Demographic characteristics influencing financial wellbeing: A multigroup analysis

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Abstract

Studies indicate that the financial wellbeing of employees has a direct impact on their productivity and overall psychological wellbeing. The employee engagement initiatives organized by the information technology (IT) companies operating in India have also started focusing on the contributing aspects of financial wellbeing. In this context, the study attempts to understand the factors impacting the financial wellbeing of IT employees in India using confirmatory factor analysis (CFA). It utilizes well-established survey instruments to assess the impact of financial literacy, financial behaviour, financial stress on financial wellbeing. Structured equation modelling (SEM) is used to study the link between the determinants. The study also attempts to understand the role of demographic factors (age, gender, monthly income, job category, and work experience) in determining financial wellbeing through multigroup analysis. Data used for the analysis covers 237 employees working in the IT sector. While financial literacy and financial behaviour have a significant positive impact on financial wellbeing, financial stress has a significant negative impact. Financial behaviour and financial stress were found to have a mediating role in the relationship between financial literacy and financial wellbeing. The demographic variables significantly moderate the relationship between the factors leading to financial wellbeing. The results show the need for financial wellbeing programs to focus on enhancing financial knowledge and improving financial planning. Further, it suggests offering customized financial wellbeing programs based on the employee's demographic characteristics rather than following a 'one program, fits all' approach.

Keywords: financial literacy; financial behaviour; financial stress; financial wellbeing; IT employees

1. Introduction

According to United Nations Population Fund (UNFPA), India has the longest demographic dividend in the world, a 50-year opportunity window spanning 2005-06 to 2055-56 (UNFPA, 2017). On an average, 62.5% of India's population is expected to be in the working age group of 15-59 years during this period. Policymakers are optimistic of this demographic dividend leading to economic growth and development. With a larger proportion of the population entering the workforce for the first time, it is essential to ensure that the growing income brings in a sense of financial security and wellbeing. Financial wellbeing is a state where a person is well equipped to fulfil the present and the future requirements of life, feel secure about the future, and be prepared to deal with unforeseen emergencies in the future (Prendergast et al., 2018). Hence, in addition to current income and savings, financial security also depends on the individual perception of future income, consumption and savings patterns (Joo, 2008). In this regard, an awareness of financial products, instruments and markets is essential to plan for future income and personal financial emergencies. Unfortunately, India lags in imparting financial education to its working class. Majority of the educated Indian employees remain ignorant about financial planning or financial wellbeing.

According to the Global Financial Literacy survey conducted by Global Financial Literacy Excellence Center, the average financial literacy rate among the BRICS countries, considered the major emerging economies, is only 28% of adult population. Even among the BRICS countries there is disparity, with financial literacy rates ranging from 24% in India to 42% in South Africa. The financial literacy rate of India is the lowest compared to other major emerging economies (Klapper et al., 2015). The Financial Literacy Survey conducted by the National Center for Financial Education throws up more interesting facts about the level of financial literacy in India (NCFE, 2020). At a national level, only 33% urban and 24% rural respondents were found to be financially literate. Gender wise, the financial literacy among male respondents was 29% as against 21% among female respondents. Of all the age category, the 18-29 age-group was found to be the most financially literate. It was also found that there was a relationship between education and income levels and financial literacy: lesser the education and income levels, lesser is the financial literacy. The main category of employment leading in financial literacy were the Government employees, followed by private employees, retired persons, self-employed and students. Low

levels of financial literacy are linked with unproductive spending, poor financial planning, high-priced borrowing and weak debt management. In the dynamic and evolving economic landscape, the individuals need to become progressively more responsible towards their spending and investing behaviour. With increasing life spans and the plethora of financial products available, the individuals would need to make a greater number of financial decisions over their lifetime. When these developments comingle with lower financial literacy levels, signal to policy makers the need to elevate financial literacy in the country. RBI has taken many steps to enhance financial literacy level and inclusion in India. A blueprint for national strategy of financial education was planned and released.

For achieving a higher economic growth, financial literacy gains importance since there are several studies and explanations of how higher financial literacy levels translate to higher wealth in the society. Financial literacy is associated to better returns on investments, more investments in complex asset classes and better financial planning among the youth. Also, financial literacy is strongly correlated with a better capability to deal with emergency expenses and other economic shocks.

Financial literacy has a positive impact on financial behaviour. The absence of a healthy financial behaviour is one of the contributing factors to financial stress. This is particularly relevant in the current scenario as the pandemic and related job losses have increased the financial stress of working individuals. The shrinking employment prospects, unsteady income and the subsequent reduction in the purchasing power, and rising cost of living, have increased financial stress. The Employee Financial Wellbeing Survey 2021 by PwC uncovers that 63% of workers maintain that there has been an increase in their financial stress since the beginning of the pandemic (PwC, 2021). These results are consistent with the findings of another survey conducted by an online wealth management service provide, Scripbox. Financial health during the pandemic was chosen as a primary contributing factor to stress levels by 46% of the respondents, second only to concerns on physical health (54%). In addition to the pandemic, financial illiteracy leading to overspending on credit, too many borrowings (debt), and lower savings are some of the major contributors to the financial stress among individuals. Financial stress impacts an individual's physical health, psychological condition, personal life and workplace productivity (Joo, 1998; Shim et al., 2009).

