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The Relationship of Personality and Human Factors of Employee Productivity of Apparel Manufacturing Workers – Evidence from Western Province, Sri Lanka

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***Abstract*: This study was done to identify the relationship between the personality and human factors of employee productivity in the apparel manufacturing workers in Sri Lanka. Five (5) apparel manufacturing organisations were selected for this study by representing small, medium and large-scale organizations in Western Province, Sri Lanka. Data were collected from 500 workers using a pretested questionnaire. The composition of the questionnaire contains, part i and ii. Part i contains, validated twenty-one (21) productivity questions moderated by the researcher, based on past literature. Part ii contains Ten-Item Personality Inventory (TIPI) measures the Big-Five personality dimensions. According to the results, 70% of the sample indicates medium level employee productivity based on the human factors. 8% and 0.4% indicate low and high level of employee productivity respectively. Out of the five (05) variables of big five personality factors, Open to experience, Conscientiousness, Extraversion and Agreeableness shows moderate positive correlation with the human factors of employee productivity (r=0.40 to 0.69). Conversely, Neuroticism (Emotional Stability) indicates a weak correlation with above productivity (r=.10 to 0.39). The study shows that there is considerable knowledge gap in apparel industry of Sri Lanka to conduct further researchers on acquire and maintain productive employees to the industry.**

***Keywords*: Personality, Human factors of employee productivity, Big-five personality traits, Ten-Item Personality Inventory (TIPI).**

1. Introduction

In today's competitive world human resource has become as the most reliable asset of an organization which can't be duplicated. To gain the sustainable development by utilizing the human resource it needs to have a proper mechanism to handle the management of the available human resources. Also, the organizations are totally differentiating on its human capital due to its intangible characteristics such knowledge, skills and motivation of workforce increasingly sees it as invaluable in order to remain sustainable in the market (Nda & Fard, 2013).

Accordingly, employee productivity continues to be a major area of interest for scholars, researchers and managers (Bigelow, 2016).

Productivity is a performance measure encompassing both efficiency and effectiveness. It is important, therefore, to know who the productive workers are (Bhatti & Qureshi, 2007).

Even though there are numerous factors influencing on employee productivity such as pay and benefits, organizational and environmental factors the major determinants of productive employees are individual (Harris & Fleming, 2017).

2. Literature Review

By referring the past literature, it is obviously vibrant that various researches have examined the factors relating to the productivity. As mentioned in above productivity is a dynamic factor influenced numerous factors.

Conversely, since the productivity factor is a highly dynamic element, several researches have widely shared relevant knowledge and research on the effects of the human factors towards the productivity factor.

In Chapter 16 of Human Factors in Aviation: An Overview, as cited in Salas, Maurino & Curtis (2010), Hobbs (2008) discusses the importance of the increasingly relevant topic of unmanned aircraft systems (UAS) into the present and future of the aviation industry. He posits that poor human-system integration design, not technological hindrance, are the main concern for UAS development.

Dhillon & Liu (2006) carried out a study to present the impact of human errors in maintenance as found in the literature in order for practitioners to be aware of their impact and develop actions to mitigate their effect. According to this study a significantly large proportion of total human errors occur during the maintenance phase and also human error in maintenance is a subject which in the past has not been given the amount of attention that it deserves.

Past literature reveals, in the study carried out by Karanikas, Melis & Kourousis (2018) has studied, based on a pilot research survey which assessed the degree of balance between safety and productivity, and its relationship with awareness and communication of human factors and safety rules in the aircraft manufacturing environment.

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3. Research Methodology Overviews

This study focuses on employee personality and the human factors of employee productivity among the apparel manufacturing workers in Sri Lanka and the study is based on Western province in Sri Lanka.

To examine the personality of employees the study used Ten-Item Personality Inventory (TIPI) which is developed based on Big-five Personality Traits.

Subsequently, the human factors of the productivity which is the dependent variable of this study measured by moderated and validated questionnaire based on the past literature.

The sample population of the study is five hundred (500) apparel manufacturing workers by representing was five (05) selected apparel manufacturing factories in Western Province Sri Lanka. These factories are selected by representing the small, medium and large-scale organizations. Questionnaires were distributed among the sample by using stratified sampling. Co-relation method was used to specify the relationship between the variables.

A. Research Designing

The correlational research can evaluate the direction and strengths of the relationships and patterns of the relationships among variables in a single group of subjects without controlling the variables. It has wide range of designs to detect simple relationship between variables to complex casual directional designs (Ary & Sorensen, 2006). Correlational research can be either exploratory or confirmatory research. Exploratory research is usually done when the alternative options have not been clearly defined or their scope is unclear (Singh, 2007). In exploratory research design, researchers investigate the possible relationships, causes and effects. Advanced statistical methods such as path analysis and structural equation modeling facilitate the researchers to statistically confirm the findings of the exploratory studies (Hair et. al, 2009).

