoring Report of the firm gathered for 24 days were used for the analysis. The descriptive statistics were used in data analysis.

4. Results and discussion

This study attempted to provide evidence for the benefit of green buildings focusing on the social dimensions of IEQ with the aim of raising awareness about green-buildings

among apparel manufacturers. The IEQ in green and non-green buildings were assessed and compared in terms of five variables namely dust, noise, illumination, relative humidity, and temperature.

The mean value analysis with standard deviation was used to assess the level of IEQ variables and their dispersion in green and non-green factories, and the results are presented in Table 1. The analysis of data shows a low standard deviation indicating relatively stable values for each IEQ factor.

Table 1
Mean analysis

| Type of the factory | IEQ factors | | | | |
|---------------------|---------------------------|-----------------|---------------------|-----------------------|-----------------------|
| | Dust (mg/m ³) | Noise (dBA) | Illumination (lux) | Relative Humidity (%) | Temperature (Celsius) |
| Green | 0.15 (0.03) | 77.09 (2.76) | 1877.83 (351.07) | 63.15 (4.41) | 23.57 (1.44) |
| Non-green | 0.20 (0.03) | 79.11 (1.96) | 1378.65 (367.38) | 58.37 (11.21) | 27.46 (2.21) |

Note: Mean value and standard deviation in the parenthesis are reported

The dust level in non-green buildings is 33 percent higher compared to green buildings whereas, the noise is higher by 2.62 percent in non-green buildings. The illumination level is 36.21 percent higher in green buildings than in non-green buildings, whereas the level of humidity is also higher in green buildings by 8.19 percent. The temperature in non-green buildings is higher by 16.5 percent than green buildings.

The radar chart comparing the mean values of IEQ variables in green and non-green buildings is presented in Figure 1.

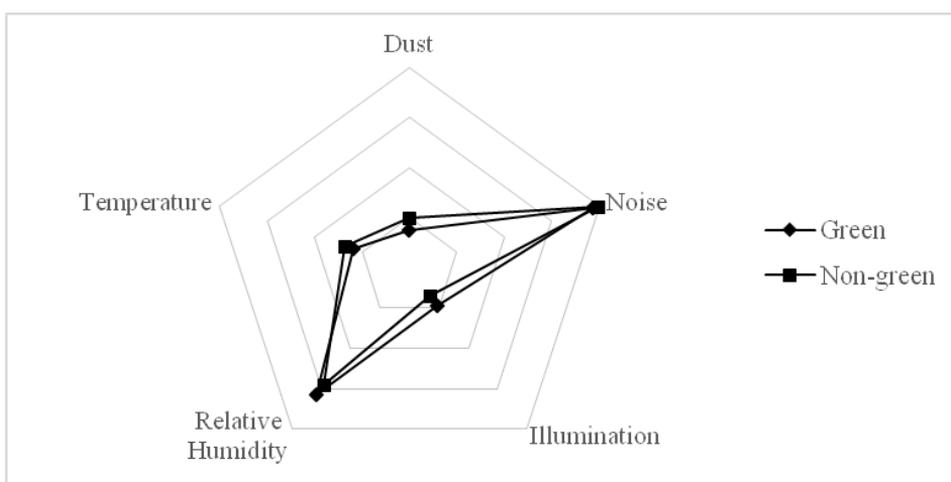


Figure 1 Radar chart

Accordingly, both the level of dust and temperature in green buildings are lower compared to the non-green buildings. The level of Illumination and relative humidity is higher in green buildings. Also, the level of noise is slightly lower in green buildings.

Lower dust level in green buildings makes it attractive to the occupants as absorbing dust adversely affects human health and comfort. Though the green buildings are within the threshold limit of dust level, 0.2 mg/m³, according to the American Conference of Government Industrial Hygienist (ACGIH), the non-green buildings marginally reach the threshold.

The National Institute for Occupational Safety and Health (NIOSH) recommends the 85 dBA exposure limit for occupational noise, and both types of buildings are within the limit. However, the green buildings record a lower noise level than the non-green buildings, and lower noise level is desirable for the occupants.

The different tasks require different levels of illumination. As per the European Lighting Standard EN12464-1, some activities such as cleaning, napping, sewing, netting, and quality control require higher illumination levels as 1000 lux while other activities require lower illumination levels. However, the tasks that involve special visual requirements such as quality inspections need higher illumination levels as 1000-2000 lux. Both types of buildings reach the standard of 1000 lux. Interestingly, the green buildings become attractive recording higher illumination level that positively affects the task performance and productivity, and reduce the number of rejects and the accident (Bommel, Beld, & Ooyen, 2002; Hiba, 1998).

ACGIH recommended relative humidity level for a comfortable working environment is between 40-70 percent. Also, the U.S. Occupational Safety and Health Administration (OSHA) recommends a 20-60 percent humidity level. Maintaining appropriate humidity is especially important in the apparel sector as all textiles are hygroscopic. To facilitate the humidity requirement of different textiles (as an example, silk: a 65-70 percent RH), the environment humidity should be maintained at higher levels as textiles absorb or release moisture based on environment humidity. Also, the weight of the textile is determined at 65 percent humidity level. Thus, the higher relative humidity level is desirable in the apparel industry. Though both types of buildings are within the recommended limits, the green buildings are attractive as they record comparatively higher humidity.

The temperature in labor-intensive settings adversely affects productivity and absenteeism (Somanathan, Somanathan, Sudarshan, & Tewari, 2015). After considering the findings of several studies, Seppänen, Fisk, and Faulkner (2003) find 21-25 Celsius as the optimal range of temperature for the occupants of a building. Also, the OSHA recommends temperature control in between 20-24.4 Celsius. Though the green buildings are within these standards, the non-green buildings have a higher temperature over the upper limit.

Discussing the occupants' satisfaction on IEQ, Abbaszadeh, Zagreus, Leher, and Huizenga (2006) conclude that occupants are highly satisfied with thermal comfort and

air quality of green buildings over non-green buildings. Investigating the IEQ with respect to the level of dust (air contaminant), temperature, humidity, noise and light during winter and summer seasons, Kanika, Rana, and Dahiya (2016) found similar results as of the present study and concluded that all factors are favorable in green buildings. The study on thermal, air quality and acoustic environment of office buildings in two climate zones in China is also in line with the findings of the present study and confirms that green buildings confirm the design standards of buildings (Pei, Lin, Liu, & Zhu, 2015). A similar study was done in green and non-green office buildings in Singapore also concludes that the satisfaction of occupants about temperature, humidity, lighting level, and air quality is higher in green buildings (Lee et al., 2018). Although those studies are done in different environmental contexts, they have come up with similar findings as of the present study. However, arriving at a contrasting finding, Lee and Kim (2018) conclude that the occupants' satisfaction in terms of both lighting and acoustic quality is better in non-green building in the US. Thus, the present study helps clear this disagreement and delivers clear evidence for the benefits of green buildings in terms of IEQ in the apparel sector in Sri Lanka.

5. Conclusion

IEQ of both types of buildings are within the recommended limits in terms of dust, noise, illumination and relative humidity however, only the green buildings confirm the standard requirement of temperature. Moreover, the five indicators show relatively favorable conditions in green buildings creating an appropriate indoor environment for the occupants. Thus, the green buildings in the apparel industry set a favorable indoor environment to the occupants.

The use of green buildings is justified because of not only its favorable indoor environment quality but also various other benefits. Among other benefits of green buildings, lower operating cost, increased labor productivity and health, environmental friendliness are prominent in the apparel industry. The demanding concept of sustainability can also be addressed by green buildings. Thus, the green buildings in the apparel industry help firms remain competitive. Hence, the findings of this study enhance the awareness of apparel manufacturers about the benefits of green buildings, and encourage them to move into green buildings. Though the non-green buildings also marginally reach the standards in terms of the selected IEQ variables, the study encourages the firms to use green buildings as they generate comparatively better IEQ while generating various other benefits, including the demanding requirement of being environment-friendly. In light of the benefits, the regulators can come up with appropriate regulations to promote the green buildings in the apparel sector, thereby ensure the apparel industry's sustainability.

