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Employee Green Behavior: A Case in Manufacturing & Service Sector in Sri Lanka

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Abstract
Rapid industrialization and globalization are major causes for environment abuses in modern world. In present, most of the companies are focused about environment friendly concepts/ green behavior and sustainability to overcome from environment pollution. This study aims to identify employee green behavior in manufacturing sector and service sector of Sri Lanka. Researchers have used descriptive study to achieve the research objective. Research data were collected by one hundred seventy (170) respondents from manufacturing sector organizations and service sector organizations by using convenience sampling. Self-administered questionnaire was distributed among the respondents which was developed by using organizational citizenship behavior for the environment scale by Boiral and Paille (2012). The findings of this study proved that respondents from manufacturing sector are greener than respondents from service sector.
Key Words: Employee Green Behaviour (EGB), Manufacturing Sector, Service Sector

Introduction
Organizations in today's globalized and competitive environment are more apprehensive on the natural environment than the organizations in the past, because of stakeholder's growing concern about the consequences of environmental contamination in the long run. Organizations are more concerned about reduction in environmental foot print of their operations and it behooves organizational members to participate in sustainability initiatives (Wiernik, Dilchert and Ones, 2016). Therefore, organizational practitioners are encouraging environment friendly behavior in the workplace (Norton et al., 2014). The growing concern of environmental sustainability has created many job opportunities as well as increased the

responsibilities of existing jobs (Wiernik, Dilchert and Ones, 2016). As a result all levels of employees must demonstrate the green behavior in their organizations and thrive for success. According to Boiral & Paillé (2015) initiatives made by employees have a significant impact on greening the organizations apart from the initiatives taken by the formal management systems, procedures or technologies. As a result of intensifying concern about green activities; a growing body of literature has been concerned with the motivation for adopting environmentally related standards and their impact on firms' performances, role of green psychological climate, organizational sustainability and employee green behavior (Lanfranchi & Pekovic, 2014; Norton, Zacher & Ashkanasy, 2014; Norton, Parker, Zacher & Ashkanasy, 2015).

Rayner and Morgan (2017) conducted a study on green workplace behaviors which covered five organizations in Australia from coal generating power industry, tertiary education and water supply utilities. Same authors recommended to future researchers to conduct more studies on employee green behavior to evaluate employee environment concerns across various countries, various industries and various sectors. Present study aimed to cover selected companies in manufacturing and service sectors.

Further, present research study aims to investigate the employee green behavior in terms of age, gender, marital status, level of education, service period and industry sector. Honnold (1984) conducted a study on age and environmental concern thirty three years before and it is outdated.

In Sri Lankan Context, there are few studies conducted with related to employee green behavior and Green Human Resource Management. For example, Thevanes and Arulrajah (2016) conducted a study on the relationship among environmental training, environmental attitudes of employee, environmental behavior of employees and environmental orientation of organization. Opatha and Arulrajah (2014) conducted a study on green human resource management. Opatha et al., (2016) published a study on green human resource management practices. Therefore, this research study supports to fill the research gap in green human resource management / employee green behavior in Sri Lankan management literature.

Theories such as attitudinal, normative, exchange, and motivational theories have been associated with EGB and also adopted a broad range of literature to explain EGB (McConnaughy, 2014; Norton et al., 2015). Further, it is important to understand the reasons for employees' green initiatives towards the organization. Because Boiral & Paillé (2015) argue that many voluntary green behaviors initiated by employees haven't taken into the consideration by the formal management system, whereas most of environmental management studies have failed to distinguish between employees' voluntary involvement and involvement based on compliance with organizations policies. Therefore, the main objective of this study was to identify the factors affecting employee green behavior (EGB) in manufacturing and service sector organizations in Sri Lanka by taking organizational citizenship behavior for the environment (OCBE) into consideration.