Financial wellbeing of an employee plays a key role in their happiness, satisfaction, and performance at work. Employees who are facing financial concerns are less likely to be engaged and motivated and more likely to change jobs more frequently to get the best compensation possible. The fact that employees are ill-equipped to make the best use of their remuneration is, hence, a concern for organizations. Considering the consequences of financial ill-health, organizations need to impart financial knowledge and inculcate healthy financial behaviour among employees. These awareness programs could reduce financial stress and improve wellbeing, while improving workplace productivity.

To design effective financial wellbeing programs, it is essential for organizations to understand the dynamics of and the factors contributing to the financial wellbeing of their employees. One of the pioneers in testing a conceptual model for financial wellbeing were Porter and Garman (Porter, N. M. & Garman, 1993). They studied the effect of demographic factors such as gender, ethnicity, education, employment status, and dependents, along with income and wealth perceived attributes like income and wealth and gauged the attributes of financial well-being. Their study proved that the demographic factors have an impact on financial well-being. Further studies have shown the impact of financial literacy, financial behaviour and financial stress on financial wellbeing (Brüggen et al., 2017; Gerrans et al., 2014; Joo & Grable, 2004; Sabri & Juen, 2014). These researchers also stressed the importance of demographic factors in determining financial wellbeing.

The existing research considers demographic variables as one of the contributing factors of financial wellbeing, along with literacy, behaviour and stress. In this study we investigate the influence of demographic factors in interaction between literacy, behaviour, stress and wellbeing. The authors argue that imparting financial literacy might not have uniform impact on financial behaviour and stress levels across multiple demographic groups. Demographic factors could influence the impact of financial behaviour on financial stress levels. Further, it could also impact the extend by which literacy, behaviour and stress would lead to financial wellbeing. This study explores the impact of demographic factors on literacy, behaviour, stress and wellbeing using multigroup analysis in SPSS Amos. The conceptual framework is a moderated mediation model with financial behaviour and financial stress as the mediating factors and demographic factors as the moderating variable.

The primary data required for the study was collected from information technology (IT) workers based in India. The IT industry contributes nearly 8% of India's GDP and the exports from the industry are projected to reach $150 billion during 2021. The sector is also one of the largest employers with an approximate workforce of 4.5 million. The industry has remained resilient during the pandemic year 2020, hiring 138,000 new employees (IBEF, 2021). Most of these employees are young graduates who have technical education. They do not have any formal or informal knowledge about financial planning. The results of the study would help IT companies in India design customized financial wellbeing programs for their employees, rather than following a 'one size, fits all' approach.

The article is structured into six sections namely, literature review, methods, results and discussion, implications of findings, and conclusion. The next section covers the theoretical framework, conceptual model, hypotheses and relevant literature on the topic.

2. Literature Review

2.1 Theoretical background

Several theories explaining employee motivation and productivity were found relevant in establishing grounds for this study. A brief description of these theories and their underlying assumptions is presented below.

2.1.1 Maslow's Hierarchy of Needs theory

Maslow's hierarchy of needs theory explained motivation in terms of an individual's five basic needs namely, psychological, safety, social, self-esteem and self-actualization (Maslow, 1943). Maslow argued that the individual's behaviour will be influenced by the internal pressures created in meeting these basic needs. According to his progression principle the individual needs follow a hierarchical order i.e., the fulfilment of lower need-levels is essential before moving on to higher levels. The financial wellbeing of an individual falls in the lowest two levels – psychological and safety. According to Maslow's theory, the motivation of an individual to achieve the higher level of needs is dependent on his ability to provide for his personal and family needs. This feeling of financial security would depend on his income level and its effective management to attain long-term and short-term goals.

Modern theories on employee wellbeing propose an extension of employer responsibility to fulfilling the needs of an employee (Nielsen et al., 2017). Beyond providing salaries to the employees, employers have the additional responsibility of educating their employees on effectively managing their financial resources. In the absence of such a support mechanism, stress levels of employees increase leading to low productivity. The wellbeing of employees is essential for the success of any enterprise (Page & Vella-Brodrick, 2009).

2.1.2 Life-cycle Theory

According to the life-cycle theory, an individual's consumption depends on expected earnings, in addition to current income (Modigliani & Brumberg, 1954). Modigliani further extended this theory to explain how consumption and savings depend on the individual's position in the life cycle (Modigliani, 1980). According to this theory, the young workers entering the workforce would have low consumption and low (or possibly negative) saving rates. As income increases during the middle-age years, the consumption and savings rate increase. This pattern continues till retirement when consumption drops during a period of low income. Retirement is also linked to negative savings rates. This cycle of income during an individual's life-cycle necessitates building adequate savings during the high-income period to maintain lifestyles post retirement. This is relevant especially for the IT workers in India as they maintain high lifestyles during their working years and is bereft of pension income post retirement. In addition, India being a growing economy the cost of living is steadily increasing with time. Hence, there is an urgent need to educate IT employees to plan and manage financial resources. Life-cycle theory propose financial literacy which could lead to improved financial behaviour and lower financial stress for employees. Research indicates that all the three factors have a significant impact on the financial wellbeing of employees (Agarwal et al., 2015; Brüggen et al., 2017; Osman et al., 2018).