This study focuses on the social dimension of green buildings through IEQ. It opens the new research opportunity to inquire about several other aspects of the social dimension of green buildings, and the environment and economic dimensions referring to the Sri Lankan apparel industry. Also, the studies to investigate the benefits across industries

are encouraged. The generalizability of findings can be improved by a study that focuses on a number of apparel manufacturers. Further, this study can be extended to investigate the behavior of the selected variables in specific functional areas in apparel factory buildings.

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Enhancing living and economic sustainability through community based tourism activities in Mahakanadarawa, Anuradhapura, Sri Lanka

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Abstract

This research explores the potentials and possibilities to promote HCA in the Mahakanadarawa area focusing the factors such as; capacity of the communities, natural and manmade resources, institutions, merits/demerits of the destination sites in the district, administrative and policy environment, and infrastructure facilities etc. Mahakanadarawa area was selected using a purposive sampling method in accordance with a requirement of tourism action plan of North Central Province Council (NCPC). Data were collected using observations and in-depth face-to-face interviews. The results indicated that, the formulation of strategic plans, prudent policy initiatives, and entrepreneurial community awareness programs would be extremely helpful to address the possible challenges and to exploit the warranted potentials of tourism within the area in a sustainable manner. Further, the findings of this research would benefit to increase the rural economy by promoting community-based activities, while providing useful evidence for present and future policy makers to introduce a new model in the context of community based sustainability. Further a gap analysis would be recommended for identifying the impact of all socio-cultural factors to implement HCA successfully and future research should validate the findings of the present study focusing the other tourism projects and destination in the country.

Keywords: *Homestays and Community Activities (HCA), sustainability, tourism.*

1. Introduction

Sri Lanka's tourism development efforts has been considering very much on the promotion of mass tourism development. It is obvious that various types of government encouragement for foreign and local large-scale investment on tourism, huge rebates given to tourists, and the promotion of low quality cheap holiday packages reduce not only earning capacity of the industry but also create high import leakages. This situation is likely to be serious when the community participation in tourism and the well-being of the community under tourism development are taken into account (Wimalaratana & Silva, 2004). For many instances, the community well-being is ignored and their participation with the industry is quite low in Sri Lankan context. Furthermore, the employed locals also face various job-related difficulties such as low wages, temporary employment, lack of job-security, long working hours, and unpaid overtime etc. which eventually cultivate not only the frustration and aggressive intensions among community members on current tourism management practices but also develop high polarization between hosts-guests under such circumstances.

North Central Provincial Council is implementing a three-year project to improve livelihoods of people and economic sustainability in Mahakanadarawa Area in Anuradhapura District of Sri Lanka namely "Developing Livelihoods and Increased Economic Sustainability through Homestay Based Tourism Project". This particular project aims to increase the capacity of marginalized producers and homestay and service providers in order to link with tourism value chain effectively. Further it focuses on improved understanding and strengthened partnerships and communications among the local community, local service providers, and the established tourism industry in order to mainstream sustainable pro-poor tourism in the province and, enhanced access and skills of small tourism service providers/ communities to provide quality service and accommodations as well as unique activities of Mahakanadarawa area. Anuradhapura District is still considered a poorer district of Sri Lanka although it has resources in abundance to thrive in key economic activities including tourism and contribute to the economic growth and development of the region. However, the tourism industry in the district is still in its preliminary stage and the huge resource base has been underutilized. One of the most popular domestic tourist destinations in Sri Lanka, Anuradhapura sacred city, Mihintale and other most Buddhist sacred places are located in this district itself, while some popular tourist districts in the island such as Polonnaruwa, Matale, Mannar, Puttalam and Kandy are located along the border or in close proximity to the district. A large number of tourists travel through the district to reach other popular destinations, but no tangible or physical contribution is made to the district for improvement of the tourism industry. Subsequently, this research examines the potentials as well as proposed strategies to promote tourism in the district with community participation in a sustainable manner (Yaru, Liu and Jing, 2018) such as; providing the general understanding of the new trends in tourism industry to the people including emerging sectors in tourism; ecotourism/ community-based tourism, social impacts of tourism (negative & positive), understanding of different cultures (differences in host & guest's cultures), safety, security & ethics, hygiene and food

safety (special for camping, tree houses and homestay providers), housekeeping (special for camping, tree houses and homestay providers), food & beverage services (special for camping, tree houses and homestay providers, customer care & positive attitudes, guide and guest handling practical training, general knowledge on business operations (management & marketing), general IT knowledge & skills and communication skills (English language skills). Therefore, introduction of such above-mentioned concept would be benefited to draw attention to potentials of the rural economy to promote the community-based sustainable tourism in Mahakanadarawa village of Anuradhapura district, while providing useful evidence for thought for present and future policy makers to introduce tourism industry in a way which will become a new model in the context of integrated tourism confirming sustainability. Having extensively travelled in the area, spoken to its villagers and taken into consideration other factors like their cultural diversities, etc., this concept is presented as the most suited one. It can be termed as 'Sustainable living and economic village tourism', which can provide a co-existence for an agricultural/ fisheries-based tourism industry in Mahakanadarawa village.

The Government of Sri Lanka, in its report of Department of Project Management and Monitoring, 2018, identifies the development of tourism and the possibility to create various employment opportunities, encourage domestic and foreign investments, and promote conservation practices on environmental, archeological, and socio-cultural aspects. The tourism sector reportedly provided more than 319,000 local jobs in 2015 (Central Bank of Sri Lanka, 2017). Although the tourism industry is continuously growing, the weak planning and management, limited diversity of tourist markets, lack of value-adding opportunities in tourist products are contributing to a lack of and limiting per capita visitor/ tourist expenditure. As number of visitors/ tourists is increasing, there are huge pressures to environment in the areas of high tourist traffic, for land use in high tourism potential areas, to recruit appropriately skilled workers, and to maintain the quality standards of tourist services and products. Therefore, these certain areas that eager to develop and expand tourism in Sri Lanka are harming the natural environment and socio-cultural features.

This study intends to explore the possibilities to promote HCA in Mahakanadarawa of Anuradhapura district. In addition, the study focuses on the capacity of the particular village communities, natural and manmade resources, and institutions, merits/demerits of the destination sites in the district, administrative and policy environment, and infrastructure facilities etc. to a successful launch of Community Based Sustainable Tourism (CBST). It will finely formulate strategic plans, prudent policy initiatives, entrepreneurial and community awareness programs that would be extremely helpful to address the possible challenges and to exploit the warranted potentials of tourism within Mahakanadarawa village in a sustainable manner.

2. Literature review

Sustainable tourism concept is a modern global context, which does not deplete environmental, socio-cultural and economic resources bound with tourism activities (Aall, 2014). The ultimate goal is to not only to provide high-quality experiences for visitors but also to strengthen host communities and cultures, and develop tourism-related livelihoods while preserving the surrounding environments (Wijesundara & Gnanapala, 2016). In this context, the policy makers should concentrate the necessity of HCA concept to be formulated and implemented in an appropriate manner, which does not toward the conventional tourism as follows.

- a) In practice, conventional tourism is not a necessarily planned one to enhance conservation or education, does not benefit the local community, and can rapidly damage a fragile environment. As a result, it can destroy, or unrecognizably alter the resources and socio-cultures values on which it depends. In contrast, sustainable tourism is a deliberately planned one from the beginning to give benefits for local residents, respect local culture, conserve natural resources, and educate both tourists and local residents.
- b) In many cases, the lack of management controls and effective planning mechanisms of conventional tourism practices have created a major threat to environment. However, the sustainable tourism intentionally seeks to minimize the negative impacts of tourism activities, while contributing to environmental conservation and maintaining well-being of the community in both economically and socially.
- c) Actually, conventional tourism does not often provide funds for both conservation agendas for protecting areas from practices and development that are harmful to the natural beauty of an area and local communities. Sustainable tourism can produce the same profits as conventional tourism, but more of the profits stay in locally with the local community, and the area's natural resources and culture can be protected. Opportunities and threats related to tourism can be controlled through well-planned and managed sustainable tourism practices.