Literature Review
Employee Green Behavior
Ones and Dilchert (2012) define employee green behavior (EGB) as "scalable actions and behaviors that employees engage in that are linked with and contribute to or detract from environmental sustainability". According to Steg and Vlek (2009) EGB means individual activity that minimizes harm to, or benefits the natural environment. EGB includes activities such as saving energy, using resources efficiently, avoiding waste, recycling, and conserving water (Norton et al., 2015; Ones & Dilchert, 2012). Employee green behaviors can be part of any dimension of job performance and can be either required or discretionary, depending on the nature of the job (Campbell and Wiernik, 2015). EGB in the workplace is normally more observable and more constrained by organizational requirements and social norms. Therefore it is suggested that behaviors observed in organizational settings could differ remarkably compared to when they are investigated in non work settings (Wiernik, Dilchert and Ones, 2016). EGB has been conceptualized into two parts as voluntary behavior and required employee behavior (Norton et al., 2015).

According to Norton et al. (2015) required EGB is delineated as green behavior performed within the context of employees' required job duties. Required EGB is also known as task related EGB which includes obliging to organizational policies, changing methods of work and creating sustainable products and processes (Norton et al., 2015). The concept of required EGB is similar to task performance (Norton et al., 2015) which is defined as the activities formally identified as a part of the job of a person that contributes to the technical core of an organization (Borman & Motowidlo, 1997). Voluntary EGB has been defined as "green behavior involving personal initiative that exceeds organizational expectations" (Norton et al., 2015). Activities such as prioritizing environmental interests, initiating environmental programs and policies, lobbying and activism, and encouraging others can be identified as voluntary EGB practices adapted in the work setting. Similar to the concept of required EGB and task performance, the concept of voluntary EGB make parallel association with contextual performance and organizational citizenship behavior (OCB). OCB is defined as "the discretionary behavior of organizational members that is not an enforceable requirement of the job description and performed willingly by the employees, which ultimately contribute positively to overall organizational effectiveness" by Organ (Botone, 2010; Podsakoff et al., 2000; Thiyagarajan & Kubendran, 2012). Therefore it is evident that OCB has supported to emergence of EGB literature (Boiral & Paillé, 2012; Norton et al., 2015).

In order to identify employee green behavior Ones and Dilchert (2012) had developed Green Five Taxonomy which includes Working Sustainably, Avoiding Harm, Conserving, Influencing Others, and Taking Initiative. This was a result of critical incident methodology (McConnaughy, 2014). Working sustainably represents behaviors that help work processes and products to be more sustainable and it includes four categories such as Choosing Responsible Alternatives, Changing How Work is Done, Creating Sustainable Products and Processes, and Embracing Innovation for Sustainability (Ones and Dilchert, 2012). Avoiding harm includes three categories and it is bipolar. Preventing Pollution, Monitoring environmental impact, Strengthening ecosystems are the three categories of avoiding harm. Conserving includes four

categories of Reducing Use, Reusing, Repurposing, and Recycling and it reflects the behaviors related to helping preserve resources and reduce waste (Ones and Dilchert, 2012). As cited by McConnaughy (2014) influencing others describes how individuals can influence each other to engage in environmental behaviors. According to Ones and Dilchert (2012) it is the only category that is unambiguously social and influence can extend to other stakeholders in the organization. Encouraging and supporting others are the two subcategories of influencing others. The final category is taking initiative which is considered as how individuals encourage and promote environmental friendly behavior by putting environmental interests first, initiating programs and policies, and lobbying activism (Ones and Dilchert, 2012). The "green Five Taxonomy" created by Ones and Dilchert (2012) has been considered as the nomenclature of EGB because it signifies the breadth of possible EGBs (McConnaughy, 2014; Norton et al., 2015; Wiernik, Dilchert and Ones, 2016).

Research Methodology
The main objective of this study was to identify the factors affecting employee green behavior (EGB) manufacturing and service sector organizations in Sri Lanka. This research study aims to investigate the employee green behavior in terms of age, gender, marital status, level of education, service period and industry sector. To achieve this objective, the present study adopted the quantitative methodology where it follows the deductive approach, as the quantitative data were collected to test the employee green behavior which was developed with the support from the theory and previous literature (Robson, 2002) as cited in Saunders et al. (2011).

