

Investigating the determinants of financial wellbeing: A SEM Approach

Abstract

Studies reveal that the financial wellbeing of employees has a direct bearing on their productivity and overall wellbeing. The wellness 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 paper explores the determinants of financial wellbeing of IT professionals in India. The paper utilizes confirmatory factor analysis (CFA) for the analysis. The study employs a survey questionnaire covering financial literacy, financial behaviour and financial fragility. It also attempts to recognize the influence of gender and job roles (technical or managerial) in ascertaining financial wellbeing. The sample data used in the study includes 237 professionals employed in the IT sector. The study uses partial least squared structured equation modelling (PLS-SEM) to understand the connection between the determining factors. The results indicate that financial wellbeing is positively influenced by financial literacy and financial behaviour while financial fragility has a substantial negative impact. The financial literacy and financial fragility are significantly different between technical and managerial roles. Gender appears to have a sizeable impact on the financial behaviour and financial fragility levels - women employees performed better in both the factors. Interestingly, financial literacy levels of the two genders are not significantly different. The results show that there is a need to focus on literacy, behaviour and fragility in financial wellness programs organized by the IT industry. Further, the study recommends offering tailored financial wellness training modules created based on the job levels and gender instead of following “one program, fits all” standardised approach.

1. Introduction

Financial wellbeing is a crucial component of the financial health of an individual. In the wake of covid-19 and the related job losses, the financial health has become a decisive issue confronting people from all walks of life. The rising commodity prices and living costs during the prolonged lockdowns have only exacerbated the concerns. With companies shutting operations for both short- and long- periods depending of their operations, the job-losses and pay-cuts have become the norm across industries. The expensive medical costs, rising inflation and threat of loss of income post pandemic has forced employees to take a hard look at their financial health. In addition to the pandemic, the emerging leanings in education, occupation and demographics, like the diminishing job security, increased number of women in workforce, rising divorce rates and single parenthood, are creating new-fangled tensions on financial decision-making by individuals (Malone et al., 2010).

Due to the complex financial markets and systems, the capability to make healthy financial decisions managing money has become more challenging. There has been support from the governments and corporates to help individuals to navigate through this maze (Lusardi & Mitchell, 2014). For instance, the security exchanges in India conduct financial literacy campaigns to introduce financial products for investment. Financially literacy is important as this allows individuals to make healthy financial decisions (financial behaviour), attain the financial

objectives and protect themselves from possible economic shockwaves and related risks (financial fragility). These factors would ultimately lead to their financial wellbeing, which is defined as a situation wherein a person is well-equipped to meet the current requirements of life and also in the future, feel assured about the future, and equipped to deal with unpredicted crises (Prendergast et al., 2018). Therefore, an improved financial wellbeing implies not only poverty alleviation but also have an effect on physical health and psychological condition of a individual (Mahdzan et al., 2020; Riitsalu & Murakas, 2019).

Researchers have considered various factors which adversely impact the financial wellbeing of an individual. These factors include undisciplined spending, inability to repay debt, absence of an emergency fund, low-income levels, and lack of knowledge of financial markets and products (Hakkio & Keeton, 2009). One of the prominent determinants of financial wellbeing identified in the literature is financial literacy (Parcia & Estimo, 2017). Financial literacy enhances the individual's ability to plan for future needs, both near-term (emergencies, healthcare etc.) and long-term (retirement planning). Moreover, researchers have established a direct link between financial literacy and financial behaviour (Hilgert et al., 2003). Lack of financial literacy cause overspending on credit, reliance on borrowings, lower savings and poor financial decisions (Braunstein & Welch, 2002). Poor financial behaviour and lack of financial knowledge raise the financial fragility of the individual (Taft et al., 2013). Increased financial stress further leads to detrimental impacts on the individual's professional and personal life (Friedline & Chen, 2021; Kim et al., 2003).

The financial wellbeing surveys conducted across countries indicate that an appreciable segment of the workforce is more concerned than ever about their current and future financial health. The surveys also give clear indication on how financial strain has become a distraction at work. For example, according to the 2021 PwC Employee Financial Wellness Survey (PwC, 2021), 72 percent of the millennials experienced enhanced financial stress due to the pandemic, of which 45 percent agreed it has reduced productivity. The survey also showed that 72 percent were attracted to companies which cared more about their financial wellbeing.