2.1.3 Personal Financial Wellbeing and Worker Job Productivity

According to this conceptual model, the demographic characteristics of an individual i.e., gender, age, income, number of dependents and education influence financial wellbeing (Joo, 1998; Joo & Grable, 2004). The model also reinforces the importance of financial literacy and behaviour in determining financial wellbeing. Financial literacy is linked to the knowledge of financial products and markets. Financial behaviour shows whether the individual follows the desirable behaviour patterns recommended as best practices. This typically includes maintaining moderate debt levels,

paying bills, having an emergency fund etc. Researchers have linked positive financial behaviour to financial literacy (Sayinzoga et al., 2016; Sevim et al., 2012). In addition to literacy and behaviour, the model introduced the concept of financial stress caused by life-cycle events, job-related or any other unfavourable financial situations. The magnitude of financial stress will be adversely impacted by the individual's lack of financial knowledge, undesirable financial behaviour, and demographic factors. Financial stress was also shown to have a significant negative impact on financial wellbeing. Joo's argued that financially stressed employees will be more dissatisfied with their pay and have lower productivity levels.

Joo's conceptual model gives adequate theoretical support to incorporate demographic characteristics in modelling financial wellbeing. Based on the above theories, this study aims to extend understanding of factors contributing to financial wellbeing of employees. In particular, it attempts to answer the pertinent question "does the impact of financial literacy, behaviour and stress on wellbeing depend on the demographic factors of the individual?" The results of this study will help IT employers design customized financial wellbeing programs for their employees based on their demographic characteristics.

2.2 Literature review: Determinants of financial wellbeing

Financial wellbeing is a complex multidimensional construct conceptually based on various objective and subjective indicators (Joo, 2008; Sayinzoga et al., 2016; Sevim et al., 2012). Early empirical studies on financial wellbeing focused on objective indicators such as income levels, debt, savings and assets (Rutherford & Fox, 2010). However, recent studies have highlighted the importance of subjective measures in assessing financial wellbeing of individuals (Delafrooz & Paim, 2011). These factors include perceived ability to meet expenses, satisfaction with one's financial condition, stress about debt, and perceived ability to manage debt and savings. Researchers agree that the subjective factors shed light on an individual's financial stress or satisfaction, which is difficult to achieve using objective measures alone (Diener et al., 2008; Gerrans et al., 2014).

A different approach to understanding the factors leading to financial wellbeing based it on the behavioural traits of individuals (Rutherford & Fox, 2010; Yin-Fah et al., 2010). This line of research covers financial behaviour such as understanding products, attitudes to savings, and the process followed to manage financial resources. A healthy financial condition was defined as one with low

debt, active savings, and planning for retirement. It was argued that the inability to manage finances is detrimental and contributes to financial stress (Garman & Forgue, 2014). Empirical studies also indicate that practicing positive financial behaviour leads to greater satisfaction of financial situation (Joo & Grable, 2004; Kim et al., 2003).

Subsequent research has combined financial literacy and financial behaviour to study the financial wellbeing of individuals covering geographies and stages of life-cycle (Kempson et al., 2005; Sabri et al., 2008; Sabri & Juen, 2014). Researchers have shown the dependency of financial behaviour on financial literacy in personal finance (Courchane & Zorn, 2005; Kempson et al., 2005). There is a general consensus on the positive influence of financial knowledge on better financial behaviour e.g., planning ahead for retirement (Lusardi & Mitchell, 2007), investing in the stock market (Christelis et al., 2010), diversifying investment (Abreu & Mendes, 2010) and accumulating wealth (Stango & Zinman, 2009). Empirical studies have shown financial literacy to be linked to lower probability of mortgage payment delays (Fornero et al., 2011) and lower delinquency rates (Agarwal et al., 2015). It has also been reported that households scoring low in financial literacy are more likely to face difficulty in paying back their loans (Disney & Gathergood, 2011). Sabri and Juen supported the earlier findings and argues that the lack of financial knowledge, limits financial practices, and hence, may lead to financial problems thereby lowering financial wellbeing (Sabri & Juen, 2014).

The general agreement amongst researchers is that an individual's financial knowledge and healthy financial behaviour leads to financial satisfaction, while the lack of it leads to financial stress (Joo & Grable, 2004). Financial stress influences an individual's psychological wellbeing, quality of life and work productivity (Kim et al., 2003). While lower levels of financial stress could provide motivation to improve productivity, higher levels can be detrimental to the individual's wellbeing. Garman argues that financial education can help improve the financial stress levels of workers (Garman et al., 1999).

Based on the existing literature, the following hypotheses were proposed linking financial literacy, financial behaviour, financial stress and financial wellbeing

H1. Financial literacy has a positive impact on financial wellbeing

H2. Financial behaviour has a positive impact on financial wellbeing

H3. Financial stress has a negative impact on financial wellbeing

H4. Financial literacy has a positive impact on financial behaviour

H5. Financial literacy has a negative impact on financial stress

H6. Financial behaviour has a negative impact on financial stress

H1.1 Financial behaviour and financial stress have a mediating role in the relationship between financial literacy and financial behaviour.