Considering the facts that of HCA as conceptualized through a modern sustainable tourism in a global scenario, the triple bottom line of sustainable tourism is to be linked to develop HCA in Mahakanadarawa village as a model tourism hub in this connection. Sustainable tourism parallel to HCA concept has three key components, sometimes referred to as the "triple bottom line" as environment, community (social and cultural) and profit (economy). First, Environmental well-being - Sustainable tourism has a low impact on natural resources, particularly in protected areas. It minimizes damage to the environment (i.e. flora, fauna, habitats, water, living environmental resources, energy use etc.) and ideally tries to benefit the environment. Second, Socio-cultural well-being - It does not harm the social structure or culture of the local community where it is located. It respects local socio-cultural values (Kimaija, 2015). It involves multi-stakeholders (individuals, communities, tour operators, food and lodging providers, transport providers, other tourism service providers, government/ local government

organizations/ institutions etc.) in all phases of planning, development, and monitoring, and educates stakeholders about their roles. Third, Economic well-being - It contributes to the economic well-being of the community, generating sustainable and equitable (fair) income for local communities and as many other stakeholders as possible. It benefits owners, employees and neighbors. It does not simply begin and then rapidly die because of poor business practices.

Henceforth, success of HCA conceptualized through incorporating adopting sustainable tourism principles and practices, the conceptual overview is designed to be formulated to keep exist in ground thereby concentrating the following four lay foundations on HCA based on the rationalized sustainable tourism scenarios. Lightening of becoming a sustainable tourism business thorough HCA is necessary to do so. It is important to remember that sustainable tourism management is not anti-growth. Rather, a sustainable approach recognizes the realities of resource limitations and helps people to work creatively within these boundaries for the long-term success of their business and the conservation of the social/cultural and natural environments in which they operate. Important points are; to decide to be sustainable and to establish mission statement then publicize it, promote it, embrace it, act upon it at all levels of their business involving strategies for all three pillars of sustainability as; economic, socio-cultural and environmental sustainability.

United Nations World Tourism Organization (UNWTO) had also developed a clear statement on sustainable tourism: “Sustainable tourism development meets the needs of present tourists and host regions while protecting and enhancing opportunity for the future. It is envisaged as leading to management of all resources in such a way that economic, social, and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity, and life” support systems.

As the link between poverty and environmental degradation became clearer, the United Nations World Summit on Sustainable Development held in Johannesburg in 2002 focused on poverty alleviation as a key priority. Again, the role of tourism in advancing social sustainability made significant headway under discussions of responsible tourism and pro-poor tourism. “Making Tourism More Sustainable: A Guide for Policy Makers” by UNEP-UNWTO was a comprehensive policy document that described 12 aims of sustainable tourism development related to three “pillars” of sustainability: economic, social and environmental;

- a) Economic sustainability, which means generating prosperity at different levels of society and addressing the cost effectiveness of all economic activity. Crucially, it is about the viability of enterprises and activities and their ability to be maintained in the long term.
- b) Social sustainability, which means respecting human rights and equal opportunities for all in society. It requires an equitable distribution of benefits, with a focus on alleviating poverty. There is an emphasis on local communities, maintaining and

strengthening their life support systems, recognizing and respecting different cultures and avoiding any form of exploitation.

- c) Environmental sustainability, which means conserving and managing resources, especially those that are not renewable or are precious in terms of life support. It requires action to minimize pollution of air, land and water and to conserve biological diversity and natural heritage (Tek, Dangi, & Jamal, 2016).

Community Based Tourism (CBT) is a new paradigm in modern tourism & most of the new world, tourists are now demanding community-based experiences from their tour planners. Different scholars have defined CBT in different ways. Simpson (2008) defines CBT as “a model which centers on ownership, management and control of tourism projects by the local community”. The Thailand Community Based Tourism Institute defines CBT more rigorously as, “tourism that takes environmental, social and cultural sustainability into account. It is managed and owned by the community, for the community, with the purpose of enabling visitors to increase their awareness and learn about the community and local ways of life”. Moscardo (2008) viewed CBT as an alternative form of tourism, which aims to maximize benefits to local people and achieve community development objectives through building community capacity and empowerment. Since, CBT is based on the active participation of the local community, it's important to create community events which may encourage CBT while creating a relationship in between local community and visitors. To facilitate this, different public administrations, Non-Governmental Organizations (NGOs), private institutions and the local community itself should get involved and work together. As many other industries, CBT is developed on set of theories and concepts. Responsible Ecological Social Tours Project (REST) identified some principles through host community can use tourism as a tool for community development. According to REST, CBT should:

- a) Recognize, support and promote community ownership of tourism;
- b) Involve community members from the start in every aspect;
- c) Promote community pride;
- d) Improve the quality of life;
- e) Ensure environmental sustainability;
- f) Preserve the unique character and culture of the local area;
- g) Foster cross-cultural learning;
- h) Respect cultural differences and human dignity;
- i) Distribute benefits fairly among community members;
- j) Contribute a fixed percentage of income to community projects (Dissanayake & Samarathunga, 2015).

Therefore, HCA concept throughout a community-based sustainable tourism development is supposed to deliver benefits to the village community while they are encouraged to develop their tourism businesses and related ventures (Acharya & Halpenny, 2013) as well as the incentives can be taken to enable the community to get benefits collectively from the areas on tourism and conserve wildlife and natural resources etc. In addition, rural villagers' skills and capacity for tourism development

while enhancing them in order to improve their income levels and well-being, villagers' ethic, norms and social values are protected (Yasami, et al, 2017). Arts, music, traditional dance, folklore and other sociocultural heritages are promoted for tourism development while preserving and enhancing them (Gnanapala, 2015). Tourism development will work hand-in-hand with conservation of the environment and socio-cultural heritage. Finally, the theoretical framework is suggested to be improved with incorporating core-values of the societal sustainable tourism practices with the use other related conceptual paradigms in order to develop and implement though a well-balanced sustainable community-based tourism strategy with matching globally accepted tourism guidelines.

3. Research methodology

Tourism sector is a major income contributor to the Gross National Product (GNP) as well as and it has shown a significant impact to the economic growth in Sri Lanka (Central Bank of Sri Lanka, 2017). According to the country's tourism development plan, North Central Province is an important region indicating that it has been a most sacred cultural and religious hub in Buddhism with a prolong history with agro-based irrigation system. Therefore, the local and international tourists are coming to the region to see this environment. In this context, there have been major vacuum for implementing a well-sustainable tourism strategy to fulfill the requirement. There are many places in the region to develop, so that the purposive sampling method was used to select the Mahakanadarawa village as a priority in connection with the NCP's tourism development. In this context, it was noted that the area was considered as a great and huge water reservoir in the Anuradhapura District, and no more attraction of this tank and surrounding area is a considerable factor aligning with the facts that; Lot of communities in the rural areas is still living poorly and mainly they are depending on traditional agriculture and fisheries; limited opportunities for additional income generation and insufficient infrastructure facilities. Therefore, the researchers conducted in-depth face-to-face interviews to investigate on the concept HCA based on the literature findings and the data were collected from the particular target groups such as; Fisheries associations, community members of Chena cultivation and agricultural farmers, community groups of traditional dancing, sportsmen's and community of organizing festivals and cultural events and trained young community as cycling activity providers as well as activity guides in Mahakanadarawa area. Simultaneously, the researchers conducted telephone discussions and surveys with the stakeholders on tourism development in NCP such as; Ministry of Tourism, Wildlife and Christine affairs, North Central Province (NCP) Council, Sri Lanka Tourism Development Authority (SLTDA), Department of Tourism and Hospitality Management (DTHM) of Rajarata University of Sri Lanka (RUSL), Mihintale Divisional Secretariat, Forest Department, Wildlife Conservation Department, Agriculture Department, Irrigation Department, Archeology Department, Mihintale Local Government Authority (Mihintale Pradeshiya Saba), Mihintale Police Station, Mihintale Civil Security

Department, Religious leaders and other relevant government organizations in the area. After collecting data, the researchers reviewed and analyzed the data in a descriptive manner.

