# WORK DESIGN AND WORK MEANINGFULNESS - WHAT MATTERS IN A CHANGING WORK ENVIRONMENT

**[1]DEVARAJAN R, [2]SHWETA MAHESHWARI, [3]VEENA VOHRA**

[1]SS&C GlobeOp
[2]SS&C GlobeOp
[3]NMIMS
E-mail: [1]devidbi@gmail.com, [2]zoomshweta@gmail.com, [3]veena.vohra@nmims.edu

**Abstract -** The Rapid pace of change in social, economic and technological spheres is impacting the nature of work in organizations. Concept of Work in new age organization setting is getting redefined as organizations are moving away from hierarchical structures to more flattened structure, fixed to flexible working hours, hoarded to shared information, command and control to engaging, empowering and inspiring leadership, on premise to cloud technology, silo and fragmented workforce to more engaged and connected workforce with work from anywhere options (Forbes, 2013). These changes have posed a challenge in creating meaningful work assignments and workplaces in the pursuit of consistently engaging employees. In this questionnaire survey based deductive study; we analyze the interaction between work design and work meaningfulness and the implication on organizations and individuals, in the context of the shifting nature of work. This study covered 61 professionals, in client facing and technology roles in a new age IT (information technology) multinational organization. We use validated scales to understand what matters in a changing work environment. Findings provide insights on components that can be integrated into work design to proactively manage work and make it meaningful for employees.

## I. INTRODUCTION

Work is a primary source of personal fulfillment and social inclusion and not just a means to achieve economic independence (Deloitte, 2018). Social, Economic and technology changes are impacting organizations as well as work within the organizations (PWC Report, 2017). These rapid discontinuous organizational changes have resulted in flatter organizational structures, broader span of control, self-managing work groups consisting of network structures (Deloitte, 2018). Complex, rapid, changing and competing business scenario; more informed, demanding and changing customer needs; economic shifts, disruptive innovations; radical thinking, scarcity of resources and heavy insurgence of technology, automation and artificial intelligence; (Pettigrew et al., 2001; Lee & Warner, 2001; Zhu & Warner, 2005; Poon & Rowley, 2010; Brownstein, Lipton & Katz, 2016; Forbes, 2016; PWC, 2018) has changed the nature of work.

Individuals are also concerned with the fundamental shift in world of work as they want to thrive, consider themselves equal to their supervisors and are keen to organize their working time according to their own desires (Deloitte, 2018). Extant literature claims that individuals have an inherent need for a meaningful work life (Steger et al., 2012; Arnold, Turner, Barling, Kelloway & McKee, 2007). Individuals who do not find their workplace meaningful and purposeful are not motivated to work to their capacity (Rosso, Dekas & Wrzeniewski, 2010).

Therefore, on one hand organizations need to redesign work to keep pace with the changes at work, on the other employees are in search for more meaningful experiences at work. This was particularly important for the new age information technology multinational organization where the study was conducted as work/tasks were evolving to cater to increased client demand, reduced delivery cycle times, improved quality achieved by developing, upgrading and deploying proprietary technology. These two roles; client service (understanding and providing solution to ever increasing client requirements) and technology (developing new solutions) were at the forefront of changing work requirements guiding the decision to choose the site.

Fairlie (2011) suggested that one of the ways to create meaningful work was to revisit employee job descriptions by drawing to tasks and activities that support the realization of individual's full potential. Therefore the focus of this research is to study what matters in changing work environment and interaction between Work Design and Work Meaningfulness. The study adds to the current body of research as work design and work meaningfulness have been studied in isolated manner and there are no studies exploring the interaction of Work Design and Work Meaningfulness in the context of changing nature of work.

## II. THEORETICAL FOUNDATION AND HYPOTHESES DEVELOPMENT

Review of past literature presents evidence that work and work design is associated with meaningfulness (Humphrey & Nahargang, 2007; Ryan & Deci, 2001). Two important concepts in domain of work are work design (organizational factor) and work meaningfulness (individual perceived). For this study, the link between work design and work meaningfulness is explained by review of extant literature in work design and work meaningfulness.