2.2.1 Impact of demographic factors

In addition to financial literacy, financial behaviour and financial stress, demographic factors play a crucial role in influencing financial wellbeing (Brüggen et al., 2017; Gutter & Copur, 2011; Porter, N. M. & Garman, 1993). Various studies have included personal demographic characteristics such as gender, age, education, marital status, and presence of dependents, in their models of financial wellbeing (Joo & Grable, 2004; Malone et al., 2010). Cude's results showed that demographic factors such as age, years of experience, education, parental occupation, and an overall appetite for risk had a positive impact on financial literacy levels (B. Cude et al., 2006; B. J. Cude et al., 2016; B. J. Cude & Kabaci, 2012). Many researchers accept that demographic factors could play an important role in the context of financial wellbeing. For example, women have been consistently found to be more risk-averse than men (Barber & Odean, 2001; Finucane et al., 2000; Paul, 1987). Researchers have also reported that women seem to be consistently less financially knowledgeable than men (Lusardi & Mitchell, 2008). Even among equally knowledgeable groups, women are found to be more insecure about their ability to take financial decisions (BUCHER-KOENEN & LUSARDI, 2011). Age was also shown to have a significant effect on financial wellbeing (Binswanger & Carman, 2012), especially with many young professionals lacking the basic financial knowledge needed for making better financial decisions (LUSARDI et al., 2010). Similarly, income levels were found to have a positive influence on financial behaviour leading to higher savings rate (Beverly & Sherraden, 1999).

While earlier researchers included demographic factors as input variables in determining financial wellbeing of individuals, the recent literature shows how the demographic factors could affect the effectiveness of financial wellbeing interventions (Brüggen et al., 2017). However, the interaction

of demographic characteristics in the interaction between financial literacy, financial behaviour, financial stress and financial wellbeing has not been studied previously. This article attempts to close this gap in literature. Based on the theoretical framework, we propose the following hypothesis.

H7. Demographic factors moderate all the relationships between financial literacy, financial behaviour, financial stress and financial wellbeing.

2.3 Designing the conceptual model

Based on past literature, there are various factors which determine the financial wellbeing of employees, such as demographic (age, gender, income, job category, and work experience), financial literacy, financial behaviour and financial stress. The current research partially adopts the well-accepted conceptual model proposed by Falahati, Sabri and Paim (Falahati et al., 2012). This conceptual model considered the mediating role of financial behaviour and financial stress in explaining the impact of financial literacy on financial wellbeing. The model also proposed a relationship between financial behaviour and financial stress levels, as explained in the literature. The current study introduces the moderating effect of demographic factors (age, gender, monthly income, job category, and work experience) into the conceptual model proposed by Falahati, Sabri and Paim. The conceptual model used for testing the hypothesis is shown in Figure 1.

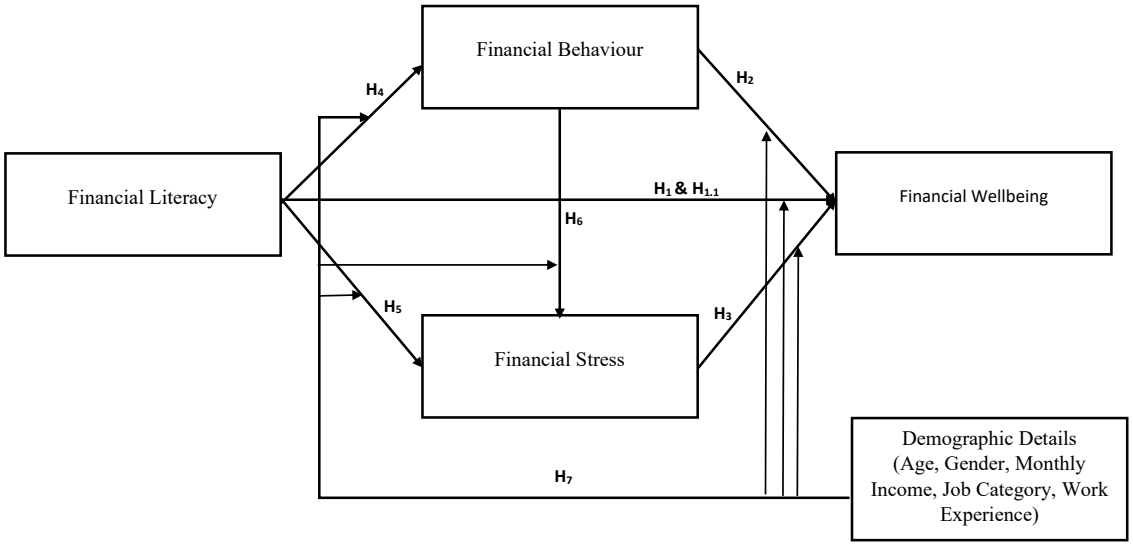

Figure 1. Conceptual model

3. Research Methodology

3.1 Sample and Data Collection

The hypotheses and conceptual model developed in this study were tested using the positivist approach. A quantitative methodology was adopted, and an online survey was designed to collect the responses from IT employees of Bangalore India. Accordingly, the online survey for the study was hosted online on Google Forms, and the link sent through WhatsApp, Facebook, Instagram and official email ids of the participants shortlisted for the survey. Since the 'open surveys' have lower response rates, we requested the participants to share the survey link in their contact network in the city to spread the word and achieve greater participation. Multiple follow-up reminders were sent through emails and social media posts to ensure adequate sample collection. Filters were used in the survey to ensure that only IT employees in India above 18 years of age participated in the survey. Bangalore was chosen as base for the research since it hosts people from diverse backgrounds and, thus, provides adequate representation of the robust Indian population. Further, it is the third most populous city in India, housing people with various socioeconomic differences and IT hub of the nation, making it ideal to generalize results to other cities in the country.