4. Results and discussion

Mahakanadarawa tank (*wewa*) is a one of biggest water reservoir in the Anuradhapura District. Unfortunately, there is no more attraction of this tank and surrounding area among the tourists so far. Lot of communities is still living and depending on traditional agriculture and fisheries. Opportunities for additional income generation also are limited. In addition, infrastructure facilities are not sufficient. Although, there are various tourism opportunities in Mahakanadarawa area, near to the tank (*wewa*) and those can be pointed out as follows;

- a) Agro tourism opportunities – i.e. Observing of traditional paddy cultivation, chena cultivation and vegetable cultivations, Tasting and preparation of traditional foods and beverages, participate to agricultural activities, selling of farm fresh and processed products, arranging tours in agricultural areas, Observing and participating to community events related to the agriculture, selling of crafts/ souvenirs, camping in farms/ agricultural areas, Arranging accommodation in tree huts etc.
- b) Fisheries related activities – i.e. Fishing, Rowing canoes, Swimming, arranging tours around the tank (*wewa*), Observing and participating to other fisheries related activities (e.g. arranging fishing nets, fishing vessels and equipment), Tasting and preparation of freshwater fish and prawn based foods, Observing and participating to community events related to the fisheries, camping in tank shore, Arranging accommodation in tree huts near the tank shore etc.
- c) Rural tourism activities – i.e. Observing and participating to traditional community events, arranging tours in rural areas/ villages, Tasting and preparation of traditional foods and beverages, arranging homestay services, camping in rural areas, Arranging accommodation in tree huts in rural areas etc.
- d) Eco and wildlife tourism activities – i.e. Arranging eco-camping, arranging accommodation in tree huts in forest areas, arranging jeep safaris, arranging trails, tracking, trekking, hiking in rural and wild areas, Observing and arranging photography opportunities of wildlife (e.g. Elephants, Birds).
- e) Community Based Tourism activities – i.e. Empowering well organized and cohesive rural community as community associations, community organizations, youth clubs and Non-Government Organizations (NGOs) to serve the tourists, Forming strong multi-stakeholder network to give better service to tourists, Developing communities as entrepreneurs in tourism businesses, Empowering some selected people as capable tour guides, Strengthen managerial, sales and marketing

skills of rural people to maintain, expand and sustainability of tourism related business activities etc.

Concentrating the above tourism opportunities, this area was not developed in sustainable tourism concepts due to poor infrastructure facilities, unfavorable weather and climate changes, lack of educated and skillful peoples, animal-human conflicts, non-organized agricultural and fisheries activities, lack of community-based activities, unfavorable political and economic influences and negative attitudes of some peoples. In addition, this area is not popular as a tourist destination. Therefore, Mahakanadarawa area is existed in poor condition. In this case, the relevant information of this concept is collected from archeological, historical, irrigation and environmental sources. Different ministries, universities, resource personals, libraries, books, internet are used to collect those relevant data. After collecting relevant and correct data, the researchers directly visited the whole area and most appropriate sustainable forms for those specific sites are identified. After selecting those places, the situation of infrastructure, environmental, socio-cultural and economic conditions of said places is evaluated through SWOT analysis.

According to the existing background of Mahakanadarawa area, the researchers were encouraged to do this study for achieving the objectives; identify places of Mahakanadarawa area which dominant to specific sustainable tourism concepts, evaluate current situation of infrastructures, environmental, socio-cultural and economic conditions of that area and reduce poverty of that area by effective sustainable tourism concepts. Ultimately, the researchers suppose that a systematically developed Mahakanadarawa village by implementing an effective integrated sustainable tourism project for HCA to reduce the poverty of community and enhance their living conditions. The following expected outcomes would be the phenomenon of this research.

- a) Increase capacity of marginalized producers, homestay and service providers to link to tourism value chain.
- b) Improved understanding and strengthened partnerships and communications among the local community, local service providers and the established tourism industry as stakeholders.
- c) Enhanced access and skills of small tourism service providers/ communities to provide quality services and accommodations as well as unique activities of Mahakanadarawa area.
- d) Build proper income for the villagers and 10% of total income as a Provincial Council income.
- e) Develop twelve (12) homestay units in Mahakanadarawa village and four (04) tree houses for accommodation in Chena cultivation lands border to Mahakanadarawa tank and sanctuary.
- f) Develop Homestay Tourism Association (HTA) in Mahakanadarawa village.

- g) Develop training facilities including theoretical knowledge and practical approaches.
- h) Develop infrastructure facilities and develop marketing tools and materials.
- i) Apply for the SLTDA Registration.

Ultimately, this research identified the strengths, weaknesses, opportunities and threats in this area in order to develop a better tourism mechanism based on HCA according to the traditions of sustainable community-based tourism strategies as follows;

Strengths

- a) Strong backup by the government and local government setup.
- b) Corporation extended by the North Central Province (NCP) Council and Sri Lanka Tourism Development Authority (SLTDA).
- c) Have knowledgeable and experienced workforce in the Government and local government setup.
- d) Have one of the best and largest water reservoir (Tank) called Mahakanadarawa tank.
- e) Have relatively large Fisheries and agricultural economic platform.
- f) Locate near to the famous tourist destination called Mihintale with greatest Buddhist temples, Ancient Buddhist ruins, and world first wildlife sanctuary.

Weaknesses

- a) No proper knowledge and coordination regarding tourism activities among the Forest Department, Wildlife Conservation Department, Archeology Department, Agriculture Department, Irrigation Department, other government officers etc.
- b) No proper awareness/ linkages among the major economic structures (i.e. Fisheries, agriculture, trading, maintenance) and tourism in the area.
- c) Insufficient facilities in the Mahakanadarawa surrounding area and Mihintale area. (i.e. Roads, Electricity, Communication, Sanitary, Water supply).
- d) Less awareness regarding sustainable tourism among the community.
- e) Poor health facilities in the area (Mihintale hospital is a small base hospital and there are no sufficient Medical Specialist channel facilities in the Mahakanadarawa and Mihintale area).

Opportunities

- a) Have more famous tourist destinations closed to the Mahakanadarawa area (i.e. Anuradhapura, Ritigala, Seegiriya, Habarana, etc.).
- b) Have rich biodiversity in the surrounding area that can promote eco, wildlife tourism.
- c) Have numerous agricultural lands, water reservoirs (tanks) in the surrounding area that can promote Agro and fisheries related tourism.

- d) Have rich cultural expressions/ elements of local cultural heritage, like dance, music, drama, crafts, fine arts, dresses, customs, traditions, ceremonies and cuisines that can use as cultural tourism aspects in this area.
- e) Have enough lands for starting/ conducting tourist activities.
- f) Ability to get numerous support (knowledge, skills, technical, training, research etc.) from the Department of Tourism & Hospitality Management, Faculty of Management Studies and Faculty of Social Sciences and Humanities of Rajarata University of Sri Lanka, Mihintale (from both Academic staff and students).

Threats

- a) Unfavorable weather and climate conditions are arising time-to-time year around. (i.e. Droughts, Floods, High winds).
- b) Scarcity of quality potable water.
- c) Human-animal conflicts. (i.e. from wild elephants, poisonous snakes, wild boars, flying insects).
- d) Negative attitudes and behavior of some local community against the tourism.
- e) Spreading of chronic diseases (kidney) among the community.
- f) Security and safety issues for both residents and foreigners.
- g) Unfavorable political and economic influences, which can demotivate community to start and carry on tourism related enterprises, activities.
- h) Seasonality nature of tourism, which can demotivate community to start and carry on tourism related enterprises, activities due to economic uncertainty.