B. Validity Evidences

In present study, the researcher carefully selected and slightly modified the available tests to measure the originally intended constructs of the tests. Hence, new validity evidences, especially the new evidences based on internal structure and consequences of testing, are not necessary to provide for the present study. All the sub-scales that have been used to measure the variables in the study were published standardized scales or modified versions of them that have been used in prior studies as valid and reliable measures to measure the similar constructs. The measurements and their sub-scales to measure the variables in the present study were selected through the rigorous literature review of existing related theories and empirical studies. By conducting a comprehensive literature review, the researcher has selected standardized instruments that can be able to apply directly or as adapted versions to measure the constructs of the present study. The scales selected for the study is adopted standardize questionnaire developed by earlier researches.

4. Data Analysis and Discussion

A. Sampling Method

In order to achieve the objectives of the study quantitative research approach was used and data were collected by a sample survey. Hence, the non-probability sampling procedure was inappropriate to select the sample of the study.

B. Distribution of Personality Factors

Table 1
Distribution of the dimensions of personality among the sample

Dimensions of employee personality	Level	Percentage
Open to experience	High	15%
	Medium	78%
	Low	7%
Consciousness	High	13%
	Medium	50%
	Low	37%
Extraversion	High	29%
	Medium	61%
	Low	10%
Agreeableness	High	7%
	Medium	66%
	Low	28%
Neuroticism (Emotional Stability)	High	21%
	Medium	71%
	Low	8%

According to the Table 01 the significant level of personality dimensions is the "medium". Respectively those levels are 78%, 50%, 61%, 66%, 71%. Subsequently, the substantial levels of "Open to experience", "Extraversion" and "Neurotic" are the "High" level. Meanwhile the "Consciousness" and "Agreeableness" indicate the "low" level as the most significant to its "medium" levels.

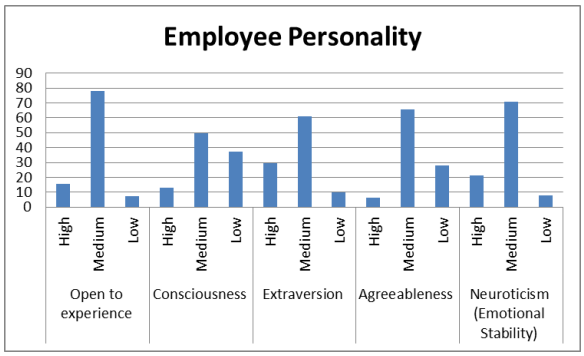

Fig. 1. Overall levels of the personality among the sample

C. Distribution of Productivity Factors

In this study, the employee productivity measures based on five (05) major dimensions.

According to the Table 2, the most outstanding level of Physical and mental wellbeing, Job satisfaction and Life positive attitudes is the "medium" level. As a percentage that values are respectively 88%, 72%, 53%. According to the bellow table the most prominent level of Self- performance attitude and Self- motivation is "low" level; as a percentage

57% and 66% respectively. As the table illustrates the lowest level of the entire dimension is the "high" level. Furthermore, the Physical and mental wellbeing has no any indicators subjected to the "high" level according to the Table 2.

Table 2
Distribution of the dimensions of employee productivity among the sample

Dimensions of employee productivity	Level	Percentage
Physical and mental wellbeing	High	--
	Medium	88%
	Low	11%
Self- performance attitude	High	16%
	Medium	25%
	Low	57%
Self- motivation	High	7%
	Medium	24%
	Low	66%
Job satisfaction	High	6%
	Medium	72%
	Low	15%
Life positive attitudes	High	9 %
	Medium	53%
	Low	33%

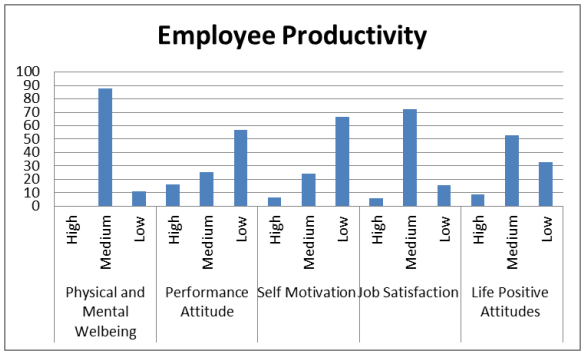

Fig. 2. Distribution of the dimensions of employee productivity among the sample

Table 3
Overall level of the employee productivity among the sample

Item	Level	Percentage
Overall employee productivity	High	0.4%
	Medium	70%
	Low	8%