**Work Design**

Work design has been studied since long (Babbage, 1835; Smith, 1776; Gilbreth, 1911; Taylor, 1990; Hackman & Lawler, 1971; Hackman & Oldham, 1976; Herzberg, Mausner & Snyderman, 1959; Turner & Lawrence, 1965). It has been studied in context of motivation (Morgeson & Campion, 2003), employee attitude and wellbeing (Campion, Mumford, Morgeson, & Nahrgang, 2005), self-managing teams, empowerment (Lawler, Mohrman, & Benson, 2001), job satisfaction, performance, absenteeism, accidents, team innovation; company financial revenue, and more (Humphrey, Nahrgang, & Morgeson, 2007). The most cited is Hackman and Oldham's job characteristics model (Johns, Xie, & Fang, 1992; Morgeson & Humphrey, 2007; Roberts & Glick, 1981; Taber & Taylor, 1990) and remains central to work design theory (Humphrey & Nahargang, 2007). Many researchers state that there is a need to view work design theory with a radically different perspective warranting more research in this area (Bechtel, 1988; Kuhn, 1970; Laudan, 1978).

According to Hackman and Oldham (1976), five work characteristics make jobs more satisfying for workers: autonomy (i.e., the freedom an individual has in carrying out work), skill variety (i.e., the extent to which an individual must use different skills to perform his or her job), task identity (i.e., the extent to which an individual can complete a whole piece of work), task significance (i.e., the extent to which a job impacts others' lives), and feedback from the job (i.e., the extent to which a job imparts information about an individual's performance) leading to increased positive behavioral (e.g., job performance) and attitudinal (e.g., job satisfaction) outcomes, decreasing negative behavioral outcomes (e.g., absenteeism) (Humphrey & Nahargang, 2007). Humphrey & Nahargang, (2007) suggested task characteristics, workcharacteristics, social characteristics and interdependence as important constructs of work design. Thus work design and related characteristics, their relationships are worth examining in future research (Humphrey & Nahargang, 2007).

**Work Meaningfulness**

Meaningfulness is deeper level of intrinsic motivation (Chalofsky & Krishna, 2009). Meaning can refer to "life meaning, purpose, and coherence" (Ryff, 2000, p. 132). Meaningfulness is a construct grounded in Kahn's (1990) research and perspective on employee engagement. Extant literature suggests that meaningful work (and calling) positively correlates with a wide range of desirable well-being and work-related variables (Steger, 2011). In general, those who feel their work is meaningful report higher levels of well-being (Arnold et al., 2007), including more frequent positive emotions (Steger, Littman-Ovadia, Miller, Menger, & Rothmann, 2013; Steger, Pickering, Shin, & Dik, 2010), more positive self-image (Torrey & Duffy, 2012), more satisfaction with life (Douglas, Duffy, & Autin, 2016; Steger et al., 2010; Steger et al., 2012) and more meaning in life (Dik, Sargent, & Steger, 2008; Dik & Steger, 2008; Douglas et al., 2016; Steger et al., 2010; Steger et al., 2012).

Extant literature claims that individuals have an inherent need for a meaningful work life (Kotter-Grühn, Wiest, Zurek, & Scheibe, 2009; Seligman, Parks, & Steen, 2004; Sheldon, Elliot, Kim, & Kasser, 2001, Herzberg, Mausner & Synderman, 1959; Maslow 1943, 1954, 1971; McClelland, 1965; McGregor, 1960; Rogers, 1959). Individuals who do not find their workplace meaningful and purposeful are not motivated to work to their capacity (Rosso et al., 2010).

Research suggests that the ultimate goal of human beings is to pursue meaning in work and non-work lives (Ryan & Deci, 2001). Experiencing meaning may promote wellbeing and happiness (King & Napa, 1998; Zika & Chamberlin, 1992). Authors have suggested that experienced meaning is the critical mediator between life events and positive outcomes (Fredrickson, 2003) and that promoting intrinsic motivation is central to helping people achieve this meaning (Deci & Ryan, 2000). All of the motivational characteristics, which are theoretically and empirically linked to internal work motivation, should be expected to promote meaning (Humphrey & Nahargang, 2007). If employees are successfully moving toward goal accomplishment, experienced meaning will be enhanced (Humphrey & Nahargang, 2007). If employees have the ability to change their behavior if they are not moving towards goal accomplishment, it should promote experienced meaning and positive work outcomes (Humphrey & Nahargang, 2007).

Work design and Work meaningfulness was studied forty years back (Oldham & Hackman, 1976) and there have been calls by researchers (Morgeson & Humphrey, 2007) in more recent times to study the interaction between these two work related constructs. In addition work meaningfulness itself has been studied in context of many other variables but the not revisited to test interaction with work design, thus leading to research question of 'what is the interaction of work meaningfulness and work design' in context of changing work environment.

**Hypotheses Development**

Based on above discussion, the research framework for the study is represented below in Figure1. It suggests that work design has an impact on work meaningfulness. Work design is operationalized in the study, comprising task, knowledge, social characteristics and interdependence. Work meaningfulness can be measured in terms of positive meaning, greater good motivation and meaning making through work. Summing across these three

dimensions gives an overall work meaningfulness measure.