A total of 255 samples were collected, and after the data clearing process, 18 samples were removed due to missing values and multivariate outliers. The remaining 237 responses were used for final analysis. The survey participants were in the age group of 20-60, with majority of them between 20–30 age group (43%). Males accounted for 67% while females accounted for 33% of the sample. 64% of the survey participants were working in managerial positions and the remaining 36% were working in technical positions. The survey had a balanced participation across the monthly income levels less than INR.50000 (24%), INR.50001-75000 (20%), INR.75001-100000 (15%) and above INR.100000 (41%). In terms of years of experience, the survey had a larger participation from the new workers with less than 10 years of experience (57%), followed by 11-20 years (28%). 15% of the participated had more than 20 years of experience in IT industry. IBM SPSS 25 and AMOS 25 software packages were used to analyse the data.

3.2 Measures

A well-structured questionnaire was used to measure construct used in this research framework and the instrument was adopted from multiple previous studies. Financial wellbeing and the factors

influencing it were measured using a well-structured questionnaire. The instrument used for the study was adopted from multiple previous studies in the area (Fan & Henager, 2021; Parcia & Estimo, 2017; Yong & Tan, 2017). In the current study, the adapted survey instruments were applied to measure the factors impacting financial wellbeing. The present instrument is a self-administered scale consisting of 40 items (10 items per construct) and participants are asked to indicate on a seven-point scale (1-strongly disagree, 5-strongly agree) based on their level of agreement. The research constructs and indicators were presented in Table 1.

4. Results and Discussion

4.1 Measurement model

The maximum likelihood estimator was used to test the measurement model and structural model using AMOS 25. However, the present study violated the multivariate normality assumptions, with insufficient sample size to apply distribution-free estimation methods in IBM AMOS 25. Thus, to fix this issue, the maximum likelihood estimation with the bootstrap resampling method of 2000 samples (mostly widely used sampling size in bootstrapping technique) was used to obtain an accurate estimation of standard errors, as reflected in p values and confidence intervals (Arifin & Yusoff, 2016). The bias-corrected confidence the interval was set at the 95% confidence level.

Confirmatory Factor Analysis (CFA) is mainly used to define the factor structure of data. Since the instrument was adopted from previous studies and the factor structures were specified in the instrument, the exploratory factor analysis was not done, and CFA was used to confirm the defined factor structure (Brown, 2015). This study allows us to check the construct validity, as well as the reliability of the research instrument. The convergent and discriminant are the subtypes of construct validity. Cronbach's Alpha coefficient (α) was used to estimate the internal reliability of the instrument (Nunnally, 1975). Construct validity indicates that a questionnaire intended to assess a distinct construct (e.g., financial literacy) is estimating that construct. Convergent validity means variables are correlated adequately with each other within their parent constructs, and the latent factor is explained well by the observed variables. Conversely, discriminant validity of the underlying factor is adequately described by other variables than by its observed variables. Both validities are essential for optimum construct validity(Campbell & Fiske, 1959; Churchill, 1979). Composite Reliability (CR), Average Variance Extracted (AVE), and Maximum Shared Variance

(MSV) are a few measures that are mainly used for confirming validity and reliability (Bagozzi & Yi, 1988; Cronbach, 1951).

Table 1 shows that standardized loading estimates (β) was above 0.5 and, all the items were significant at 1%, and so we retained all the items. The Cronbach alpha coefficient for all constructs was more than 0.7 (Cronbach $\alpha > 0.7$). The properties of the measurement model were evaluated with composite reliability (CR) and convergent validity (Hair, J., Black, W., Babin, B., Anderson, 2014), exhibited in Table 2. All constructs exhibited CR with the minimum acceptable level of 0.7 ($CR > 0.7$), indicating excellent composite reliability. The AVE measure was assessed for the estimation of scales' convergent validity (Fornell & Larcker, 1981). The latent construct's Average Variance Extracted (AVE) values must be greater than 0.5 ($AVE > 0.5$) to explain on average at least half of the variance of indicators in the research (Hair et al., 2014). The AVE values (0.5) for all constructs were higher than normal levels, thus, supporting the convergent validity of the constructs (see Table 2).

Table 2 shows that MSV was less than AVE; the square root of AVE was greater than inter-construct correlations, thus, supporting the discriminant validity of the construct (Hair, J., Black, W., Babin, B., Anderson, 2014). These results support the validity of the constructs and reliability of the instrument. "χ^2/d.f ($2 < \chi 2/df \leq 3$), Comparative Fit Index ($.90 \leq CFI < .97$), Standardised Root Mean square Residual ($.05 < SRMR \leq .10$), and Root Mean Square Error of Approximation ($.05 < RMSEA \leq .08$) are used as indicative of good fit" (Hu & Bentler, 1999). These indexes are the most commonly published model fit indices. $\chi^2(1491.59)$/d.f (734)=2.03; CFI=.902; SRMR=.052; and RMSEA=.066; these results indicate that the measurement model is a good fit.