There are several reasons behind the selection of deductive research approach among other research approach (inductive). According to Saunders et al. (2012) those can be mentioned as deductive approach has the collection of quantitative data, this study has the operationalized concepts to ensure clarity of definition, it follows highly structured approach and researchers have the independence of what is being researched. The research strategy used in the study is survey as it totally fit with the deductive research approach. Research data were collected from the employees who are working in manufacturing and service sector organizations which makes the unit of analysis is individual. The study was conducted in natural environment where work normally proceeds and study is cross sectional as it was conduct at one particular point of time and data is gathered just once (Sekaran & Bougie, 2010). The data were collected using a self-administered questionnaire developed from the standard measure which validated by the previous researchers and the measure used was the organizational citizenship behavior for the environment developed by Boiral and Paille (2012). Two hundred questionnaires were distributed and one hundred seventy filled questionnaires were returned, thus the response rate is 85% response rate. Sample adequacy was measured through Kaiser-Meyer-Olkin (KMO) and researchers used pie charts and tables to illustrate descriptive statistics to achieve research objectives.

Data Analysis and Presentation
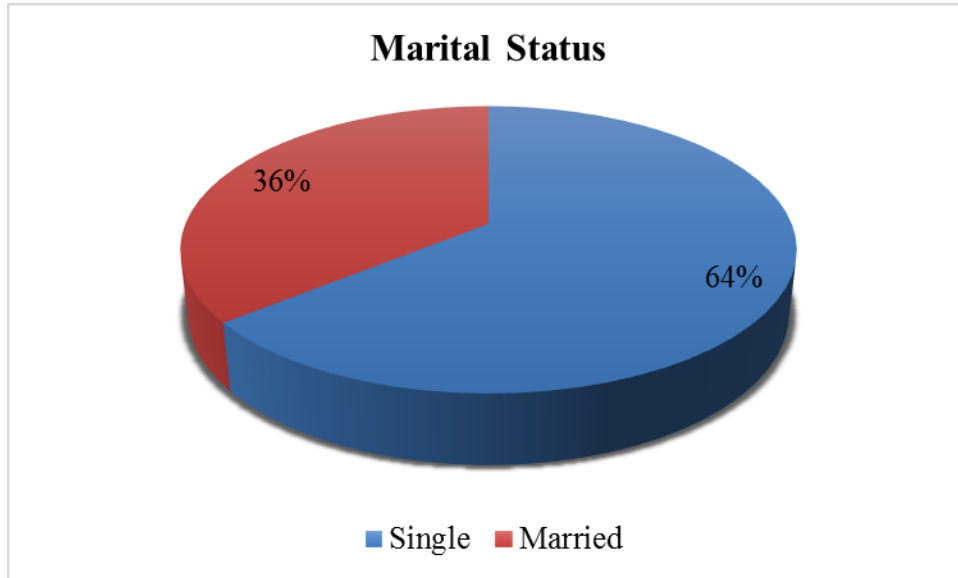**Analysis of Personal Details**

