DO SOCIO-DEMOGRAPHICS AFFECT SUSTAINABLE BEHAVIORS ? A PEEK IN MANUFACTURING INDUSTRY IN INDIA

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ABSTRACT

We examine the role of socio-demographic factors on sustainable behaviors a subset of ethical behaviors of employees in emerging economyand study its implications for policies and procedures with a sample from manufacturing organizations in India. Results showed that female employees exhibit higher Environmntal Responsible Behavior, altruistic behaviour and frugal behavior compared to male employees. And frugality behaviour was higher in older age group employees whereas Environmntal Responsible Behavior was found to be higher in younger age group males and females. As far as equity behaviour was concerned it was higher in younger females compared to older age groups and males were indifferent on this behaviour. The uniqueness of this study lies in the fact that it uses socio-demographic variables to study sustainable behaviors of employees. This study aids the organizations in achieving desirable outcomes such as corporate social performance, and organizational effectiveness. Step wise regression analysis showed that age and income were the most important predictors of sustainable behaviors of employees in workplaces. Overall socio-demographic variables have minimal effect on sustainable behaviour of employees in manufacturing in India and research involving studying other predictors of sustainable behaviour needs to be done.

Key words: Environmental responsible behaviour, frugality behaviour, altruistic behaviour, equity behaviour, Socio-demographics-India.

1 INTRODUCTION

Interest is growing in the organizations over the past few decades ,to study the human behaviour responsible for causing environmental problems leading to increased ecological footprints and the deterioration of the biosphere. Although procedures and processes are in place however change in working behaviour of employees is considered as pertinent to prevent pollution and environmental problems(Remmen and Lorentzen,2000;Hanna et al,2000). Organizations sustainability is defined as organizations operating in a way such that present needs of employees, and other stakeholders are being met without compromising on the ability of future generations to meet their needs (Mesmer-Magnus et al, 2012). Almost 85 % of fortune 500 companies reported environmental sustainability efforts and are actively pledging their support for sustainable goals (D'Mello et al, 2011;Neilson,2015).

Previous studies have shown how human behaviors and business activities are a major cause of environmental problems like water shortages, air pollution and environmental noise(Gardner and Stern,2002) and that involvement and engagement from employees is necessary for most sustainability initiatives (Mesmer- Magnus et al, 2012). Thus a shift in

people's behaviors is the need of the hour to counter environmental problems and attempt to improve environmental quality.

Verdugo and Pinheiro (2004:10) defined the term sustainable behaviors as a set of deliberate and effective actions that result in the conservation of socio physical environment for present and future generations (Bonnes and Bonnaiuto,2002). Sustainable behaviors encompasses behaviors to conserve environment(Kaiser,1998; Paco and Laurette,2018), helping others which means they are altruistically motivated (Pol, 2002), create conditions that lead to equitable use of resources(Ehrlich and Ehrlich,2004) and indulge in moderate consumption of resources(Iwata,2002). Studies on Sustainable behaviors with its four instances have mainly focused on children, and adolescents in private spheres (Hernandez et al, 2020; Verdugo et al, 2011) consumers sustainable behaviors in marketing of products (White et al, 2019) and understanding the antecedents and consequences of sustainable behaviors (Verdugo et al,2011). Sustainable behaviors is an emerging and developing field of research with broader implications for various interventions.

Moreover, industrial and business activities cause massive greenhouse gas emissions and environmental pollution and are the largest users of world's energy resources(Oskamp 2000;Stern 2000). Individuals spend more than half of their waking hours in workplace and the rapid shift towards green economy requires employees to display responsible behaviors to achieve sustained business advantage (Anderson and White,2011; Aguinis and Glavas,2013). Employees are major actors in workplace and their sustainable behaviour is an under-researched area that needs more attention(Ruepert et al, 2016). Although organizations have started engaging in pro-environmental behaviors due to industry regulations, governmental and societal concerns and expectations , employee engagement in sustainable behaviors is mainly voluntary. There have been studies in developed countries to understand the psychological variables that motivate pro environmental behaviors at workplace like perceived organization support, environmental concern, organizational commitment(Daily et al, 2009, Ramus and Killmer,2007; Temminck et al, 2013). There have been studies to test socio-demographic factors and household behaviors of working people()but no studies so far have examined socio-demographic factors and workplace sustainable behvaiors of employees.