During these turbulent times, employers are attempting to address the welfare of their employees, financial wellbeing including. These include various financial wellness programs to address the financial stress of their employees including online workshops and counselling sessions, financial literacy campaigns, dedicated human coaches, and digital technology platforms. Multinational firms operating in India have followed a similar approach in enhancing the financial wellbeing of their employees. Investing in improving the financial well-being enhances the overall well-being of employees, thereby improving their physical and mental health, increasing productivity, and engagement. Hence, understanding the factors affecting the financial wellbeing of their personnel become critical for companies so as to design and offer an appropriate solution. It also becomes important to understand how the employee groups are different from each other so that customized solutions can be provided. Hence, this study addresses this gap in literature and attempts to understand the interaction of financial literacy, financial behaviour, and financial fragility on the financial wellbeing of professionals working in the IT sector. It further scrutinizes the impact of gender and job position on the above factors.

This study focuses on the IT industry as it is a prominent contributor to India's GDP, exports and employment generation. According to the industry trade association, NASSCOM, the IT sector generated US\$194 billion revenue in 2020, accounting for 8 percent of India's GDP. It also reported US\$136 billion in exports and provided direct employment to 4 million+ employees during the year. IT sector was chosen for the study considering its significant contributions in economic development and job creation. As the worker productivity and retention depend on employee wellbeing it is essential to understand the factors impacting the wellbeing of IT employees before devising wellness plans. This research aims to recognize the interplay of influencers of financial wellbeing of IT employees in the country. It attempts to answer the following questions – what are the different factors affecting financial wellbeing? and does the impact depend on characteristics of the employee and his/her job role? The findings will be of interest to IT employers in designing customized programs to their employees to address their financial wellbeing.

The paper is organised in five sections viz., literature review, research methods, findings and discussion and conclusion. The following section covers the theories and literature in financial wellbeing. The conceptual model and hypothesis built based on these theories and literature are also covered in this section.

2. Literature Review

2.1 Theoretical Framework and recent literature

Maslow's theory on motivation was found relevant in setting the framework for this study. According to this theory, actions of an individual are motivated by his needs (Maslow, 1943). Maslow classified these needs into five levels – psychological, safety, social, self-esteem and self-actualization. He argued that these needs take a tiered structure – the needs in the lower tiers need to be fulfilled before progressing to a need in a higher tier. According to this theory, the individual will act only to satisfy unmet needs i.e., the need will no longer be a motivator once that need level is satisfied. The financial health of an individual belongs to the lowermost levels i.e., psychological and safety needs. The gratification of this level of need is necessary before scaling up to higher levels of needs. In addition to the income level of the individual, the ability to have a safe livelihood would also depend on the effective management of their income. The responsibility to ensure the fulfilment of these needs of an employee would extend to the employer. Hence, employers' responsibility extends beyond offering salaries to training their employees on effective management of financial resources. It is noticed that the productivity drops and attrition rises if there is a lack of such support mechanisms.

Starting with Porter and Garman (Porter, N. M. & Garman, 1993; Porter, 1990), several researchers have tested conceptual models for financial wellbeing. The researchers examined the impact of demographic factors (ethnic background, educational qualifications, employment and gender) and attributes such as income level, dependents and wealth on financial wellbeing. The findings indicated that demographic factor and attributes evaluated significantly influence financial wellbeing.

The model of financial wellbeing built by Sabri et al. (Fazli Sabri et al., 2012) emphasized the mediating role of financial literacy. The results show the significant impact habits facilitating saving and socialization have on financial wellbeing. As a broader concept, financial literacy encompasses three areas: (1) understanding of the financial markets, instruments and regulations, (2) skills, and (3) attitudes (Kempson et al., 2005). Studies have used two distinct approaches to measuring financial literacy. One method to measure is by using objective tests of financial concepts and the other is based on the self-assessment of the understanding of financial topics by respondents themselves (Atkinson & Messy, 2012). In this study the researchers have used the self-assessment method to measure financial literacy.