In the light of the outcomes, it reveals that the HCA concept is supposed to be the best alternative to develop Mahakanadarawa area as a main tourism hub aligning the key performance measures.

5. Conclusion

North-Central Provincial Council is implementing a project to improve livelihoods of people and economic sustainability in Mahakanadarawa area in the Anuradhapura District of Sri Lanka. This aim of this project aimed to improve understanding and strengthen partnerships and communications among the local community & service providers, enhanced access and skills of small service providers to provide quality services as homestay, eco-camping etc. in the area that is bound with “Mahakanadarawa” water reservoir. In Sri Lanka, Anuradhapura is a poorer district, although it has resources in abundance to enhance tourism and contribute to the economic growth. Tourism of this district is still in its beginning and the huge resource base has yet been unused. The popular tourist destinations named Anuradhapura sacred city and Mihintale are in this district and popular tourist districts such as Polonnaruwa, Matale, Mannar and Puttalam are located along the border to this. According to the emphasis on the fulfillment of research gap on the previously mentioned thematic tourism scenario, this research selected Mahakanadarawa village on the basis stipulated

in the annual country tourism plan in Sri Lanka. A large number of tourists travel through the district to reach other popular destinations. This research concentrates on the potentials and strategies to promote tourism in the area is with community participation in a sustainable manner (providing the general understanding of the new trends (i.e. eco/ agro/ community-based), socio-cultural impact (negative & positive), safety & security, hygiene, food safety, housekeeping, food & beverage services (for camping, tree houses and homestay providers), customer care, positive attitudes, guide and guest handling techniques, general knowledge on business operations on management & marketing), General IT and communication skills. Research findings were helpful to examine the tourism potentials as well as the propose strategies to promote the industry in Mahakanadarawa area with the community participation in sustainable manner. In addition, this research intends to explore the potentials and possibilities to promote HCA in the selected area by focusing the factors such as; capacity of the communities, natural and manmade resources, institutions, merits/ demerits of the destination sites in the district, administrative and policy environment, and infrastructure facilities etc. to a successful launch of HCA. In addition, the formulation of strategic plans, prudent policy initiatives, and entrepreneurial community awareness programs would be extremely helpful to address the possible challenges and to exploit the warranted potentials of tourism within the area in a sustainable manner. This study would benefit to increase the rural economy by promoting community-based activities, while providing useful evidence for present and future policy makers to introduce a new model in the context in community-based sustainability.

6. Suggestions

Based on the above-described research findings from the literature and the collected data analysis, the researchers are of the view that the following suggestions are presented to overcome weaknesses, grab opportunities and face to threats.

- a) No proper knowledge and coordination regarding tourism activities among the Forest Department, Wildlife Conservation Department, Archeology Department, Agriculture Department, Irrigation Department, other government officers etc.: - The researches noticed this is a huge barrier to implement and maintain sustainable tourism practices in the Mahakanadarawa area. For that, strong and effective awareness programs, training programs, workshops, guest lectures should conduct by the NCP Council, SLTDA, Rajarata University of Sri Lanka, Other government and local government organizations/ institutes to form proper and systematic network among previously mentioned stakeholders.
- b) No proper awareness/ linkages among the major economic structures (i.e. Fisheries, agriculture, trading, maintenance) and tourism in the area.: - The researches noticed this is another major barrier to implement and maintain sustainable tourism types in the Mahakanadarawa area. For that strong and effective awareness programs, training programs, workshops, guest lectures should conduct by the NCP Council, SLTDA, Rajarata University of Sri Lanka, Other government and local government

organizations/ institutes to form proper and systematic linkages among aforesaid economic structures and sustainable tourism practices.

- c) Insufficient facilities in the Mahakanadarawa surrounding area and Mihintale area. (i.e. Roads, Electricity, Communication, Sanitary, Water supply): - The researchers found this is a major problem against the sustainable tourism aspects in the Mahakanadarawa area. For that, government and local government organizations/ institutes should consider this situation deeply and need to take proper and effective actions to increase the facilities in the area as a priority basis.
- d) Less awareness regarding sustainable tourism among the community.: - The researchers observed this as another barrier when implementing and maintaining sustainable tourism businesses in the Mahakanadarawa area. For that strong and effective awareness programs, training programs, workshops, guest lectures should conduct by the NCP Council, SLTDA, Rajarata University of Sri Lanka, Other government and local government organizations/ institutes to give systematic and effective knowledge, skills and attitudes among the community.
- e) Poor health facilities in the area (Mihintale hospital is a small base hospital and there are no sufficient Medical Specialist channel facilities in the Mahakanadarawa and Mihintale area). The researchers found this also as a barrier versus the sustainable tourism in the Mahakanadarawa area. For that, government and local government organizations/ institutes should take proper and effective actions to increase the facilities in the area as a major concern. (i.e. Renovate Mihintale hospital with some modern facilities, Provide Medical Specialist channel facilities in the Mihintale area).
- f) Have more famous tourist destinations closed to the Mahakanadarawa area (i.e. Anuradhapura, Ritigala, Seegiriya, Habarana, etc.): - Can arrange excursions, tour packages to previously mentioned areas.
- g) Have rich biodiversity in the surrounding: - Can promote ecotourism, wildlife tourism, Safaris in this area.
- h) Have numerous agricultural lands, water reservoirs (tanks) in the surrounding area: - Can promote agro and fisheries related tourism in the area.
- i) Have rich cultural expressions/ elements of local cultural heritage, like dance, music, drama, crafts, fine arts, dresses, customs, traditions, ceremonies and cuisines: - Can promote cultural tourism in the area.
- j) Have enough lands for the tourist activities.: - Can design and start tourism related enterprises easily.
- k) Ability to get numerous support (knowledge, skills, technical, training, research etc.) from the Department of Tourism & Hospitality Management, Faculty of Management Studies and Faculty of Social Sciences and Humanities of Rajarata

University of Sri Lanka, Mihintale (from both Academic staff and students).: - Can build up effective network among NCP Council, SLTDA, Local governmental authorities and the University by signing MOUs.

- l) Unfavorable weather and climate conditions are arising time-to-time year around. (i.e. Droughts, Floods, High winds).: - For that government and local governmental bodies can take actions to Renovate and construct tanks, cannels, flood barriers, and Arranging tree plantations, reforestation etc.
- m) Scarcity of quality potable water.: - For that, government and local governmental bodies can take necessary arrangements to renovate and construct tanks, cannels, water purification facilities, and Potable water distribution mechanism.
- n) Human-animal conflicts. (i.e. from wild elephants, poisonous snakes, wild boars, flying insects).: - Can take necessary precautions to minimize human-animal conflicts by Arranging forest zonings, arranging elephant/ wildlife corridors, constructing electric fences, providing sufficient medical facilities against wildlife/ snake attacks, implementing proper mosquito controlling mechanism etc.
- o) Opposed attitude and behavior of some local community against the tourism.: - Can arrange appropriate awareness programs, discussions, seminars, workshops, guest lectures to minimize opposed attitude and behavior of some local community by explaining positive impacts of sustainable tourism.
- p) Spreading of chronic diseases (kidney) among the community.: - Can provide sufficient medical facilities against chronic diseases, and implement proper preventive mechanism to minimize those incidents.
- q) Security and safety issues for both residents and foreigners.: - Can recruit government security forces especially “Civil Security Department” professional by giving some basic tourism knowledge to overcome security and safety issues in the area. (in the both day and night times). Also, can form a tourist police station in the Mihintale area.
- r) Unfavorable political and economic influences that can demotivate community to start and carry on tourism related enterprises, activities.: - For that government and local government organizations/ institutes, Police and other security forces should take proper and effective actions to minimize such influences in the area.
- s) Seasonality nature of tourism that can demotivate community to start and carry on tourism related enterprises, activities due to economic uncertainty.: - In this concern, the community can train to perform both tourism and non-tourism based economic activities like Agriculture, fisheries, trading, maintenance. In the season, community can do both activities and, in the off-season, they can carry on their non-tourism businesses/ works.