Demographic trends in South Asian nations have witnessed expansion of girls education, development of financial markets ,more women into workforce and advent of family planning programs(Bloom, Canning and Rosenberg,2011)in line with sustainable development goals. South Asian nations are projected to add 18 million people to its working age population in next two decades. India is one such South Asian nation whose middle class is on the rise and projections show that by 2025 ,Indian middle class will number 583 million people. India also has the largest youth population in the world and almost 8 million people per annum are expected to enter the labor market (www.ILO.org). These well documented socio-demographic trends have made questions regarding sustainable behaviors increasingly salient.

Stereotype exist that concerns about environmental problems are luxury problems and environmental issues are negatively associated with low income(Power. A , Elster.J,2005), that females display higher pro-environmental behaviors compared to males, people with higher education levels are more concerned with social welfare and exhibit more

sustainable behaviors (Meyer,2015). Also some authors have suggested that older workers health issues (e.g., Taking stairs; Afacan ,2015) prevent them from indulging in sustainable behaviors. Because negative socio-demographic stereotypes for sustainable behaviors are prevalent and affect human resource management practices, it is pertinent to determine whether these beliefs have any empirical support. The purpose of this study is to systematically examine socio demographic factors and four instances of sustainable behaviors of employees in manufacturing organizations in India.

2 THE PRESENT STUDY

This study is a systematic investigation of relationship between socio-demographic groups and employees sustainable behaviors. Research establishing if and how socio-demographic groups differ in their sustainable behaviors is crucial in guiding organizations to create and implement initiatives which are effective in bringing about positive environmental change. In case employees do differ based on their socio-demographic factors in their display of sustainable behaviors at workplace , there may be implications for organizations on how to adapt such initiatives ,whether through education, training, induction and socialization—so as to meet the needs of diverse workforce.

Workplace is significant as a suitable place for people to learn to change their environmental responsible behaviors (ERB) so it is imperative to study human behaviors which are a major cause of climate change and environmental issues(Steg and Vlek,2009) . Moreover, Developing economies like India, have their own challenges of increasing population, skewed gender ratio, poor enforcement and implementation of law, social insecurity, hence environmental consciousness may have different connotations in developing countries (Jamali and Mirshak, 2007). There is fast depletion of ecological assets in support of economic boom and increasing population ,hence business intervention is required to avert this risky trend. Of late there has been interest on studying organizations commitment to ethical and sustainable behaviors in developing economies (Sridhar and Jones,2013) as well. But the research on employees workplace sustainable behaviors in organizations is still an unresearched area. The research in this domain area is essential to these emerging economies(e.g., India) to gain an insight into the environmental psychology of individuals in organizations. Second the manufacturing industry area lacks studies on how demographics play a role in employees sustainable behaviors. This study aims to achieve that by utilizing role theory.

Role theory postulates how roles played by an individual influences psychological outcomes like behaviors, attitudes , cognitions and social interaction.

The manufacturing industry is well-known for its labor-intensiveness and is projected to contribute to nearly forty million well-paid jobs by 2025. However, manufacturing industry is facing serious environmental problems and is seeking to reduce carbon footprints(www.niti.gov.in).

In South east Asia, there is a dearth of research in this area and almost negligible work in sustainable behaviors of employees at workplace. Hence there is a need to systematically and comprehensively examine correlates of sustainable behaviors of employees in organizations. Thus, we undertook this comprehensive study on employees working in various manufacturing organizations in Delhi, NCR to examine the socio-demographic determinants

of sustainable behaviors. Past studies on relationship between consumer sustainable behaviour and socio-demographic factors have been inconclusive (Park et al,2012). It was highlighted by Jackson(2006) in his study on sustainable consumption that employees and consumers are same and behaviors and roles of the two, are interrelated. Economists suggested external rewards like discounts, gifts and penalty viz, tax or fine (White,2019) as solutions for encouraging sustainable behaviors in consumers . On the other hand psychologists suggest tools such as awareness, concern and behavioural change(Clark et al,2003). However few researchers pointed out an interdisciplinary approach and use both cognitive and demographic variables to study such behaviors (Blankenberg,2018).
Hence, in the present paper the various socio-demographic factors were studied to understand the sustainable behaviors of employees at workplace in India from the data collated from an ongoing study. Psychological Factors of belief, risk perception, attitude and trust that motivate sustainable behaviors have been under investigation (Harvey, Heidrich and Cairns. K,2014) in a study on adoption of urban plans. As we are trying to actively seek solutions to sustainability problems, it is essential for policy makers and researchers to understand the reason why individuals would undertake sustainable behaviors.