Many studies have demonstrated that in personal finance, financial behaviour is dependent on financial literacy (Couchane & Zorn, 2005; Kempson et al., 2005). The general agreement among the researchers is that knowledge about financial markets and instruments led to a significant improvement in financial behaviour. The disciplined financial behaviour was found in detailed retirement planning (Lusardi & Mitchell, 2007) and asset accumulation (Stango & Zinman, 2009). The findings can also be extended to stock market investment (Abreu & Mendes, 2010; Christelis et al., 2010). It has also been affirmed that less financially literate households are more prone to have trouble in repaying their liabilities (Disney & Gathergood, 2011). Empirical studies have concluded that financial literacy has a significant negative impact on the probability of both payment delays (Fornero et al., 2011) and default rates (Agarwal et al., 2015) in mortgage payments. Brügger et al. (Brügger et al., 2017) reported that financial behaviour influences financial wellbeing, and financial behaviour is affected by several financial interventions, like financial education. Researchers also agree that financial skills and knowledge do have an influence on financial behaviour and financial wellbeing (Joo & Grable, 2004; Shim et al., 2009; Xiao et al., 2014). Extending the impact of financial literacy, researchers find that higher financial literacy are linked to lower financial in individuals (McCarthy, 2011). Based on the existing research, we expect financial literacy and financial behaviour to have a positive impact of financial wellbeing. Financial fragility is expected to have a negative impact on financial wellbeing.

In addition, researchers have also studied the impact of demographic factors on financial wellbeing (Brügger et al., 2017; Gutter & Copur, 2011; Joo & Grable, 2004; Porter, N. M. & Garman, 1993). Literature has also shown that the financial knowledge and behaviour of women are significantly different from men (Barber & Odean, 2001). In this study we consider gender and job levels (technical and managerial roles) as categorical input on which the input factors would depend on. Gender also has a major influence on financial wellbeing (Salignac et al., 2020).

According to the RAND Europe report 2021, there is a higher proportion of workers having financial concerns and there is a proven and well accepted association between financial concerns and mental health (Bousfield et al., 2021). Some of the challenges faced by workers that can lead to weak financial wellbeing are lower earnings and savings, credit card debt, and less affordable housing. The study underlines the urgent need to amend the financial wellbeing of, particularly young workers. A model place for such interventions is the workplace. Due to the difference between the requirements and characteristics of employees these interventions need to be personalized with modules specific to employee groups having similar characteristics. This is

reinforced by the existing literature on the impact of corporate policies on the financial wellbeing of employees (Salignac et al., 2020; Shim et al., 2009).

To the best of the authors' understanding, there is no study conducted to comprehend the factors influencing the financial wellbeing of the IT professionals in India. As this is a prominent industry for India, both in terms of its contribution to GDP and employability, this paper attempts to understand the influence of financial literacy, financial behaviour and financial fragility on the financial wellbeing of IT professionals in India using the conceptual model developed by Joo and Grable (Joo & Grable, 2004).

2.2 Designing the conceptual model

The study considers the direct impact of financial literacy, financial behaviour, and financial fragility and the indirect role of gender and job levels in determining financial wellbeing. The definition of financial wellbeing and its determinants are presented in Table 1.

Table 1: Components of the research model

2.3 Hypotheses

On the basis on the theoretical framework and literature review, the following hypotheses were proposed.

H1. Gender has no significant impact on financial literacy, financial behaviour and financial wellbeing.

H2. Job levels have no significant impact on financial literacy, financial behaviour and financial wellbeing.

H3. Financial literacy has no significant impact on financial behaviour, financial fragility and financial wellbeing.

H4. Financial behaviour has no significant impact on financial fragility and financial wellbeing.

H5. Financial fragility has no significant impact on financial wellbeing.