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The mediating role of tourist satisfaction on the relationship between service quality and tourist re-visit intention: With reference to the SME hotels in Mirissa tourist destination, Sri Lanka

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Abstract

Tourism industry can be recognized as one of the most prevalent as well as the upcoming industries ever. Globally, there is a huge competition to attract more tourists towards their countries as it directly affects for the improvement of foreign income and also contributes for the Gross Domestic Production. Quality of the services provided by a tourist hotel is playing a vital role in determining the tourist's second visitation to the same hotel. Having repeat tourists will enhance the image of the hotel in a significant level. A higher level of service quality determines the higher level of tourist satisfaction. Especially, as a service organization, tourist hotel should be focused enough on the service quality to make their customers to re-visit them again and again with superior level of satisfaction. To have more from tourism, it is important to provide high quality services for the tourist. Though, there are large number of tourist hotels established in Sri Lanka, maintain the service quality and ensure the satisfaction of tourist is debatable. Thus, this study has been focused to identify the service quality, tourist's satisfaction and their re-visit intention. All these three variables are highly important in determining the success of the tourism industry. The population of this study comprised with tourists who have been stayed in 05 selected SME hotels in Mirissa, Sri Lanka during 01st September 2018 to 30th September 2018. Mirissa is one of the most vibrant tourist destinations in down south of Sri Lanka, for which millions of rupees have been invested to develop tourism sector. Based on the convenience sampling technique, a sample of 100 respondents was selected. A self-administered questionnaire was used to gather the primary data while using some secondary sources as well. Bi-variate and multi-variate analysis were adopted to analyse the data with the help of SPSS. The study reveals that there is a positive relationship between service quality and re-visit intention.

Tangibility significantly affects in determining the tourists re-visit intention and the study emphasizes that there is no mediation from tourist's satisfaction on the association between service quality and the re-visit intention. Finally, the study sheds light on how hoteliers and practitioners can improve the service quality dimensions of their services in order to provide tourists with a quality service and make the tourists repeat guests in their property.

Keywords: *Re-visit intention, service quality, tourists' satisfaction.*

1. Introduction

Tourism industry is considered as one of the most important, most diverse and richest global industries in the twenty-first century and by the end of the next decade it would lay at the top of the table of the world's high income industries (Haghkchah & Teknologi, 2016). Therefore, concerning more about service quality is essential for the enhancement of tourism industry. Hotels provide guests with array of services that affect customer satisfaction not only food and accommodation hotel is often referred as a "Home away from home" (Matthias, 2004). According to Sheela (2007), the author of the book "Economics of Hotel Management", the hotel is the place where the tourist stops being the traveler and become a guest. So, repeatedly it highlights most of the research articles that the service quality of hotels is essential for the tourism industry as a whole. Due to that, when concerning on re-visit intention, it is more important to identify the relationship of service quality and re-visits intention.

Recently, a number of conceptual and empirical studies have examined the differences between first-time and repeat visitors and the effect of previous visitation experience on future destination choice (Pereda, 2002). Having a sound knowledge on re-visit intention of tourists are essential for the managers of tourism-based hotels in order to identify their strengths and weaknesses and to focus on their limited resources for the purpose of enhancing service attributes that affect tourists' re-visit intentions the most (Saini & Matta, 2014). If hoteliers could understand their level of service quality, it will be facilitated to come up with further improvements in order to achieve tourist satisfaction and creating a re-visit intention in their minds of their guests (Kim & Lough, 2007). Understanding the customer satisfaction becomes more and more important these days as it allows the company to know how customer defines the service and products quality; facilitates the development of customer satisfaction questionnaires (Hayes, 1997). On the other hand, it impacts on the purchase repetition and word of mouth recommendations (Berkman and Gilson, 1986).

Most of the researches were trying to identify the relationship between service quality and customer satisfaction for variety of reasons. As well as, existing literature has shown the effects of service quality on re-visit intentions; however, few of them have studied the impact of service quality on re-visit intention. Therefore, studying the relationship of service quality and re-visit intention allows management of tourism-based businesses to identify their strengths and weaknesses while facilitating to pay

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more attention towards their limited resources. Managers in tourism make every effort to improve both quality of their services and level of their customer satisfaction as they believe that this effort will create loyal visitors (Haghkhah & Teknologi, 2016), because loyal visitors will return to the destination and recommend it to others (Tian-Cole & Crompton, 2003). Most of the researchers considered only the large-scale or five-star hotels for the purpose of identifying the relationship of service quality and tourist's satisfaction for re-visit intention in Sri Lankan context. However, literature has not sufficiently focused on SME sector in tourism. Under this, it has been identified the necessity of conducting a study on SME hotels on the same matter. SME hotels are one of the main pillars in regional development in the regions like Mirissa, Sri Lanka.

In this background, the overall objective of this study is to identify the mediating effect of tourist satisfaction on the relationship between service quality and re-visit intention of tourists. In this connection, the following specific objectives will be focused: 1) to examine the relationship between service quality of tourist hotels in Mirissa and tourist re-visit intention, 2) to investigate the relationship between service quality of tourist hotels and tourist's satisfaction, and 3) to examine the relationship between tourist's satisfaction and tourist's re-visit intention.

2. Literature review

2.1 Service quality and customer satisfaction

Within past few periods there were greater emphasis has been paid on service quality and customer satisfaction in business and academic world (Osman & Sentosa, 2013). Akbar and Parvez (2009) mentioned in their study on 304 customers of a major private telecommunication company operating in Bangladesh that service quality has strong influence and significantly and positively related to customer satisfaction. Service quality is a strong antecedent and significantly related to customer satisfaction (Hossain and Leo, 2008). Munusamy, Chelliah and Mun (2010) found that four elements of service quality, including assurance, tangibility, empathy and responsiveness have positive relationship with customer satisfaction. According to Erto and Vanacore (2002) the customer is actively participating in service process, and furthermore, a consumer of a service as well as an evaluator of service received. Also, Chen and Lee (2008) proved non-vessel owners and shippers in Taiwan that service quality has a positive influence with customer satisfaction.

Minazzi (2008) described that customer satisfaction is the result of comparison between customers' "expectations" and customers' "perceptions". In other words, customer satisfaction is seen as difference between expected quality of service and customers experience or perceptions after receiving the service (Makeeva, 2010). In the study done by Makeeva, (2010), clearly indicated that the most important goal of hotel industry is to analyzed future customers' requirements and attitudes and after identifying them it is needed to translate them into hotel service elements. According to Hoffman (2002) customer satisfaction depends on dimensions such as reliability, responsiveness,

assurance, empathy and tangibility and on additional elements like price, personal and situational factors that may occur during the service supply. It is now widely acknowledged that service quality is an antecedent of customer satisfaction (Anderson, Fornell, & Lehmann, 1994; Zeithaml et al., 2006). Also, loyal customers or the people who enjoy positive experiences with the service are more likely to become a stable base of satisfied customers (Kim & Lough, 2007; Tsitskariet, Tsiotras & Tsiotras, 2006) because they tend to have better social interactions with service providers. Moreover, it has been specified the primary objective within tourism providers for investing effort in evaluating and improving quality of performance and seeking to enhance level of tourist satisfaction (Canny, 2013).

2.2 Service quality and re-visit intention

Since businesses realized the importance of service quality and customer satisfaction, most of the businesses focused on improving themselves in terms of quality and satisfaction (Han & Hyung, 2015). Some of the studies (Bowen and Chen, 2001; Han and Ryu, 2006) indicate that quality and satisfaction factors affect customers' opinions and intentions positively. Even though, re-visit intention mostly relies on customers' perceptions created by the services provided by businesses, it is known that other factors also affect re-visit intention (Beerli & Martin, 2004).