3 DEMOGRAPHIC VARIABLES

There have been few studies on sustainable behaviors (Corral Verdugo,2011), interactive effect of socio-demographic variables of pro-environmental behaviour(Jayesh, Ashwin, Justin,2017) which shed light on the various factors responsible for such behaviors. Socio-demographic stream implies who is more indulgent in sustainable behaviors, low/high income people, younger generation or older people, male/female or based on marital status. Education and age have been shown to correlate with environmental concern, beliefs and behaviour, although gender was seen as positively correlated with environmental concern and behaviour(Arnocky,2014).

Researchers have shown that studying sustainable behaviour is a complex structure of attitudes, and values and females with altruistic values predict greater environmental concern than men(Arnocky 2014, C.Verdugo,2011). Thus, it is essential to understand the socio-demographic factors to predict sustainable behaviors .

Age has been shown to relate negatively with ERB as is the case in a study by Wright et al (2003) where concerns about environmental behaviors are found to be less in older people.

Education has been found to increase ERB (Johnson et al,2004) and educated people are found more concerned about social welfare as well (Johnson et al,2004; Torgler and Garcia-Valinas,2007; Meyer,2015). Previous studies (DeSilva and Pownall,2014) have found no effect of income on ERB.

Gender has been shown to be a significant predictor of ERB with women showing considerable concern towards ERB compared to men (Lynn and Longhii,2011;Longhii 2013). This has been confirmed across nations(Hunter et al,2004).

4 SUSTAINABLE BEHAVIORS

Sustainable behaviours are important for the conservation of natural environment and for protecting the integrity of society thus maintaining quality of life (Fonllem et al, 2017). It has been defined as preservation of natural environment as well as individual and social well-

being considering present and future generations (Corral, 2011). Although the terms sustainable behaviour and pro-environmental behaviors are used synonymously ,PEB is more to do with conservation of natural environment whereas sustainable behaviour is concerned with human and natural environments(Fonllem,Verdugo, Sing and Ramos,2013). Sustainable behaviors are future oriented as it considers needs of future generation while satisfying present needs (Bonnes and Bonnaiuto,2002).Study conducted on a sample of children exhibited that children who are connected to nature indulge more in sustainable behaviors and are more happy individuals (Hernandez et al,2020). Frugality in a positive sense is to do with prudence and carefulness. It has been praised as desirable mode of life in the field of religion (Nellis and Nellis,2010).
Blok et al(2015) study was the first one to find factors affecting PEB at workplace and conclude that leadership can influence employee's PEB at workplace. The frugal behaviour of employees and cost structure and disciplined spending leads to sustainable competitive advantage (Wheat 2001;Brooker 2000). Altruism consists of those voluntary actions that help another person with a work (related) problem(Organ,1990).

5 STUDY LOCATION

Employees in manufacturing industry were target population in this study. India is the second most populous nation in the world and according to India's ministry of commerce manufacturing contributes 17% of GDP and creates large number of jobs annually. The study location was Delhi NCR a major economic hub and centre of many local and MNCs in manufacturing industry.

6 METHODOLOGY

Data was collected through online questionnaire ,which was sent randomly to HR of 20 manufacturing organizations (Fundoodata.com) in Delhi NCR seeking permission to conduct this survey in their organizations. Manufacturing organizations contributed maximally to environmental degradation through emissions higher than prescribed norms(niti.gov.in), thus surveying it should provide valuable insights. The online questionnaire was shared with 400 employees working in these organizations after permission was sought to conduct this study. Sample size was computed assuming significance level of 5% and tolerance error of 6.5% resulting in minimum acceptable sample size of 252. The purpose of the study was explained to the participants and they were apprised of the complete confidentiality of their data. The questionnaire was sent online through a link created for the purpose.

7 TOOLS FOR STUDY

There were questions on socio-demographic details (Age, gender, education, income, marital status) and sustainable behaviors of individuals(ERB, Altruistic behaviors, frugality behaviors and equity).The instrument used for assessing sustainable behaviors was Podsakoff and MacKenzie scale for altruistic behaviors (1994) with 5 items which uses a four point Likert scale (0=never to 3 =Always indulge in such actions), Environmental responsible behaviour was measured using an instrument "General ecological behaviour" developed by Kaiser(1998) which uses items like reuse, recycling assessed on a scale (0= never to 3=always , scale). Frugality was measured through an instrument developed by Anderson and Lillies () on a 5 point Likert scale (0=totally agree to 4=totally disagree). Equity was measured with items developed by Corral-Verdugo et al (2010) on a 5 point

Likert scale (0=totally disagree to 4=totally agree). The scales were tested for reliability and validity by the authors in Mexican context. We tested the reliability and validity of the scales and Cronbach alpha value were 0.98.