Figure 01: Distribution of the Marital Status of the Respondents
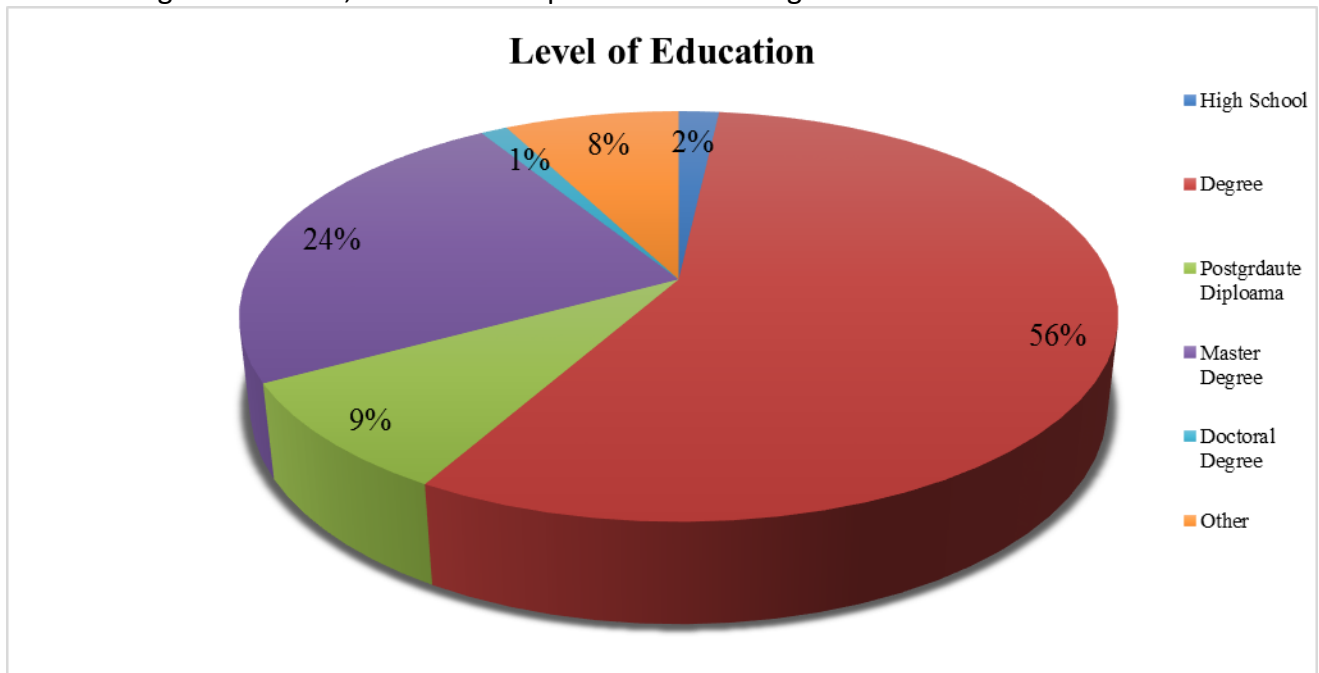As figure 01 shows, 64% of the respondents were single while 36% were married.

Figure 02: Distribution of the Educational Qualifications of the Respondents
        As per to the figure above, majority (56%) of the respondents are qualified with a
degree, where 2% is qualified with a Phd. 24% of the respondents have obtained a master
degree while 9% of the respondents obtained a postgraduate diploma. Thus, it shows majority

1099

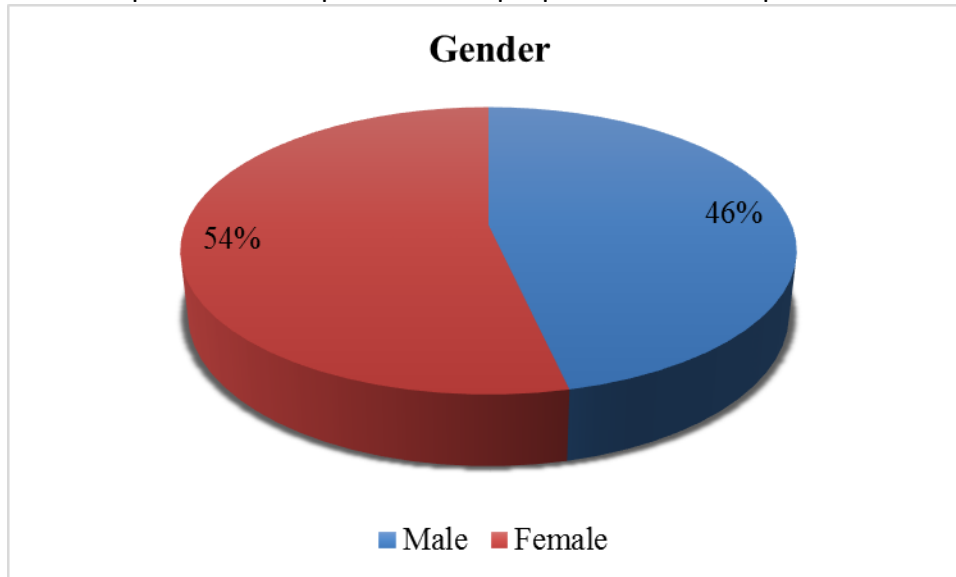of the respondents are qualified with proper educational qualifications.