Therefore, our study applies the conceptual framework available in the literature to understand the determinants of financial wellbeing of IT employees in India. Our findings extend the existing literature onto one of the crucial sectors in India. We utilize the conceptual model derived from the existing literature, as shown in Figure 1. The model includes all the three key determinants of financial wellbeing i.e., financial literacy, financial behaviour, and financial fragility. In addition, we have also included gender and job levels to the conceptual model to understand their impact on financial wellbeing.

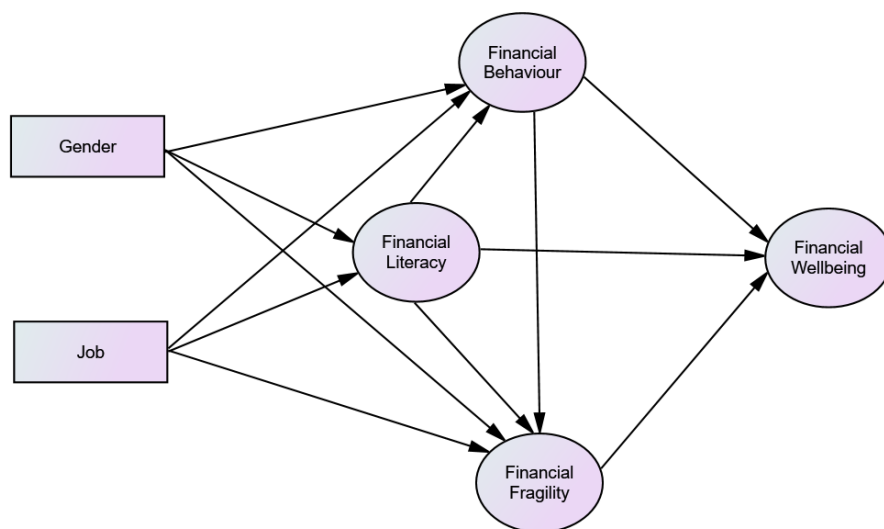


Figure 1. Theoretical model

3. Methods

3.1 Data

The study utilizes a quantitative approach to test the hypotheses and conceptual model. An online survey was utilized to collect the information from professionals working in the IT sector in India. Though the online platform allowed a broader reach, majority of the survey responders were based in Bangalore, the IT hub of India. The initial list of respondents was selected based on direct relationship with the researchers. Further participants were included via references from the initial sample. Responses were collected from professionals working in large IT companies with at least 50,000 employees. These companies included both listed domestic companies and Indian offices to multinational organizations (e.g., Oracle, IBM etc.). Large organizations were selected for the study as these organizations have structured human resource departments which focus on employee onboarding, training and long-term wellbeing. The findings of the study can be utilized to fine-tune the employee training modules within these organizations. Samples were collected from employees across different age groups and job position, covering both technical and managerial positions. The managerial positions included team lead, project lead and higher management roles involving supervision of the job functions of another person or a group of people. Technical roles are mostly individual contributors possessing specialized skills, working in a team under the supervision of a manager. Technical roles include designations such as software developer, tester and ERP consultant. The monthly income was also collected to understand whether the impact of FL on FW depends on the income levels. Data was collected during the period March to June 2021. 248 samples were collected of which 11 samples were found unfit for analysis due to missing values. The researchers considered the remaining 237 samples for the final analysis.

Out of the 237 respondents, 78 were female participants and 159 were male. 86 respondents were working in managerial positions, while 151 were working in technical role. Majority of the respondents belonged to 20-30 years; the distribution across age groups was as follows: 20-30

years (102), 31-40 years (73), 41-50 years (55) and >50 years (7). The distribution of respondents across the monthly income levels used for the study was as follows: <INR50k (56), INR50-75k (48), INR75-100k (36) and >INR100k (97). The income levels indicate that though managerial roles are supervisory positions, they do not necessarily pay higher than that of technical roles. The IT industry values technical professionals for their expertise in niche tools and technologies.

3.2 Instrument and measures

A survey questionnaire was used to measure the financial wellbeing and its determinants. Multiple studies previously done in this area have adopted the instrument used in this study (Parcia & Estimo, 2017; Yong & Tan, 2017). Participants specify their agreement with the statements on a five-point scale (1-strongly disagree, 5-strongly agree). The research constructs and indicators used to collect the information are presented in Table 2. Structural equations were built using IBM SPSS 25 and AMOS 25 software.