Due to a confluence of factors including environmental degradation, fast depletion of resources , climate change ,social inequity and poverty, a new and innovative way of doing business is the need of the hour (Menon and Menon,1997).

8 SCALE RELIABILITY

Reliability of the scale is to be observed to test the strength of the scale. It is assessed through internal consistency which is computed by measuring Cronbach's alpha value (Cronbach ,1951). The overall alpha coefficient value was found to be 0.983 well above the threshold value of 0.6 (Nunnally, 1978).

9 RESULTS

Basic socio demographic details

A total of 400 questionnaires were sent out of which 252 completely filled were received, leading to a response rate of 63 percent.

The age of the employees ranged from 20-60 years.

Almost half of the participants were in the range of 41-50 years. Both the genders were represented and most of the participants were married. A majority of participants were having education beyond graduation level and few of them had doctorate as their qualifications. The income of the participants ranged from INR 4,00,000 to above INR 10,00,000 annually.

Table 1 Description of socio-demographic variables

Variable (*n* =252)		N (valid)
Age categories (years)		
	20-30	59(23.4)
	31-40	60(23.8)
	41-50	103(40.9)
	51-60	30(11.9)
Gender		
	Men	209(82.9)
	Women	43(17.1)
Marital Status		
	Single	51(20.2)
	Married	201(79.8)
Education		

	Graduate	148(58.7)
	Post-graduation	65(25.8)
	Doctorate	39(15.5)
Income		
	4-5 lacs (INR)	9(3.6)
	5-10 Lacs	51(20.2)
	Above 10 lacs	192(76.2)

9.1 *GENDER AND SUSTAINABLE BEHAVIORS*

Women are found to show more of pro-environmental behaviors than men(Lynn and Longhi,2011; Longhi 2013) and this difference has been confirmed across nations(Hunter et al,2014).

9.2 *AGE AND SUSTAINABLE BEHAVIORS*

There was significant difference in ERB with respect to age of employees. The mean ERB score was significantly different between different age groups. Both males and females in the age group of 20-30 years showed higher ERB compared to those in 31-40 years group who in turn had higher ERB than those in higher age groups from 41-50 and 51-60 years. Females in the age group of 20-30 years had significantly higher ERB compared to males in the same age group. Men and women in the age group of 41-50, 51-60 years did not differ significantly in ERB. For frugal behaviour and age ,it was significantly different for higher age groups 41-50 years and 51-60 years, males and for females those above 31-40 years was significantly different from those in the age group of 20-30 years. However 41-50 years and 51-60 years groups did not differ significantly for females. Females in the higher age groups of 31-40 years and above were found to have significantly higher frugality behaviour compared to males in the same age group.

For altruistic behaviors also for higher age groups 41-50 years asignificantly higher than 20-30 years and 31-40 years of age groups for both males and females. For females there was significant difference on altruistic behaviour in different age groups compared to males. Females equity behaviour was significantly different for younger age group pf 20-30 years compared to all other age groups. Males did not differ significantly on this behaviour in diffetent age groups.

9.3 *EDUCATION AND SUSTAINABLE BEHAVIORS*

For environmental responsible behaviour and education ,mean behaviour scores were not significantly different for different education groups (p=.276). There was no significant difference on ERB, altruistic behaviors and frugality behaviors and equity behaviors with respect to education for both males and females. Although, in private spheres education has

been linked to increased ERB, (Johnson et al,2004) more environmental concern and social welfare (Meyer,2015). Education is found to enhance environmental concerns by increasing knowledge about environmental issues (Franzen and Meyer,2010).

9.4 *MARITAL STATUS AND SUSTAINABLE BEHAVIORS*

Marital status was significantly associated with frugality behaviors and environmental responsible behaviour but not with altruistic and equity behaviors. Married males and females displayed higher frugality behaviour and their mean behaviour scores were significantly higher ($p=0.007$) compared to their unmarried counterparts. For married males and females altruistic behaviour was also significantly higher ($p=0.005$) than singles. Marital status was not significantly associated with equity behaviors in both males and females.