Figure 03: Gender Distribution of the Respondents

As the above figure depicts, 46% of the respondents are male, where 54% of the respondents are female.
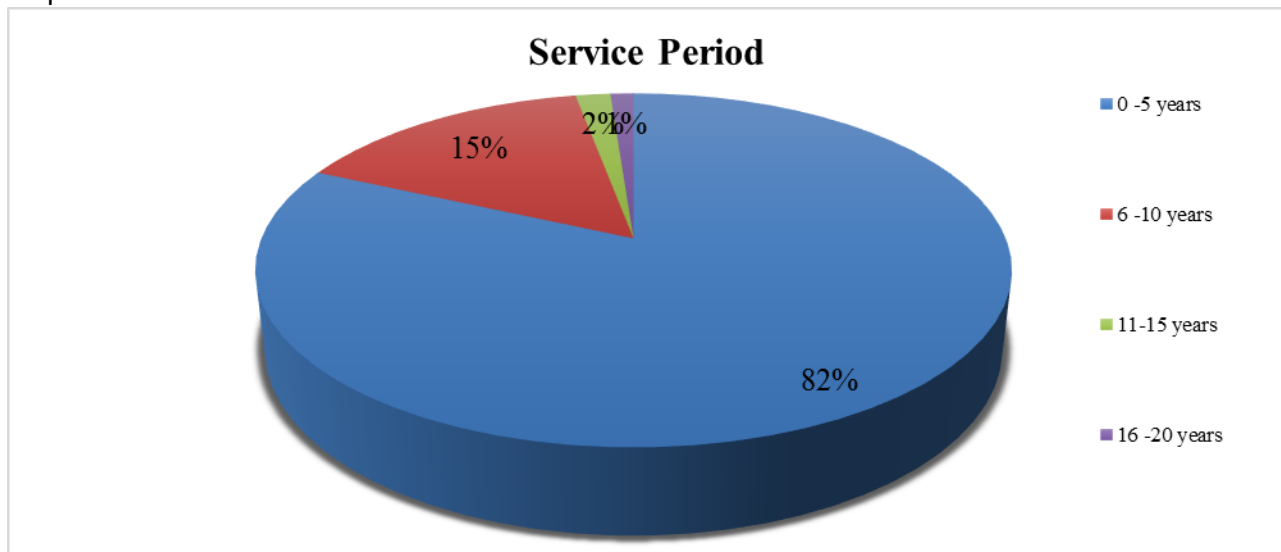

Figure 04: Distribution of the Service Period of the Respondents

The above figure depicts that majority (82%) of the respondents' service is less than five years while 1% of the respondents were working for 16-20 years. Further, 15% of the respondents' service is 6-10 years where 2% of the respondents' were working for 11-15 years for the current organization.
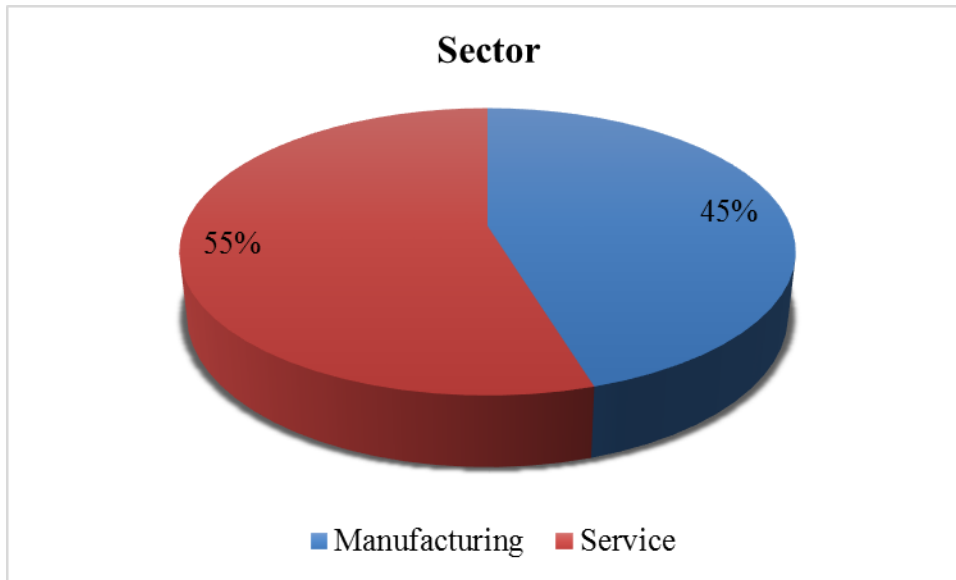
Figure 05: Sectorial Distribution of the Respondents

As per to the figure 05, 55% of the respondents belong to the service sector while 45% of the respondents are from the service sector.