Literature review shows that a number of concepts are assessed in order to explain re-visit and recommend intentions in several studies. Most of these studies mainly focused on what businesses should do and facts related to re-visit intention and intention to recommend concepts with service quality and satisfaction (Timur, 2018). A very few studies examined destination image, service quality and re-visit intention (Canoglu, 2008; Cabuk et al., 2013) and they have covered hotels falling between two-star and five-star. While many holiday destinations rely heavily on repeat visitations, limited research (e.g. Anwar and Sohail, 2004; Fallon and Schofield, 2004; Hughes and Morrison-Saunders, 2002; Shanka and Taylor, 2004) has been conducted on re-visit intentions and its antecedents for several reasons. The findings of this study provide an important insight to understand whether there is a relationship between service quality and re-visit intention.

2.3 Tourist satisfaction and re-visit intention

Salazar, Costa and Rite (2004) found that satisfaction strongly influenced intention to return to the same destination, and a study by Kozak and Rimmington (2000) also mentioned that overall satisfaction among tourists will lead to tourist intentions to visit the same destination in the future. While there is no guarantee that a satisfied customer will be a repeat customer, it is most likely that a dissatisfied customer will not return (Soriano, 2002). Geng-Qing and Hailin (2008) further found that tourist satisfaction impacted their intention for revisiting. The enrichment of service production and delivery can create customer satisfaction which in turn leads to customer re-visit intention (Al-Alak, 2010). In the tourism literature it has generally accepted that when

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the tourists feeling satisfied on services, products, and other resources, which provided by tourism destinations it could lead repeat, visits same as positive word of mouth effects to such as relatives and/or colleague (Canny, 2013). So, many researchers and practitioners recognized that the relationship of tourist satisfaction on future behavioral intentions as an important research topic as customer satisfaction and dissatisfaction considered become the driving force that shapes the customers' attitudes and future behavior (Canny, 2013).

Studies have also shown that when customers perceive poor service quality and when dissatisfaction is felt, the customers are likely to complain about the service and engage in negative word-of-mouth (Ramseook-Munhurrin, 2012). Therefore, customer satisfaction is often used to predict the likelihood of customers returning to a service organization (Ramseook-Munhurrin, 2012).

In Sri Lanka, there is a lack of information on the tourist satisfaction towards re-visit intention in literature. As well as, it has not been specifically discussed about the SME hotel sector. Therefore, this study will provide knowledge on study variables in Sri Lankan context.

3. Methodology

3.1 Conceptual Framework

The Conceptual framework (Figure 1) of the study is formulated based on well established literature to examine the mediating effect of tourist satisfaction on the relationship between service quality and re-visit intention of tourists.

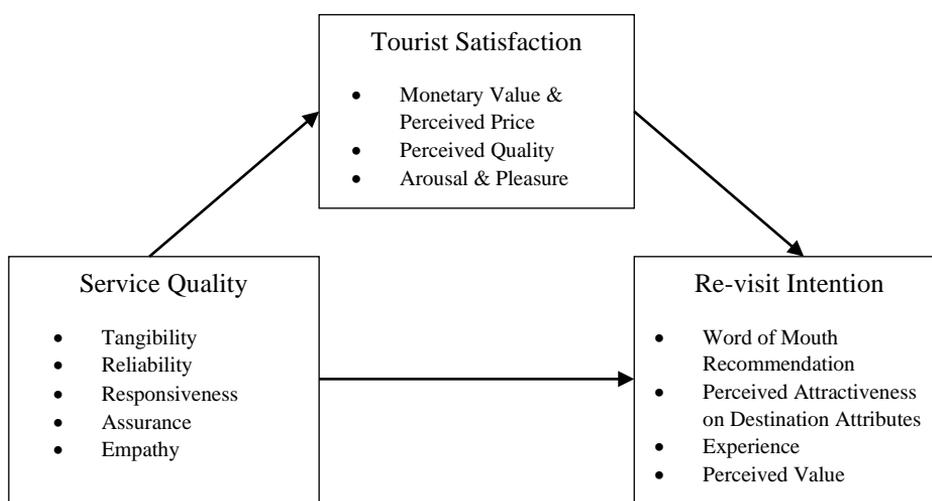


Figure 1 Conceptual framework

3.2 Population and sample

The study was carried out at Mirissa tourism zone in Southern coastal region, Sri Lanka. Tourism in Mirissa region is considered as an appropriate tool for economic development, since the Mirissa tourism region provides attractive sandy beaches, natural beauty, Whale watching, Dolphin watching, diving, sea bathing, sun bathing, stilt fishing etc. Recently, Mirissa has been identified as one of the most vibrant tourist destinations in the down south of Sri Lanka. Large number of tourists who visit Sri Lanka do not forget to include Mirissa in their tourism plan. Also, there are millions of investments done by small and medium scale investors in the tourism sector. These increasing investments should be based on the quality service to retain repeat customers for long period of time. Thus, the Mirissa has been selected for the purpose of this study to check whether the tourists are satisfied with the services provided by all these SME sector hoteliers. Population of this study was both domestic and inbound tourists who visit five selected hotels in Mirissa during the 01st September 2018 to 30th September 2018. There are number of local and foreign tourists visiting this area during all over the periods of the year. 100 domestic and inbound tourists were selected using convenience sampling technique.

3.3 Validity and reliability

An on-site questionnaire survey was conducted to gather primary data for the study. The questionnaire was consisted with four main parts: demographic details of tourist, service quality measurements, tourist's satisfaction measurements and tourist's re-visit intention measurements using five-point likert scaled questions where 1 was strongly disagree to 5 was strongly agree. The SERVQUAL model (tangibility, reliability, responsiveness, assurance, and empathy) was used for measuring the service quality (Parasuaraman et al., 1985; Parasuman & Zeithmal, 1988; Shaikh et al., 2011; Min et al., 1996; Chen, 2008). Tourists satisfaction was measured using three dimensions; monetary value & perceived price, perceived quality, and arousal & pleasure (Heung & Cheng, 2000; Yu & Goulden, 2006; Seng et al., 2011; Hasegawa, 2010; Hui, Van, Ho, 2007; Yam, 2013). Re-visit intention of tourists was measured using four dimensions; word of mouth recommendation, perceived attractiveness on destination attributes, experience, and perceived value (Beerli & Martin, 2004; Cole & Chancellor, 2009; Savinovic & Kim, 2012; Saini & Matta, 2014; Rho & Oh, 2008).

The validity and reliability test were conducted to ensure the error free and valid instruments for the study. A factor analysis was used to validate the study variables. Before the analysis, Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity were tested. The KMO should be greater than 0.5 and Bartlett's Test of Sphericity should be significant. Table 02 given below shows that the KMO is 0.606 and Bartlett's Test of Sphericity, which is significant at $p < 0.000$. Hence, the data used for the study were adequate for further analysis.

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Table 1
Validity of the study variables

| | | |
|--|--------------------|---------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .606 |
| | Approx. Chi-Square | 179.532 |
| Bartlett's Test of Sphericity | df | 3 |
| | Sig. | .000 |

In order to confirm the internal consistency of the variables used for the study, Cronbach's alpha test was conducted. Accordingly, the Cronbach's alpha values exceed the 0.70 level, showing that high consistency level among the dimensions and the constructs.

Table 2
Validity of the study variables

| Construct | Cronbach's Alpha |
|-----------------------|------------------|
| Service quality | 0.897 |
| Tourists Satisfaction | 0.797 |
| Re-visit Intention | 0.853 |

4 Results

4.1 Relationship among study variables

Table 03 given below shows the relationship among main study variables. Survey data emphasis that there is a strong positive relationship between service quality of tourist hotels and tourist's re-visit intention. Tourist's satisfaction is having a strong positive relationship with service quality and re-visits intention.