9.5 *INCOME AND SUSTAINABLE BEHAVIORS*

Those with income level less than INR 4,00,000 showed less of altruistic behaviors compared to higher income groups. This is in line with previous researches (Van Scotter,2000) which shows that income has positive relationship with altruistic behaviors. For income and ERB , individuals with income higher than INR 5,00,000 had significantly higher ERB than those with an annual income of less than INR 4,00,000, indicating a positive relationship between income and ERB. Among both genders higher annual income was significantly related with frugality behaviors .For females equity behaviour and income were positively associated.

This is in contrast to previous studies which show that income had no effect on ERB in general (Whitmarsh and O'Neill, 2010). Studies in private sphere show that poorer people exhibit more of pro-environmental behaviors like using public transportation (Longhi, 2013)but few studies also reveal that higher income is associated with increasing ERB(Stern et al., 1999) and people with higher income tend to indulge in more water conservation and other environment friendly practices (Berk et al., 1993).

Table 2 Sustainable Behaviours and Socio- Demographic Correlates: Bonferroni post hoc test after ANOVA for multiple comparisns

Women (W) ,Men (M)		ERB (Mean±S.D)			AL (Mean ± S.D)			FL (Mean±S.D)			Equity (Mean±S.D)		
		Total	W	M	Total	W	M	Total	W	M	Total	W	M
Age groups.	20-30 (W= 7,M=20	10.3±8.1	10.9± 8.6	9.6± 7.6	16±9.1	16. 7±9.2	15.4± 9.0	17.4±7.9	17.8± 7.6	16.9± 8.1	13.5±5.6	14.7± 5.7	12.3± 5.4
	31-40 (W=11,M=95)	10.1±7.6	10.7+ 7.8	9.4+ 7.4	18.9±8.7	18.7± 8.2	19.2± 9.2	17.9±7.7	18.4± 7.8	17.5± 7.5	13.9±5.3	14.1± 5.6	13.6± 4.9
	41-50 (W= 19, M= 76)	9.6±F68	9.9± 8.8	9.3± 7.3	19.8±8.8	19.4± 9.1	20.2±8.6	18.8±7.7	19.8± 8.1	17.7±7.2	13.1±5.2	13.7 ± 5.5	12.4± 4.8
	51-60 (W=6, M=18)	9.5±7.9	9.8+ _8.7	9.2 + _7.1	19.7±9.1	19.3± 9.2	20.1± 8.9	19.1±8.2	20.2± 8.2	18.1± 8.1	12.5±4.8	13.4± 5.4	11.6± 4.2
	F value	-7.90*	-5.40*	-2.30*	7.50*	6.20*	4.40*	5.80*	4.40*	0.40*	5.70*	4.50*	3.5
Income	INR4-5 lacs (W=,10M=20)	10.1±7.9	10.8± 8.5	9.3± 7.4	17.2±9.4	17.8± 9.5	16.5+ _9.2	13.3±8.7	13.8±8.4	12.8± 8.9	13.4±5.8	14.4±5.4	12.6± 6.2
	INR 5-10 lacs (W=23,M=100)	9.9±7.4	10.5± 7.5	9.2± 7.2	17.9±9.3	18.4+ _9.6	17.4± 9.1	14.3±8.4	15.9± 8.1	12.8± 8.7	13.1±6.6	12.7± 7.1	13.5± 6.1
	INR>10 lacs (W=10,M=89)	9.4±7.7	9.6+ _8.5	9.1± 6.9	19.1±9.3	19.7 + _9.8	18.4± 8.9	16±8.3	17.5± 8.2	14.5± 8.4	14.3±5.5	14.6±5.5	13.9± 5.4
	F value	6.1*	2.2*	4.6*	3.3*	0.3	4.3*	5.7*	4.3*	2.1*	3.1*	3.0*	0.2
Education	Graduate (W= 24,M=154)	9.6±8.1	9.6± 8.6	9.7± 7.5	17.1±9.1	17.6± 9.4	16.7±9.8	13.9±8.6	14.4± 8.3	13.4+ 8.8	12.9±5.7	13.4± 5.3	12.3± 6.1
	Post-graduate (W=17,M=49)	9.7±7.9	9.5± 8.5	9.8±7.4	18.2±8.9	18.8± 9.2	17.6±8.6	13.8±8.4	14.9± 8.2	12.7+ _8.5	12.9±6.1	12.6± 6.2	13.2±5.9
	Doctorate (W=2,M=6)	9.3±7.9	9.2± 8.4	9.3± 7.3	18.2±8.6	17.8± 8.7	18.7+ _8.5	15.4±8.0	16.9± 7.9	13.9± 8.1	13.7±5.3	13.7± 5.4	13.6±5.2
	F value	0.5	2.1	0.8	0.9	2.3	0.7	0.6	2.2	0.7	7.8	6.4	3.5
Marital Status	Married (W= 40 M=200)	9.5±7.5	9.4± 7.5	9.6+ _7.4	15.3±9.0	15.7± 9.3	14.9+ _8.7	13.6±8.3	14.3±7.8	12.9±8.7	12.1±5.6	12.5± 5.2	11.7± 5.9
	Single (W=3, M=9)	9.4±7.3	9.3± 7.3	9.5± 7.2	14.3±8.6	14.8± 8.9	13.8+ _8.3	13.1±7.9	13.5± 7.6	12.6± 8.3	12.2±5.9	12.3± 6.1	12.1± 5.8
	t value	0.86	0.2	1	0.98	0.3	1.1	3.1*	2.3*	1.1	2.4*	1.7*	1.3