4.2 Hypothesis Testing

The study hypotheses are tested using structural modelling. Before testing the hypothesis, the model goodness of fit was assessed using the same model fit indices used in the above measurement model. The model possessed adequate goodness of fit with values for CFI = .915, RMSEA = .056, SRMR= .050 and $\chi^2(1273.31)$/d.f (727)=1.75. The standardized path coefficient (β) and the coefficient of determinant (R^2) for direct, indirect and multigroup models are presented in Table 3.

4.2.1 Direct effect

In this research, six direct paths were tested, and all paths are significant. Financial literacy positively influences financial behaviour (β=0.417, $p<0.01$) and financial wellbeing (β=0.289, $p<0.01$), negatively influences financial stress (β=-0.163, $p<0.05$). 17% of the variation in financial behaviour was explained by financial literacy directly. Financial behaviour was negatively influencing the financial stress (β=-0.167, $p<0.05$) and positively influencing financial wellbeing (β=0.196, $p<0.01$). Finally, financial stress negatively influences financial wellbeing (β=-0.432, $p<0.01$). Hence, we accept H1, H2, H3, H4, H5 and H6.

4.2.2 Indirect effect – Mediation of Financial behaviour and Financial Stress

The hypothesised model explains three indirect effects, and all three effects are significant. The negative impact of financial literacy on financial stress was partially mediated by financial behaviour (β=-0.07, $p<0.05$). Similarly, the positive effect of financial behaviour on financial wellbeing was partially mediated by financial stress (β=0.072, $p<0.05$). Finally, the impact of financial literacy on financial wellbeing was partially mediated by financial stress and financial behaviour (β=0.182, $p<0.05$). This effect was created by three different indirect effects (financial literacy→ financial stress → financial wellbeing; financial literacy→ financial behaviour → financial wellbeing; financial literacy→ financial behaviour→ financial stress → financial wellbeing). 8% of financial stress was explained by financial literacy and financial behaviour through direct and indirect effects. 45% of financial wellbeing was explained by financial literacy, financial behaviour, and financial stress through direct and indirect effects. The indirect effect results provide sufficient evidence to accept H1.1.

4.2.3 Moderation effect using Multigroup analysis

The multi-group analysis (MGA) was conducted to test for significant differences between identical models for different groups (demographics) using Amos graphics. The identified differences can be used to highlight the potential errors if subpopulations are considered as a single homogeneous group, by gaining insight into group differences, strategy implementation. In MGA, the structural model was estimated for both groups, including the path coefficients (β1, β2), and significance level and differences in path coefficients ($\Delta\beta$) are presented in Table 3. For this purpose, we used demographic variables as moderators (age, gender, monthly income, job category and work experience). We converted the age, monthly income, industry experience and nature of the job into dichotomous categorical variables. Age was classified into <30 and >30 years

old. Monthly income was converted into <10000 and >100000 group; similarly, industry experience was classified into <10 years and >10 years. Finally, the job category was classified into the managerial job and technical job.

For age, the negative impact of financial literacy on financial stress was significant only for the below 30 years group (β=-0.367; p<0.01) and for the above 30 years group, financial literacy is not affecting the financial stress (β=-0.046, p>0.05). However, the negative impact of financial behaviour on financial stress was significant only for the above 30 years old group (β=-0.351; p<0.01). Interestingly, the negative impact of financial stress on financial wellbeing was strong for the above 30 years group (β=-0.461; p<0.01). These changes account for 37% better explanation in the financial wellbeing for above 30 years old group. All other hypothesis links were the same for both groups.

For gender, the negative impact of financial literacy on financial stress was significant only for the female group (β=-0.351; p<0.05). However, the negative impact of financial stress on financial wellbeing was significant only for the male group (β=-0.348; p<0.01). All other hypothesis links were the same for both groups. These changes account for 3% better explanation in the financial wellbeing for the male group.

For monthly income, the negative impact of financial literacy on financial stress was significant only for above INR. 100000 income group (β=-0.400; p<0.01). The negative impact of financial behaviour on financial stress (β=-0.347; p<0.01) and the positive impact of financial literacy on financial wellbeing (β=0.326; p<0.01) is significant only for less than INR. 100000 income group. However, the negative impact of financial stress on financial wellbeing was significant for less than INR. 100000 income group (β=-0.453; p<0.01). All other hypothesis links were the same for both groups. These changes account for 30% better explanation in the financial wellbeing for less than INR. 100000 group.

For industry experience, the negative impact of financial behaviour on financial stress was significant only for the above 10 years experienced group (β=-0.271; p<0.05). The negative impact of financial stress on financial wellbeing was significantly strong for the above 10 years experienced group (β=-0.405; p<0.01). All other hypothesis links were the same for both groups. These changes account for 14% better explanation in the financial wellbeing for above 10 years' experience group.

For job category, the negative impact of financial literacy on financial stress was significant only for the technical employee group (β=-0.216; $p<0.05$) and the positive impact of financial behaviour on financial wellbeing was significant only for the technical employee group (β=0.218; $p<0.01$). The negative impact of financial behaviour on financial stress was significantly stronger for the technical employee group (β=-0.181; $p<0.05$). All other hypothesis links were the same for both groups. These changes account for 31% better explanation in the financial wellbeing for above 10 years' experience group.