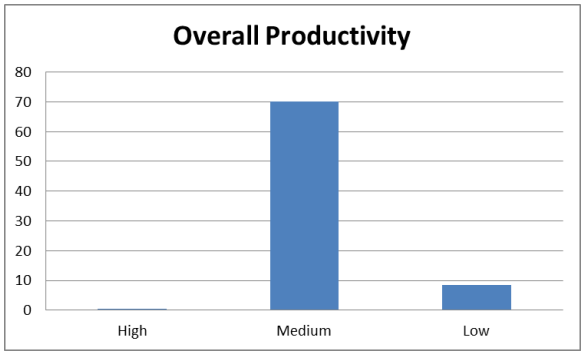

Fig. 3. Overall level of the employee productivity among the sample

According to the Table 3 the most significant level of overall productivity is "medium" and as a percentage it has covered 70% of the total population. High and low percentages of the overall productivity are respectively 0.4% and 8% according to the above table.

D. Association of Employee Personality and Human Factors of Productivity

Correlation is a statistical technique which shows the relationship between two variables. The main purposes of the correlation analysis are to discover whether there is a relationship between variables and to find out the direction of the relationship whether it is positive, negative or zero to determine the strength of the relationship between the two variables. These cutoff points are arbitrary and inconsistent and should be used judiciously. While most researchers would probably agree that a coefficient of <0.1 indicates a negligible and >0.9 a very strong relationship, values in-between are disputable. For example, a correlation coefficient of 0.65 could either be interpreted as a “good” or “moderate” correlation, depending on the applied rule of thumb. It is also quite capricious to claim that a correlation coefficient of 0.39 represents a “weak” association, whereas 0.40 is a “moderate” association (Schober, Boer & Schwarte, 2018).

Table 4
Association of employee personality and human factors of productivity

Personality	Overall Productivity	
	Pearson Correlation	Significance Value
Open to experience	0.403	0
Conscientiousness	0.471	0
Extraversion	0.54	0
Agreeableness	0.48	0
Neuroticism (Emotional Stability)	0.1	0.036

According to the Table 4 "Open to experience", "Conscientiousness", "Agreeableness" and "Extraversion" indicate moderate positive correlation with the human factors of the productivity. Conversely, as the Table 04 illustrates "Neuroticism" indicates no-significant association between those two factors.

The aim of this study is to study the relationship between the personality and human factors of employee productivity in the apparel manufacturing workers in Sri Lanka.

According to the literature there is very limited studies have been conducted in this regard based on Sri Lankan context.

As the results demonstrating in this study, the big five personality factors have significant moderate correlation with the human factors of productivity apart from the neuroticism factor.

According to the past literature the link between personality and productivity is important for two different reasons: first, employers are interested in a better understanding of this relationship. Anecdotal evidence shows the importance of personality in the workplace. For instance, as cited in Cubel et. al, (2016), Green, Machin and Wilkinson (1998) document that personnel managers find “attitude, motivation and personality” as the most important attributes when hiring.

Secondly, understanding to what extent personality traits impact labour market outcomes through productivity or through

other mechanisms is a key to offer an adequate foundation for early policy interventions (Cubel et. al, 2016).

5. Conclusion and Recommendations

According to the Central Bank of Sri Lanka, a significant contraction was observed in the manufacturing of textiles, wearing apparel (2020).

The industry, face many problems in developing and maintaining the required manpower. It is visible in all categories, particularly in operational grades. Even in the managerial grades. (Dheerasinghe, 2003).

Subsequently, the productivity of labour is considered very low in comparison with competitors and the labour productivity in the garment sector improved slowly and gradually over last several years (Dheerasinghe, 2009).

Therefor it is significantly important to examine the factors, influence to the productivity of the industry. As this study shows the "big five" personality traits have almost significant moderate correlation with the human factors of the employee's productivity.

Therefore, based on this study it can be recommended to develop a proper mechanism on hiring with special concern of the personality aspects. According to Dheerasinghe (2009) the industry faces many problems in developing and maintaining the required manpower. Therefor by considering the personality factors of the employees, as the study reveals it is possible to enhance the employees' productivity directly and minimize the turnover cost of the employees by hiring the best fitted people for the positions.

As literature shows, US employers ranked "attitude" as the most important skill among new employees in non-supervisory jobs (Bowles et al. 2001). Employers should be naturally interested on which extent personality traits influence productivity rather than other wage determinants such as bargaining ability.

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