**Significant at p=.01. *Significant at p=.05 level

10 STEP-WISE REGRESSION ANALYSIS

In the step-wise regression analysis for ERB, Altruistic behaviors, frugality behaviors and equity behaviors (Table 3), the variables entered were: age, gender, marital status, education, and income. For ERB, only Age, gender and income were significant and explained 5.2% of the variance. For altruistic behaviors, age, income and gender were significant and they explained 11.5% of the variance. For frugal behaviour, age and income were significant and explained around 5.7% of the variance. For equity behaviors also age and income was significant and explained 5.4% of the variance.

Since there were differences noted with respect to various socio-demographic variables on sustainable behaviors of men and women, the step wise regression was also done separately for men and women (Table 5), instead of just controlling the effect of gender (Table 4).

Table 3 Step wise regression analysis

Dependent variables.	Significant Predictors	Beta	*t* value.	Significance.	$R^{2.}$ R^2	Adjusted *F*
ERB	Age	-.73	-9.68	.000	.053	.052 9.387**
	Income	.035	3.35	.001	.059	
	Gender	.014	2.05	.044	.061	
Frugality	Age	.052	10.99	.000	.059	.058 12.083**
	Income	.033	3.47	.001	.065	
Equity	Age	.078	2.03	.043	.016	.015 7.067**
	Gender	.078	2.01	.042		
Altruistic	Age	.076	1.56	.000	.058	.057 11.116**

Income	.025	2.84	.006	.061
Gender	.014	2.07	.041	.062

** Significant at <.001 level

Table 4 **S**tep wise regression analysis-controlling for gender

Dependent variables	Significant Predictors	Beta	*t* value	Significance	$R^{2.}$ R^2	Adjusted R^2	*F*
ERB	Age	-.551	4.79	.000	.062	.060	28.06**
	Income	.228	2.54	.013			
Frugality	Age	.774	10.74	.000	.067	.065	35.71**
	MS	.231	3.06	.003			
	Education	.238	3.85	.000			
	Income	.269	8.91	.000			
Altruistic	Age	.358	5.67	.000	.064	.062	28.26**
	Income	.224	2.24	.028			
Equity	Age	.213	2.01	.001	.041	.039	14.979**
	Income	.209	3.65.	.007	.054	.051	

** Significant at <.001 level

Table 5 **S**tep wise regression analysis (separately for men and women)

Dependent variables.	Gender	Significant Predictors	Beta	*t* value.	Significance.	$R^{2.}$ R^2	Adjusted	*F*

ERB. 9.986**	Men	Age	-.157	3.043	.001	.041	.0367
		Income	-.152	2.978	.002		
	Women	Age	-.230	-4.276	.001		
Frugality 12.668**	Men	Age	.220	3.667	.000	.084	.0791
		Income	.131	1.546	.001		
	Women	Age	.224	4.932	.000		
		Marital status	.102	2.093	.001		
Altruistic 11.245**	Men	Age	.179	2.987	.001	.074	.0712
		Income	.089	2.154	.002		
	Women	Age	.188	2.356	.000		
		Education	.101	2.208	.001		
Equity 8.996**	Women	Age	.148	3.354	.001	.050	.0484
		Income	.145	3.187	.000		

** Significant at <.001 level

In the step wise regression analysis the entered variables explained equity only for female employees, once age was entered, income was automatically removed from the model (Table 6).