Table 4 provides a summary of hypothesis testing.

5. Implications of Findings

5.1 Theoretical Implications

The study contributes to the literature on financial wellbeing and its relationship with demographic variables. It utilizes the theoretical concepts and frameworks available in the literature on financial wellbeing and includes the moderating role of demographic variables. Demographic factors were found to have a significant impact in the interaction of factors leading to financial wellbeing. The demographic factors introduced in the study namely, age, gender, monthly income, job category, and work experience are generic and hence, can be extended to any group of employees. The study thus extends the conceptual model proposed by Falahati and Sabri (2015). It also extends the existing literature on financial wellbeing onto a prominent sector in India. The existing literature on the moderating role of demographic variables have largely concentrated on gender. For e.g., females are found to be more risk-averse than males in financial decision making (Barber & Odean, 2001). This difference is partly explained in literature using the gap between the two genders in their understanding of financial products. The current study provides a deeper understanding of the moderating role of demographic variables.

5.2 Practical Implications

The results indicate that while designing financial wellbeing programs for their workforce, employers should be aware of socio-demographic factors and its influence on financial wellbeing. The study acknowledges the need to impart financial literacy to new employees joining the organization, especially in technical roles. Their educational background could be the reason for lack of financial knowledge. The results indicate that lack of financial literacy leads to a significant

increase in financial stress of these individuals. Having said that, exposing technical professionals to personal financial management during the early years of their career could help reduce financial stress. Incorporating financial literacy campaigns and workshops as part of the employee induction process could provide support and confidence to the newer professionals. The results also indicate that financial behaviour has a significant impact on the financial stress levels and financial wellbeing of technical professionals. Hence, in addition to creating awareness about financial products, they should also be guided on healthy financial practices such as paying bills, maintaining emergency funds, lowering debt levels, and balancing consumption and savings. This would help reduce their financial stress levels and lead to higher financial wellbeing.

As the results of the study indicate that financial literacy has a significant impact on financial stress for female employees, dedicated financial awareness campaigns need to be conducted for them.

For the higher age group (>30 years) and years of experience (>10 years), financial literacy has no significant impact on financial stress or financial wellbeing. The professionals of this age group would be aware of basic financial products available in the market. The primary factor determining their financial wellbeing is financial behaviour. For this group, improving their financial behaviour would significantly reduce their financial stress and improve their financial wellbeing. Above 30 years of age would also have dependencies which could naturally increase their stress levels and concerns about the future financial security. Employers should expose workers of this age group to financial products which could lower their financial stress. These products could include systematic savings plans, insurance schemes, and retirement plans. Improvement in their financial behaviour would have a significant impact on the financial wellbeing of this age group.

The findings show that the lower income group, i.e., earning less than 1 lakh per month, is another category whose financial wellbeing can be significantly improved through educational campaigns. For this group, financial wellbeing is directly influenced by financial literacy (positively) and financial stress (negatively). This group is also indirectly influenced by financial behaviour (positively). Similar to less than 10 years of experience, employees earning less than 1 lakh per month is an ideal target for awareness campaigns.

5.3 Limitations of the study

The study shows that the factors considered have different explanatory power for the various groups considered. The factors could explain only 19% of the variation in financial wellbeing of IT employees below 30 years, whereas it could explain 46% for above 30 age group. This provides motivation for further studies on understanding the factors influencing financial wellbeing of younger professional. For e.g., many studies have confirmed that family financial socialization has a significant influence on the financial literacy (Jorgensen & Savla, 2010) and financial behaviour (Gudmunson & Danes, 2011) of young adults. Similarly, the factors provided higher explanatory power for lower income group (47%) and technical professionals (54%) compared to higher income group (17%) and managerial roles (23%). Further studies could focus on the specific factors influencing financial wellbeing of these categories.

6. Conclusion

With shrinking employment prospects, unsteady income and the subsequent reduction in the purchasing power, financial wellbeing is gaining importance in India. The results of the study show the tight interplay of financial literacy, financial behaviour, financial fragility and financial wellbeing. Individuals with superior financial knowledge and exhibiting better financial behaviour would have lower financial fragility and higher financial wellbeing. Further, demographic factors have a significant impact on the interaction between factors influencing financial wellbeing. These results have important policy implications in designing programs, campaigns and strategies aimed at promoting financial wellbeing of IT employees. Future research can focus on extending the demographic variables to improve understanding of specific categories of employees.