Normality

Tests of Normality

	Kolmogorov-Smirnov[a]		Shapiro-Wilk		Skewness		Kurtosis	
	Statistic	Sig.	Statistic	Sig.	Statistic	Std. Error of Skewness	Statistic	Std. Error of Kurtosis
EGB	.116	.000	.944	.000	-.784	.186	.845	.370

* EGB = Employee Green Behaviour

Table 01: Test Statistics related to Kolmogorov-Smirnov and Shapiro-Wilk and Skewness and Kurtosis

Kolmogorov–Smirnov and Shapiro-Wilk (K-S and S-W) was performed and figures were shown in table 01. The date set in normal as the values for K-S and S-W are higher than 0.05 and the values are highly significant (0.000 < 0.05) (Field, 2009). Values of skewness (-.0.784) and kurtosis (0.845) depict the data are normally distributed according to Kline (2005 cited in Paghoush, Zarei, Damizadeh, Sajjadi, & Zeinalipour, 2015), where the cut of values of skewness and kurtosis are < 3 and < 10, respectively. The figures are shown in table 01. All these figures ensure that the data set is normally distributed.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.893
Bartlett's Test of Sphericity	Approx. Chi-Square	2463.363
	Df	120
	Sig.	.000

Table 02: Test results of KMO and Bartlett's Test

Kaiser-Meyer-Olkin (KMO) analysis used to assess sampling adequacy where KMO statistics values should be higher than 0.05 (> 0.05) and values are significant (p<0.05). Reliability was testes using Cronbach's alpha (α) and the value is .958 which is higher than 0.7 (α > 0.7) (Nunnally, 1978 as cited in Lv, Xu, & Ji, 2012).

The data for employee green behavior were analyzed according to the personal details of the respondents.

Table 03: Employee Green Behaviour According to Martial Status

Marital Status	Mean
Single	3.5671
Married	3.7992

Source: Survey Data

According to the table 03, both married and single respondents possess relatively high level of green behavior. But when considering the mean values, married respondents possess a higher level green behavior than single respondents.

Table 04: Employee Green Behaviour According to Educational Level

Educational Level	Mean
High School	1.8958
Degree	3.6530
Postgrdaute Diploama	3.6458
Master Degree	3.6509
Doctoral Degree	4.6875

Source: Survey Data

When considering the green behavior according to the educational level of the respondents, highest level showed by the doctoral degree holders where least green behavior possess by the respondents who possess only school education. Further, degree, postgraduate diploma and master degree holders possess the same level of green behavior, but a moderate value. Hence, it shows that with level of education get increased the level of green behavior increased.

Table 05: Employee Green Behaviour According to Gender of Respondents

Gender	Mean
Male	3.6005
Female	3.6937

Source: Survey Data

Considering the level of green behavior of between the gender of the respondents, both the groups possess relatively high level of green behavior where there is a slightly higher mean values of female than males. Hence, it shows that females possess higher level of green behavior than males.

Table 06: Employee Green Behaviour According to Gender of Respondents

Service period	Mean
0 -5 years	3.6466
6 -10 years	3.6971
11-15 years	3.9375
16 -20 years	2.8750

Source: Survey Data

As table 06 shows, respondents who work 16-20 years have least green behavior among the respondents. Employees who work for 11-15 years have the highest level of green behaviour among the respondents. Moreover, employees who work for 5 years and 6-10 years possess a very similar level, which can be considered as a high level of green behavior.

Table 07: Employee Green Behaviour According to the sector

Sector	Mean
Manufacturing	3.9343
Service	3.4153

Source: Survey Data

As the table 07 shows respondents from service and manufacturing sector show a high level green behavior. However, respondents from the manufacturing sector possess a higher level of green behavior compared to respondents from the service sector. Hence, it shows that employees of manufacturing sector behave way greener than the employees in the service sector.