ANCOVA was applied to control the effect of income on the relationship between age and sustainable behaviors. Results were similar in nature. Increasing age was significantly associated with ERB (p=.05 level). Even after controlling for any simultaneous effect of increase in income as age increased altruistic behaviour, frugality behaviour increased (p=.05 level).

DISCUSSION

The present study is perhaps a comprehensive work to understand sustainable behaviors of employees at workplace in manufacturing industry in India. As more and more organizations are adopting sustainability ,it is becoming a social norm. Sustainable behaviors of employees at workplace can lead to significant environmental impact and competitive advantage(Lasrado. F, Zakaria.N; 2020) for the firms. Besides financial benefits , these

practices can lead to employee attraction, employee retention, productivity and overall engagement. The study included large sample of both managerial and non-managerial employees in different age groups from both the genders and is fairly representative of employees from manufacturing organizations in North India. The outcomes of this study are expected to have positive impact on organizations that formulate procedures and policies to engage sustainable behaviors of employees. The study depicts various sustainable behaviors of employees which are shaped differently among male and female employees due to different expectations from them within the context.

Few studies have reported different levels of sustainable behaviors (Environmental behaviour, frugal behaviour, altruistic behaviour and equity) subsets across nations and cultures (Verdugo,2011). That culture has a major influence on sustainable behaviors is a known fact(Miska, Szocs and Schiffinger,2017) and also its role in sustainable built environment is growing due to the increased impact of the environment on achieving sustainable development(Opoku.A,2015). In our study the responses on sustainable behaviors revealed that overall the group exhibited sustainable behaviors to some extent. It was revealed that female employees are more sensitive towards ERB than men and more concerned to take part in jobs that have an impact on social and environmental causes. Though more males than females have a take on sustainability at work, more women took active steps as revealed in the survey. This can be attributed to females capability to nurture and connect emotionally.

In the current study with progressive age ,altruistic and frugality behaviors seem to improve even after taking into account improvement in income. There were also reports of more frugal behaviour (slight increase in women) and increasing altruistic behaviour(for both men and women) with increasing age. Increasing altruistic behaviour may be accounted to increased awareness of social role behaviors in both males and females (K.Skarin,1976).This is in stark contrast to studies which show that with health altruism decrease with age in an experimental study on American samples(Long and krauser,2017).Also Eckel and Grossman (as cited in Andreoni,2001) find that females on an average indulge more in altruistic behaviors.

Possible improvements in education , lifestyle, awareness and concern may be attributed to sustainable behaviors of employees working in manufacturing industry in India. In addition philosophical orientation of people towards controlling desires could have played decisive role.

We found environmental behaviors were more pronounced in younger employees(D'Souza et al,2007) and more so in women than in men. This is in contrast to previous studies which revealed that men are more environmentally conscious (Jayesh, Tiwari, Paul,2020)and indulge in more pro-environmental behaviors compared to women. In the present research, pro-environmental behaviour at the workplace is referred to as any activity, undertaken by an individual, directly or indirectly at their workplace which she/he thinks, will improve or help to improve the natural environment (Ture and Ganesh, 2014). It is an intent oriented definition. It focuses on act of individuals with an intention to benefit the natural environment.

Education was not significantly related to pro-environmental behaviors in line with other studies (Rowlands et al. 2003; Tilikidou 2007; Sánchez et al. 2015). This can be attributed to the fact that people working at different levels in this industry hold a particular degree of education and all are fairly educated.

Marital status was also a significant predictor of pro-environmental behaviour as it was seen that married employees had higher propensity for pro-environmental behaviour(Patel, Jayesh; Modi, Ashwin; Paul, Justin (2017), more frugal behaviour than their unmarried counterparts.
Marital status had no significant impact on altruistic and equity behavior in both men and women.

The results are in line with roles theory which postulates that different groups of people with different roles display different behaviour (Eagly et al, 2000). The study depicts that sustainable behaviour is shaped differently among male and female employees due to varied expectations within the contexts.