Table 3
Correlations among study variables

| Variables | Re-visit intention | Tourist satisfaction |
|-----------------------|--------------------|----------------------|
| Service quality | .697** | .877** |
| Tourists satisfaction | .868** | - |

** $p < .01$, * $p < .05$

4.2 Relationship between service quality dimensions of tourist's hotels and tourists re-visit intention

Table 04 shows the relationship between the dimension of service quality of tourist's hotels and tourist re-visits intention. According to the study results, there is a strong positive relationship between service quality and re-visit intention and tangibility, reliability, assurance and empathy are strongly correlated with the tourist re-visit intention while responsiveness is moderately correlated.

Table 4

Relationship between service quality dimensions of tourist's hotels and tourist's re-visit intention

| Dimension | Tangibility | Reliability | Responsiveness | Assurance | Empathy |
|--------------------|-------------|-------------|----------------|-----------|---------|
| Re-visit Intention | .675** | .697** | .554** | .762** | .641** |

** $p < .01$, * $p < .05$

4.3 Impact of service quality to determine the tourist's re-visit intention

The R^2 value in the model summary table explains extent to which the dependent variable can be predicted by the independent variable. As per the table 05, the tourists re-visit intention is explained by tangibility, reliability, assurance, responsiveness and empathy in 50.1% where ($P < 0.05$).

Table 5

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics Sig. F Change |
|-------|-------------------|----------|-------------------|----------------------------|------------------------------------|
| 1 | .633 ^a | .501 | .569 | .447 | .000 |

Predictors: (Constant), Tangibility, Reliability, Responsiveness, Assurance, Empathy

Table 06 indicates the strength of individual components in the service quality construct with the re-visit intention of tourists. As per the results shows in the table 06, highest number in the beta is 0.305 for tangibility which is significant at the $p = 0.005$. Assurance can be ranked as the second with beta 0.296 at the significant at the $P = 0.039$ followed by responsiveness with beta 0.159 at the significant $p = 0.035$ and reliability with beta 0.120 and significant at the $p = 0.043$. Empathy becomes the lowest with the beta of 0.069 where significant at the $P = 0.011$.

Table 6

Coefficients

| Model | Unstandardized Coefficients | | Standard: Coefficient | t | Sig. |
|-----------------|-----------------------------|------------|-----------------------|-------|------|
| | B | Std. Error | B | | |
| (Constant) | 1.022 | .418 | | 2.447 | .016 |
| Service quality | .700 | .095 | .597 | 7.361 | .000 |
| Tangibility | .305 | .107 | .321 | 2.860 | .005 |
| Reliability | .120 | .167 | .103 | .721 | .043 |
| Responsiveness | .159 | .140 | -.062 | -.420 | .035 |
| Assurance | .296 | .142 | .284 | 2.089 | .039 |
| Empathy | .069 | .105 | .077 | .659 | .011 |

Dependent Variable: Re-visit Intention

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4.4 Mediation

With regard to the mediating effect of customer satisfaction on the relationship between service quality of tourist's hotels and the tourists re-visit intention, Baron and Kenney's (1986) criteria for mediation was used.

As the first step, it was measured through the regression analysis and report an $R^2 = 0.796$, $p < 0.000$. The first requirement, assessed the significant relationship between the independent variable (Service quality) and the dependent variable (Re-visit intention) ($r = 0.697$, $P < 0.000$). Second requirement assessed the relationship between service quality and the tourist's satisfaction ($r = 0.877$, $P < 0.000$) and indicated a significant relationship. Third criterion for the mediation, correlation between tourist satisfaction and the re-visit intention was assessed ($r = 0.868$, $P < 0.000$). The final criteria were regressing independent variable and mediating variable against dependent variable. Accordingly, service quality and tourist's satisfaction regressed together and considered against with the re-visit intention ($B = 0.672$, $P < 0.000$).

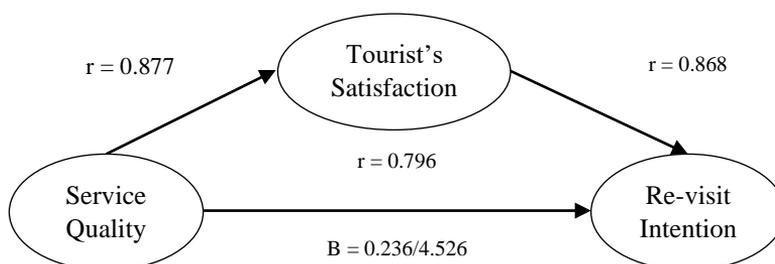


Figure 02 Mediation of tourist's satisfaction on the relationship between service quality and tourist's re-visit intention

5 Discussion

The findings of this study are consistent with that of the previous studies that established a significant and positive relationship among study variables. The study found out that there is a positive relationship ($r = 0.697$) between service quality of tourist's hotels and tourist's re-visit intention (Kole & Illum, 2006). Tourist's re-visit intention mostly relies on customers' perceptions created by the services provided by businesses. Service quality has been positively correlated ($r = 0.877$) with the tourist's satisfaction (Latiff & Ng, 2015; Baker and Crompton, 2000). The study has been proved that tourist's satisfaction and tourist's re-visit intention are positively associated ($r = 0.868$) (Chi & Que, 2008; Kim, 2012). Considering the service quality of tourist's hotels based on the SERVQUAL model (also used by Al-ababneh, 2013 in tourism studies), it has been confirmed that there is a positive relationship between each sub-dimension of SERVQUAL model with the re-visit intention of tourists (Fick and Ritchie, 1991; Yuan et al., 2005; Shaikh and Khan, 2011). Accordingly, assurance recorded the highest positive relationship while responsiveness is having a moderate relationship with the re-

visit intention. Further, the study suggested a significant impact of service quality on tourist's re-visit intention (Lee & Lee, 2015). Tangibility has recorded a significant impact on the tourist's re-visit intention. Assurance, responsiveness, reliability and empathy are also recorded a positive impact on tourist re-visit intention. Regarding the mediating effect of tourist's satisfaction on the relationship between service quality and tourist's re-visit intention, this indicated a partial mediation between tourist's satisfactions, service quality and tourist's re-visit intention.

6 Conclusion

The study concluded that there is a strong positive relationship between service quality of tourist's hotels and tourists re-visit intention. Also, it has been revealed that customer satisfaction and service quality are also positively related and customer satisfaction is positively associated with the re-visit intention. The study suggested that there is no mediating effect among study variables found, since there are having a positive association.

7 Implications

There are very few of studies have been done in Sri Lanka pertain to the SME hotel sector. As the theoretical contribution, the study will support to fulfill the literature gap in service quality, tourist satisfaction and re-visit intention of tourists in Sri Lanka. The findings of this study will create a very good platform to discuss more on the level of service quality and re-visitation of tourists in small and medium scale tourism enterprises extensively.

Service quality is a direct antecedent to the re-visit intention in the tourist hotels. This study will be guided hoteliers in strategic development process to identify the places where they need to pay more attention with regard to superior customer service. Tourist hotel owners, especially SME hotel owners should be focused on the improvements of the levels in service quality dimension in their hotels. They need to understand the key areas where they can enhance the quality of service while providing a superior service for tourists. As per the study, hoteliers need to be more focused on tangible which is having more impact on determining the service quality and the tourist satisfaction, thereafter. Thus, they must concern more on tangibles such as; swimming pools, accommodation and facilities, transport, vicinity, reception, building structure, fragrance, furniture, cutleries and utensils, websites, displays, interior and exterior decorations etc. Employee curtsey, politeness, friendliness and warm welcome are also important factors to determine the higher level of service quality. Tourists make their travel repeat to the same location in their next visit, if only, all these factors are playing in a positive way. As managerial implications, managers in SME hotels should be developed effective managerial strategies and provide relevant trainings for employees to enhance the service quality of hotels. As well as, the study result emphasis that there is a continuous need for resource allocation and time investments in upgrading the

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service quality in tourist's hotels to seek higher level of tourist's satisfaction and re-visitation. This will support industry practitioners, especially the government and other policy making bodies to identify the areas where should be developed and facilitated in order to improve the level of existing demand for the tourism industry in Sri Lanka.

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