Table 2. Measures and indicators

4. Results and Discussion

4.1 Validity and reliability analysis

To test the hypothesis and conceptual model, structural equation model based on maximum likelihood estimator was employed, using AMOS 25.

Following the literature on research methodologies for survey-based studies, Confirmatory Factor Analysis (CFA) is used directly to confirm the factors, as there is sufficient evidence backing the scaled used (Brown, 2015). Before proceeding with CFA, the construct validity and reliability were validated. Validity is confirmed using both convergent and divergent approaches (Campbell & Fiske, 1959). The correlation of the variables with the parent construct is confirmed using convergent validity while discriminant validity confirms whether the variables are sufficiently uncorrelated with unrelated constructs. The internal consistency of the instrument is measure using Cronbach's alpha coefficient (α) (Nunnally, 1975). In addition, validity and reliability are confirmed using CR, AVE and MSV (Bagozzi & Yi, 1988; Cronbach, 1951). CR shows the composite reliability, AVE stands for average variance extracted and MSV is maximum shared variance.

As shown in Table 3, the standardized loading estimates (β) are above the threshold level (0.5) for majority of the variables. The composite reliability of the constructs is also confirmed as the Cronbach alpha coefficient is greater than 0.7. The measurement model is evaluated using CR and convergent validity (Hair, J., Black, W., Babin, B., Anderson, 2014). AVE measures used to validate the construct's convergent validity (Fornell & Larcker, 1981) should be greater than 0.5 (Hair, J., Black, W., Babin, B., Anderson, 2014). As shown in Table 4, the AVE values for all constructs are higher than the required threshold of 0.5. Table 4 also supports the discriminant validity of the constructs ($MSV < AVE$ and square root of AVE > the inter-construct correlations)

(Hair, J., Black, W., Babin, B., Anderson, 2014). Hence, the validity of the constructs and reliability of the instrument are supported by the above results.

Table 3. CFA loading and reliability

Table 4. Reliability and validity measures

Table 5. Goodness of fit indicators

The goodness of fit was checked using commonly accepted indicators such as $\chi^2/d.f$, NFI, CFI, GFI, SRMR and RMSEA. NFI and CFI are the normed and comparative fit index, respectively. GFI stands for the goodness-of-fit index. In addition, the residual measures are also used to check the goodness of fit. The measures used include standardised RMS residual (SRMR) and RMS error or approximation (RMSEA). The values for goodness of fit measures are shown in Table 5. According to researchers, acceptable range of these indicators for a good fit are as follows: $2 < \chi^2/df < 3$, $.80 < NFI < .95$, $.90 < CFI < .97$, $.80 < GFI < .95$, $.05 < SRMR < .10$, and $.05 < RMSEA < .08$ (Baumgartner & Homburg, 1996; Doll et al., 1994; Hu & Bentler, 1999). We conclude the measurement model has an acceptable fit.

4.2 Structural model

The goodness of fit of the model was examined before testing the hypothesis. The model reported moderate goodness of fit with GFI=0.746, NFI=0.779, CFI=0.875, RMSEA=0.065, SRMR=0.051, and CMIN/df=2.001. Figure 2 and Table 6 show the standardized path coefficients (β), error of prediction (e_1 , e_2 , e_3) and the coefficient of determination (R^2). The standardize path coefficient indicates the extend of effect the input factors have on the dependent variable.