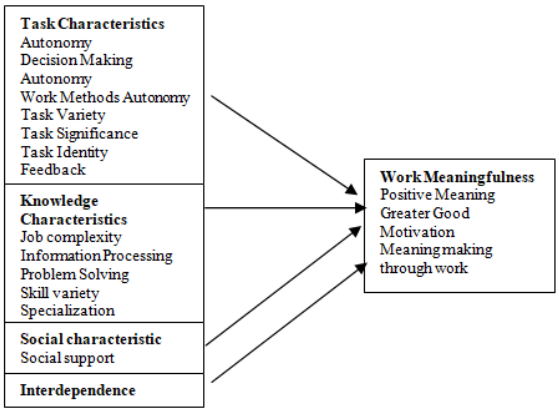



**Figure 1: Research Framework**

## Task Characteristics

Task characteristics refer to how the work itself is accomplished and the range and nature of tasks associated with a particular job (Morgeson & Humphrey, 2006).It consists of autonomy: which reflects the extent to which a job allows freedom, independence, and discretion to schedule work, make decisions, and choose the methods used to perform tasks (Breaugh, 1985; Wall, Jackson, & Davids, 1992; Wall, Jackson, & Mullarkey, 1995), task variety which refers to the degree to which a job requires employees to perform a wide range of tasks on the job (Herzberg, 1968; Lawler, 1969), task significance which reflects the degree to which a job influences the lives or work of others, whether inside or outside the organization (Hackman & Oldham, 1976), task identity which reflects the degree to which a job involves a whole piece of work, the results of which can be easily identified (Sims et al., 1976), feedback from job which reflects the degree to which the job provides direct and clear information about the effectiveness of task performance (Hackman & Oldham, 1976). Although employees in the IT organization have specific goals and tasks however, it is not known whether they consider their work meaningful. Hence, a null hypotheses is proposed to test whether task characteristics has significant effect on work meaningfulness.

**H1:** Task characteristics in work design has no significant effect on work meaningfulness

## Knowledge Characteristics

Knowledge characteristics refer to the kinds of knowledge, skill, and ability demands that are placed on an individual as a function of what is done on the job (Morgeson & Humphrey, 2007). It comprises job complexity which refers to the extent to which the tasks on a job are complex and difficult to perform (we focus on the "positive" aspect of complexity; the opposite is task simplicity; Campion, 1988), information processing reflecting amount of information processing needed at work reflects the degree to which a job requires attending to and processing data or other information, problem solving which refers to the degree to which a job requires unique ideas or solutions and reflects the more active cognitive processing requirements of a job (Jackson, Wall, Martin, & Davids, 1993; Wall et al., 1995), skill variety reflecting the extent to which a job requires an individual to use a variety of different skills to complete the work (Hackman & Oldham, 1980) and specialization reflecting the extent to which a job involves performing specialized tasks or possessing specialized (Campion, 1988). In today's knowledge economy and changing nature of work, job has become complex, employees need to continuously process information, solve problems, possess skill variety and work on specialized tasks (Deloitte, 2017) however it is not known whether these aspects create work meaningfulness for employees. Hence, a null hypotheses is proposed to test whether knowledge characteristics has significant effect on work meaningfulness.

**H2:** Knowledge characteristics in work design has no significant effect on work meaningfulness

## Social characteristic & Interdependence

Social characteristics comprise social support which refers to the degree to which a job provides opportunities for advice and assistance from others. This includes Karasek's (Karasek, 1979; Karasek, Brisson, Kawakami, Houtman, Bongers, & Amick, 1998) notion of supervisor and co-worker social support and the construct of friendship opportunities at work posited by Sims et al. (1976). Interdependence reflects the degree to which the job depends on others and others depend on it to complete the work (Kiggundu, 1980). As these characteristics and their effect on work meaningfulness has not been discussed much in prior literature, a null hypotheses is proposed to test effect of social characteristic& interdependence on work meaningfulness.