Discussion

With regard to educational qualifications, lowest employee green behavior demonstrated by the high school qualified employees whereas Doctoral degree holders (PhD holders) exhibited the highest employee green behavior among respondents of this study. Postgraduate diploma and master degree holders possess moderate level of employee green behavior. These results

proved that with level of education get increased the level of green behavior increased. It means that there is a positive relationship between educational qualifications and employee green behavior. These results are consistent with the previous research studies on employee green behavior / pro-environmental behaviors. For example, Robbins (as cited in Nicholson, 2003 stated that there is a positive association between education and pro-environmental behaviors. In Asian context, Muttarak and Chankrajang (2015) discovered substantial green returns to education in Thailand.

According to the results of this study, there is no significant difference in values of employee green behavior between male employees and female employees. As per the results, female employees showed higher employee green behavior. These results are consistent with the previous research studies. For example, previous research studies proved that females possess strong environmental / green behavior than men (Luchs & Mooradian, 2012; Scannell & Gifford, 2013; Tikka, Kuitnen & Tynys, 2000; Zhang, 1993). Results of this research study showed that respondents who have 16-20 years' service period demonstrated lowest employee green behavior and respondents who have 11-15 years' service period demonstrated highest employee green behavior. Also present study proved that married and single respondents possess relatively high level of green behavior. Results of this study concluded that respondents from manufacturing sector are more concerned about employee green behavior. This can be happen as efforts taken by manufacturing sector companies to protect the environment. Previous study also stated that environmentally friendly efforts can be seen in manufacturing sector rather than service sector   (Grove e al., 1996).

Recommendations and Future Research Directions
The main objective of the current study; which is to identify employee green behavior of manufacturing and service sector organizations in Sri Lanka has been achieved lucratively. According to the results of this study it was found that respondents from manufacturing sector are greener than the respondents from service sector with the mean values of 3.9343 and 3.4153 respectively. There are evidences to claim that most of the manufacturing sector companies emphasized on sustainability and environmental friendly activities nowadays. Therefore, service sector should provide awareness for their employees on the benefits of green behavior engagement to the organization and to the society as a whole. On the other hand service sector should encourage more environment conscious behavior of the employees and recognize the employees who demonstrate environment friendly behavior while discouraging employees' environment-harmful behavior. Also the present study found that when educational qualifications increased employee green behavior has been increased as well. Therefore, policy makers should give more importance to environment education or green education in primary education and secondary education. Results of the study showed that green behavior of the employees' have been reduced with the tenure of the organization; which indicates that the management of the service sector and the manufacturing sector should motivate employees to initiate green behavior from the time they joined the organization.   Further employers should encourage employees to express their ideas and

opinions on environmental issues, to participate environmental events organized by the organization, implement environment friendly actions in their day today activities, and decrease energy consumption when the equipments are not in use.

As suggestions for future researchers, researchers suggest to expand this research to more sample to generalize the findings. This study was conducted as a comparative study. Also future researchers can select only one particular industry from manufacturing sector or one particular industry of service sector. More studies should be conducted in employee green behavior as it is an emerging research topic in Sri Lankan context. It can be cross sectional research study or longitudinal research study.

References

1. Boiral O. & Paillé P. (2012). Organizational Citizenship Behaviour for the Environment: Measurement and Validation. *Journal of Business Ethics*. Vol. 109, No. 4, pp. 431-445.
2. Boiral, O., Talbot, D., & Paillé, P. (2015). Leading by example: A model of organizational citizenship behavior for the environment. *Business Strategy and the Environment*, 24, 532-550. doi:10.1002/bse.1835
3. Borman, W. C., and Motowidlo, S. J. (1997). Task performance and contextual performance:The meaning for personnel selection research. *Human Performance*, 10, pp.99-109.
4. Botone, D. (2010). New predictors of Organizational Citizenship Behavior and Employees' Efficiency in the work group: Emotional Work. *Global Journal of Human Social Science*, 10(4), pp.65-72.
5. Campbell, J. P., and Wiernik, B. M. (2015). The modeling and assessment of work performance. *Annu. Rev. Organ. Psychol. Organ. Behav*. 2, 47–74. doi: 10.1146/annurev-orgpsych-032414-111427
6. Chankrajang, T., & Muttarak, R. (2015). Green Returns to Education: Does Schooling Contribute to Pro-Environmental Behaviours? Evidence from Thailand. *SSRN Electronic Journal.*
7. Field, A. (2009). *Discovering statistics using SPSS*. Sage publications.
8. Gifford, R., & Nilsson, A. (2014). Personal and social factors that influence pro-environmental concern and behaviour: A review. *International Journal of Psychology*.
9. Grove, S. J., Fisk, R. P., Pickett, G. M., & Kangun, N. (1996). Going green in the service sector. *European Journal of Marketing*, 30(5), 56-66.
10. Lanfranchi, J., & Pekovic, S. (2014). How green is my firm? Workers attitudes and behaviors towards job in environmentally-related firms. *Ecological Economics*, 100, 16-29. .
11. Luchs, M. G., & Mooradian, T. A. (2011). Sex, Personality, and Sustainable Consumer Behaviour: Elucidating the Gender Effect. *Journal of Consumer Policy,* 35(1), 127-144.
12. Lv, Q., Xu, S., & Ji, H. (2012). Emotional labor strategies, emotional exhaustion, and turnover intention: An empirical study of Chinese hotel employees. *Journal of Human Resources in Hospitality & Tourism,* 11(2), 87-105.