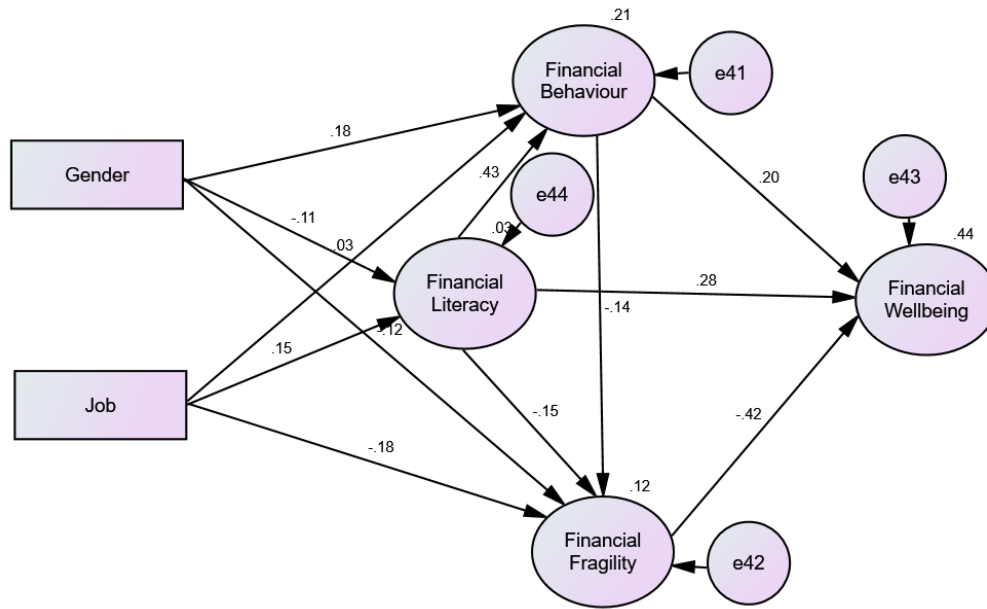


Figure 2: Hypothesized model

Table 6: Hypothesis Testing

4.3 Discussion of results

As shown in Table 6, gender and job level together explain 3 percent of the variations in financial literacy levels. The low R^2 shows that there are variables beyond gender and job level which could have an impact on financial literacy of IT employees. However, as the objective of this study is to understand the impact of gender and job levels on the financial literacy of IT employees and not to build a predictive model, we accept the low R^2 . The input variables of financial behaviour i.e., gender, job level and financial literacy, together explain 21 percent of its variations ($R^2=0.21$). Financial fragility depends on other factors in addition to gender, job level, financial literacy and financial behaviour as the R^2 is just 0.12. These factors could include personality traits, cultural background, financial stability etc. The results show that financial literacy, financial behaviour, and financial fragility can together explain 44 percent of the variations in financial wellbeing. This provides motivation to further understand the impact of these variables on financial wellbeing.

From Table 6, we can also conclude that gender has a significant impact on the financial behaviour ($\beta=0.182$) and financial fragility (-0.117) levels of IT employees in India. Whereas, the gender variable has no significant impact on the financial literacy levels of these employees. The standardized regression coefficients need to be interpreted keeping in mind that male gender has

been used as the base variable. The positive coefficient of gender on financial behaviour indicates that female IT employees have significantly better financial behaviour than male counterparts. This augurs well with the existing literature which shows that women being comparatively more risk averse exhibit better financial behaviour than men (Barber & Odean, 2001). Further, Indian women have also been shown to be more particular in making budget and keeping track of household finances (Arora, 2016; Rai et al., 2019). Though there is no significant difference between the two genders on financial literacy, the financial fragility of women IT employees is significantly lower than male counterparts. This has been explained in the literature using psychological models and social norms (Kadoya & Khan, 2020). India being a conservative country, men are expected to shoulder financial responsibilities and this might be enhancing their financial fragility.

The results also indicate that the job level also has a significant impact on some of the variables considered. The job level has a positive impact on financial literacy ($\beta=0.151$) and a negative impact on fragility ($\beta=-0.182$). Interesting, there is no significant difference in the financial behaviour of the two categories. The study classifies IT employees working in technical profiles as the base variable, while those working in a managerial capacity are coded 1. Using this coding criterion, we can interpret the positive relationship between the job level and financial literacy as follows: the IT employees working at managerial levels have significantly higher financial literacy levels than those working in technical levels. Considering organic progression from technical to managerial roles, the employees working in managerial levels are expected to have higher experience in handling finances. This experience could have exposed them to financial products, markets and instruments which could explain the difference in financial literacy levels between the two job categories. Similarly, the managerial level employees have significantly lower financial fragility levels than the technical staff. The relationship could be explained using the significant negative relationship between financial literacy and financial fragility ($\beta=-0.154$). The better knowledge of financial products and markets equips the managerial professionals to be better prepared for handling financial issues. This preparedness improved their financial fragility. This result is largely in consensus with the existing literature (Agarwal et al., 2015; McCarthy, 2011; Prakash et al., 2022) which rejects the hypothesis that higher awareness of financial products and markets has no impact on the fragility levels among working people.