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Appendix – Tables

Table 1. Confirmatory Factor analysis results

Statement	β
Financial Stress	
I have trouble paying my bills on time.	0.781
I am wondering how I can afford the medical cost in case of sickness or ailment.	0.693
I find it hard to provide all the needs of my family.	0.874
I am in daze every time my children/dependents inform me about their upcoming expenses.	0.854
I am unable to save for my future needs.	0.767
I have an unsettled problem with a collection agency.	0.784
I have trouble sleeping thinking about my financial condition.	0.857
I often experience high blood pressure thinking about how to make ends meet in terms of our family budget.	0.844
Too much worry over my financial state affects my focus at work.	0.785
My net pay is always not enough to cover my family's needs until the next payday	0.848
Financial Wellbeing	
I am satisfied with my current personal financial condition.	0.733
I am confident towards my retirement savings.	0.670
What I am earning is enough to sustain me until the next payday.	0.733
I can cope with all my regular monthly bills (children's education, utilities, etc.).	0.841
I have set aside emergency or rainy-day funds that would cover my expenses for at least three months in case of sickness, job loss, economic downturn, or other emergencies.	0.735
I have other sources of funds aside from my salary.	0.710
I can provide for my family and other personal basic needs.	0.810
I can regularly pay my credit card bills, mortgage, and other loan obligations.	0.724
I am earning more than what I spend.	0.769
I can acquire/purchase what I decide to.	0.672
Financial Literacy	
I am able to keep track of my money.	0.634
I am able to make ends meet.	0.723
I do shop around to get the best financial product such as loans or insurance rates.	0.806
I stay informed about financial issues.	0.720
I am aware of the benefits and protection of various forms of insurance.	0.665
I am aware of the importance of saving and how much should be set aside as emergency savings.	0.786
I do practice basic budgeting.	0.755
I can read and interpret financial statements.	0.679

I have knowledge of different investments like time deposits, money market, and stock market.	0.746
I have a good understanding of what is meant by interest rate and cost of money.	0.733
Financial Behaviour	
I pay my bills/loans on time.	0.754
I own a bank account which I update every month.	0.608
I pay in cash to purchase food and other basic needs instead of using a credit card.	0.861
I make sure to pay out all my outstanding credit card balance when it becomes due.	0.662
I carefully check the details of my bank statements/credit card bills.	0.728
I make comparisons before asking for loans or using credit cards.	0.725
I discuss with spouse on financial issue/ I ask sound advice on financial matters from others.	0.634
I involve my children/ family into the financial discussions.	0.672
I consider my financial situation before deciding to purchase anything.	0.816
I am very particular with how much I can save by carefully selecting items to purchase.	0.627

Table 2. Validity and Reliability Statistics

Constructs	Cronbach α	CR	AVE	MSV	1	2	3	4
1. Financial Stress	0.949	0.950	0.657	0.279	**0.811**			
2. Financial Wellbeing	0.922	0.924	0.550	0.279	-0.528**	**0.742**		
3. Financial Literacy	0.904	0.918	0.528	0.213	-0.225**	0.462**	**0.727**	
4. Financial Behaviour	0.907	0.911	0.509	0.173	-0.231**	0.415**	0.414**	**0.713**

Note: *p<0.05; **p<0.01; Diagonal value represent the square root of AVE

Table 3. Testing of Hypotheses

Path Name	Full sample		Age		Gender		Income		Experience		Job category	
	Direct effect	Indirect effect	< 30 years	> 30 years	Male	Female	< 1 lakh	> 1 Lakh	< 10 years	> 10 years	Managers	Technical
Financial Literacy → Financial Behaviour	0.417**		0.350**	0.352**	0.343**	0.352**	0.354**	0.347**	0.306**	0.344**	0.493**	0.374**
Financial Literacy → Financial Stress	-0.163*	-0.07*	-0.367**	-0.046	-0.02	-0.351*	-0.017	-0.400**	-0.177*	-0.214*	-0.029	-0.216*
Financial Behaviour → Financial Stress	-0.167*		-0.027	-0.351**	-0.044	-0.207	-0.347**	-0.017	-0.014	-0.271*	-0.171*	-0.181*
Financial Stress → Financial Wellbeing	-0.432**		-0.353**	-0.461**	-0.348**	-0.206	-0.453**	-0.344**	-0.345**	-0.405**	-0.259*	-0.484**
Financial Literacy → Financial Wellbeing	0.289**	0.182**	0.217*	0.332**	0.257**	0.355*	0.326**	0.214	0.264*	0.340**	0.246*	0.283**
Financial Behaviour → Financial Wellbeing	0.196**	0.072*	0.227*	0.164*	0.201*	0.215*	0.173*	0.226*	0.197*	0.190*	0.191	0.218**
R^2	0.45		0.19	0.46	0.27	0.24	0.47	0.17	0.22	0.36	0.23	0.54

**p<0.01; *p<0.05

Table 4. Results of hypothesis testing

Hypothesis					Accepted / Rejected
H1. Financial literacy has a positive impact on financial wellbeing					Accepted
H2. Financial behaviour has a positive impact on financial wellbeing					Accepted
H3. Financial stress has a negative impact on financial wellbeing					Accepted
H4. Financial literacy has a positive impact on financial behaviour					Accepted
H5. Financial literacy has a negative impact on financial stress					Accepted
H6. Financial behaviour has a negative impact on financial stress					Accepted
H1.1 Financial behaviour and financial stress have a mediating role in the relationship between financial literacy and financial behaviour					Accepted
H7. Demographic factors moderate all the relationships between financial literacy (FL), financial behaviour (FB), financial stress (FS) and financial wellbeing (FW).					
	Age	Gender	Monthly Income	Job Category	Work Experience
FL → FW	Rejected	Rejected	Accepted	Rejected	Rejected
FB → FW	Rejected	Rejected	Rejected	Rejected	Rejected
FS → FW	Accepted	Accepted	Accepted	Rejected	Accepted
FL → FB	Rejected	Rejected	Rejected	Rejected	Rejected
FL → FS	Accepted	Accepted	Accepted	Accepted	Rejected
FB → FS	Accepted	Rejected	Accepted	Accepted	Accepted