13. McConnaughy, Jacqueline Christine, "DEVELOPMENT OF AN EMPLOYEE GREEN BEHAVIOR DESCRIPTIVE NORMS SCALE" (2014). Electronic Theses, Projects, and Dissertations. Paper 83.

14. Norton, T. A., Parker, S. L., Zacher, H., and Ashkanasy, N. M. (2015). Employee green behavior: a theoretical framework, multilevel review, and future research agenda. *Organ. Environ*. 28, 103–125. doi: 10.1177/1086026615575773

15. Norton, T. A., Zacher, H., Parker, S. L., & Ashkanasy, N. M. (2017). Bridging the gap between green behavioral intentions and employee green behavior: The role of green psychological climate. *Journal of Organizational Behavior*, 38(7).

16. Norton, T., Zacher, H. and Ashkanasy, N. (2014). Organisational sustainability policies and employee green behaviour: The mediating role of work climate perceptions. *Journal of Environmental Psychology*, 38, pp.49-54.

17. Ones, D. S., & Dilchert, S. (2012). Environmental sustainability at work: A call to action. Industrial and Organizational Psychology: *Perspectives on Science and Practice*, 5, 444 - 466.

18. Paghoush, A., Zarei, E., Damizadeh, H., Sajjadi, S. E., & Zeinalipour, H. (2015). The Examination of the Causal Relationship between Work-Family Conflict and Burnout in Sarkhoon & Qeshm Gas Treating. *South journal of Educational Psychology and Counseling*, 2(3), 88-98

19. Podsakoff, P. M., Mackenzie, S. B., Paine, J. B., and Bachrach, D. G. (2000). Organizational Citizenship Behaviors: A Critical Review of the Theoretical and Empirical Literature and Suggestions for Future Research. *Journal of Management*, 26(3), pp.513-563.

20. Scannell, L. & Gifford, R. (2013). The role of place attachment in receptivity to local and global climate change messages. *Environment and Behavior*, 45, 60-85.

21. Sekaran, U. and Bougie, R. (2010). *Research Methods For Business: A Skill Building Approach*. 1st ed. John Wiley & Sons

22. Thiagarajan, B., and Kubendran, V., (2012). An Empirical Study on Organizational Citizenship Behavior In Private Sector Banks In Tamilnadu. *Interdisciplinary Journal of Contemporary Research In Business*, 4(1), pp.197- 203.

23. Tikka, P. M., Kuitnen, M. T., & Tynys, S. M. (2000). Effects of educational background on students' attitudes, activity levels, and knowledge concerning the environment. *Journal of Environmental Education*, 31(3), 12–19.

24. Wiernik BM, Dilchert S and Ones DS (2016) *Age and Employee Green Behaviors: A Meta-Analysis*. Front. Psychol. 7:194. doi: 10.3389/fpsyg.2016.00194

25. Wiernik, B. M., Dilchert, S., & Ones, D. S. (2016). Age and Employee Green Behaviors: A Meta-Analysis. *Frontiers in Psychology*, 7.

26. Zhang, J. (1993). Environmental hazards in the Chinese public's eyes. *Risk Analysis*, 13, 509– 513.