Further in our study the respondents were more or less evenly distributed on altruistic and equity behaviors, though females exhibited slightly high altruistic behaviors compared to males (Garza, Caparo and Ramirez,2018) and it increased with age in both the genders. This can be accounted to the fact that women are considered more unselfish than men (Eagly,2009) and also contribute more to charity (Mesch et al,2011). Previous research shows that older workers engage more in prosocial behaviours compared to younger employees(Driscoll and Roche,2017). Altruistic behaviour in older employees can be a result of socially acceptable norm of benevolence that embraces prosocial moral orientation and a belief that helping others without looking for personal benefit is a moral imperative(Kanungo and Conger,1993 as cited in Wagner, Sharon, Rush,2000).

Education causes individuals to appreciate, be concerned with social welfare and behave in more environmentally friendly ways (Meyer.A,2015). Younger educated employees show higher propensity for sustainable behaviors may be because of the fact that environmental education has been a core paper at schools and colleges in India following the directive of honorable supreme court of India(Sonowal.cj,2009). Thus the level of awareness is higher in younger individuals compared to their more elderly cohorts. Environmental education involves teaching methods about high environmental concern and sensitivity towards environment(Otto.S, Kaiser.F,2014). It is also a fact that more of environmental concern instils a belief that changes in their behaviour can solve environmental problems(Ellen et al, 1991).

In step wise regression age, education and income emerged as a significant predictor of sustainable behaviors of both the genders of employees in organizations. While sustainable behaviors of employees may lead to competitive advantage for organizations , training may contribute to more indulgence in sustainable behaviors thus leading to their occupational

status, income and better progress to attain their goals so as to adapt to the environs of changing business world.

Frugality has been regarded as the virtuous social value in India and the country provides fertile environment for acceptance of frugal behaviors (Tiwari.R,2017). Women exhibit more frugal behaviour even at workplace may be because they have less willingness to pay which can be attributed to gender-pay gap (White and Sintov , 2017). The conception of interdependent self in the Indian context is being increasingly recognised (Chadha & Misra, 2004; Dhawan, Rosenman, Naidu, & Rettek, 1995; Misra, 2001; Misra & Giri, 1995; Sinha, 1984; 1988).

Frugality has long been regarded as a virtuous social value in India and socio-cultural context provides a fertile ground for the same (Tiwari.R,2017). Frugality and responsibility tends to increase with age (Morris and Venkatesh,2000). Older workers may have more of characteristics of reducing waste, using company resources judiciously so though they may be having less of environment related behaviors, they may have more of tendencies to perform resource conservation behaviors (Wiernik, Dilchert and Ones,2016).

LIMITATIONS AND IMPLICATIONS OF THIS STUDY

This study was conducted in manufacturing organizations in North India so it cannot be generalised to employees working in other industries. Also, all the variables in study are measured on self-reported scales making it limited to generalise the findings. Only select socio-demographic factors were investigated in this study. On a comparative basis studies can also investigate the relative role of other psychographic factors like perceived organization support, personal values of employees which can provide better understanding of sustainable behaviors of employees. Of course the relationship between employees socio-demographic factors and sustainable behaviors need further validation in different geographical area. The findings not only make contribution to the field of sustainable management but also offer new insights to relevant HR managers who may consider employees sustainable behaviors to achieve sustainable goals as one of the criteria to select right employees.

Efforts to promote these sustainable behaviors in manufacturing industry could well target less educated employees, those in low ranks or unemployed and people in small cities at-least on these 4 sustainable behaviors. Also, our study excluded manufacturing industry in some rural regions in India due to lack of data so this study cannot be assumed to extend in those regions of India.

CONCLUSION

This research is a major step to understanding socio-demographic factors influence on sustainable behaviors of employees at workplace. Age and income are found as major predictors of sustainable behaviors of employees in manufacturing industry. There was no statistically significant difference found on grounds of education between males and female employees, may be due to the fact that a particular level of educational background was the cut off point to get recruited at a position in these organizations. There were statistically significant differences found in the sustainable behaviors of male and female employees

working in these organizations leading to the conclusion that there should be gender parity in these organizations which are mainly male dominated.
Employees behaviors in organizations have the potential to impact social, ecological and economic performance (Elkington,1997). Following the Global reporting initiative, there is increasing pressure on organizations to reveal their sustainability status (Willis,2003).This could also facilitate the image in front of various stakeholders. There is an increased call for response to ecological and sustainability issues so organizations need to train their workforce to adopt and engage in sustainable behaviors (Jarventaus,2007). Hence the understanding of socio-demographic factors that aid in sustainable behaviors at workplace can help organizations to improve training effectiveness. For instance training and education programs can be tailored to facilitate imbibing sustainable behaviors at workplace.

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