The significant, negative impact of financial literacy on financial fragility is shown by the regression coefficient of financial literacy ($\beta=-0.154$) on financial fragility. Financial literacy has a significant positive impact on financial behaviour ($\beta=0.430$) and financial wellbeing ($\beta=0.284$). The results indicate that better awareness of financial products, systems and markets improves the financial behaviour and financial wellbeing of IT employees. As the literature indicates that financial wellbeing is a significant determinant of employee wellbeing (Netemeyer et al., 2018), these results provide support to incorporating financial literacy within the broader employee welfare campaigns. Such campaigns could also support in enhancing the financial behaviour of their employees since as per the findings of the study, financial behaviour has a substantial negative influence on financial fragility and a considerable positive influence on financial wellbeing. To put it in simpler terms, improving the financial behaviour of an IT employee reduces the financial stress while enhancing their financial wellbeing. This finding is again in consensus with the existing literature on working employees (Disney & Gathergood, 2011; Fornero et al., 2011). The

steps to improve the financial stress levels, i.e., lower financial fragility, is important as it has a significant, negative impact on financial wellbeing of IT professionals in India.

To conclude, the financial wellbeing of IT employees in India is significantly impacted by all the variables considered in the study. Financial literacy and financial behaviour have a substantial positive effect on financial wellbeing whereas financial fragility has a substantial negative impact. Hence, the IT companies based in India would need to design welfare campaigns targeting all the three significant determinants of financial wellbeing. Further, we understand that gender and job levels also play a significant role in determining the levels of the three base variables i.e., financial literacy, financial behaviour and financial fragility. Hence, there is a need to differentiate the campaigns based on gender and job levels. The practical and theoretical implications of the study are discussed in the following section.

5. Conclusion

This study attempted to understand the factors contributing to the financial wellbeing of professionals in the IT sector, one of the largest job providers, in India. The findings of the study indicate a close dependence of financial wellbeing on financial literacy, financial behaviour and financial fragility. Financially literate individuals demonstrate healthier financial behaviour resulting in lower financial fragility and superior financial wellbeing. Furthermore, gender and job level have a significant influence on the factors affecting financial wellbeing.

Financial wellbeing is shown to be a critical factor leading to overall wellbeing of employees. The results of this study have significant policy implications while devising programs, campaigns and strategies intended at advancing financial wellbeing of IT professionals, which could lead to long-term productivity enhancements and lower attrition levels. To the best of the authors' knowledge, this study is the first attempt to understand the factors contributing to the financial wellbeing of IT professionals in India. However, the authors are aware of the limitations of the study. The primary limitation of the study is that the sample used for the study is dominated by responses from the IT hub of India, Bangalore. IT sector has started extending to tier-two cities such as Ahmedabad, Mysore, Thiruvananthapuram, Pune, Coimbatore and Vizag. Post Covid-19 IT employees are also preferring to work in locations closer to their home town. The factors leading to the financial wellbeing of employees working out of the Tier-2 cities could be quite different from that of employees located in cities. Hence, the findings of this study cannot be extended to Tier-2 locations. Another limitation of the study is that it covers employees from large IT companies with at least 50,000 employees in India. These organizations have structured human resource departments which focus on employee onboarding, training and long-term wellbeing. IT industry in India also includes companies employing less than 10,000 professionals and start-up organizations working on niche sectors. However, these sub-sectors are not included in the current study. With start-up IT and fintech enterprises mushrooming in India, the financial wellbeing of their employees will be an interesting area of future research. Future research can also extend the limited number of demographic variables used in the study to include age, income levels, educational qualifications and number of dependents.

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