**H3** - Social characteristics and interdependence in work design has no significant effect on work meaningfulness

## Measuring Variables

To measure work design and work meaningfulness, related scales were identified from literature. There have been several studies on measuring work design however; most popular measure of Job Diagnostic Survey (JDS; Hackman & Oldham, 1980), multi-method Job Design Questionnaire (MJDQ) (Campion, 1988; Campion & Thayer, 1985), task interdependence characteristic (Kiggundu, 1983), revision of Job Diagnostic Survey (Idaszak & Drasgow, 1987), Job Content Questionnaire (JCQ)

(Karasek et al., 1998), Job Characteristic Inventory (Sims, Szilagyi, & Keller, 1976) and new scales of job design (Jackson, Wall, Martin & Davids, 1993). In this study, Morgeson & Humphrey (2006) scale of 'Work Design questionnaire' to measure autonomy, task variety, task significance, task identity, feedback, knowledge characteristics, social characteristics and independence has been used in this research was used as it was most relevant to the work related area of employees. The interrater reliability estimate for the constructs of this scale weres .98 and for the correlations were .97.

Work meaningfulness research presents diverse ideas about meaningful work and ways of assessing it (Steger et al., 2012). There have been many attempts to measure work meaningfulness (Job characteristics model by Hackman & Oldham, 1976; assessing a meaning dimension of empowerment (work is important, work is meaningful, job activities are meaningful) (Spreitzer, 1995), May, Gilson, and Harter (2004) brought slight variations on Hackman and Oldham's (1976) original work seeking responses about work being important and meaningful, and work/job activities being significant, worthwhile, valuable, and meaningful, Arnold, Turner, Barling, Kelloway, and McKee (2007) defined meaningful work ''finding a purpose in work that is greater than the extrinsic outcomes of the work'' (Arnold et al., 2007, p. 195), Ashmos and Duchon's (2000) assessed meaningful work as an important component of workplace spirituality, Meaning in Life Questionnaire (Steger, Frazier, & Oishi, 2006) measures meaning not specifically related to work, existential Meaning of Work Scale (Fairlie & Flett, 2004) uses items relating to work as inhibiting selfhood and work as enabling selfhood, Work Values Scale (Bu & McKeen, 2001) uses the extrinsic and intrinsic subscales, Work Preference Inventory (Amabile et al., 1994) uses items to measure both intrinsic and extrinsic motivation at work. Extant literature also has some qualitative research scales on work meaningfulness (Lips-Wiersma & Morris, 2009, 2011).

In this study WAMI scale (Work and Meaningfulness Inventory; Steger et al., 2012) is used to measure work meaningfulness as the scale is structurally sound representing important facets of meaningfulness. The scale consists of experiencing positive meaning in work, sensing that work is a key avenue for making meaning, and perceiving one's work to benefit some greater good. This scale is chosen as is in the original study conducted by (Steger et al., 2012).

**Sample**

The research questionnaire was administered to a random sample of 100 employees working in various client and technology related roles. A total of 61 responses were received, giving a response rate of 61%. Respondents were between the age group of 28 to 40 years and care was taken to ensure respondents had spent at least 2 years or more in the organization such that they had enough time to experience work characteristics present in the job. Data was collected on site over one to four days. Before taking the survey participants were briefed about the nature and purpose of research and were explained that they could ask if they did not understand meaning of any statement. Participants completed the survey within eight to twelve minutes.

**Site**

The site selected was an Information technology multinational organization with several employees working in technology and client related roles which had undergone changes over the years due to competition, technology, changing customer demands and changing workforce. These changes forced employees to focus on work done rather than work flow, asking questions rather than status quo, problem mindset to solution focus orientation and being agile and flexible rather than rigid. These changes required change in the work design in order to create meaningfulness and therefore thought appropriate to study what mattered in changing work environment and interaction between work design and work meaningfulness.

Descriptive statistics (frequency distribution, means and standard deviations) are used to develop a profile of the respondents and to summarize the variables. To better understand the relationships among the variables, correlation analysis is performed to generate the correlation matrix. Finally, to test the research hypotheses, multiple regression analysis is used. As there are multiple items of each construct, the average of multiple items is used in the multiple regression.

## III. RESULTS AND FINDINGS

**Descriptive Analysis- describe the sample characteristics**

Findings suggest that respondents feel their task characteristics is high on decision making autonomy, work methods autonomy, task variety, task significance, task identity, feedback (Average score greater than 3.5). Similarly, respondents feel knowledge characteristics of their work design comprise information processing, problem solving, skill variety, specialization however is low on element of job complexity (Average score of 3.36). Findings also suggest that employees feel their work is meaningful.

**Correlation Matrix**

The correlation matrix of variables is given in Table 1. As can be seen, within task characteristics, all measures of decision making autonomy are

significantly and positively correlated to positive meaning construct of work meaningfulness. Similarly, work methods are significantly and positively correlated to positive meaning construct of work meaningfulness. In addition, feedback significantly and positively correlated to positive meaning construct of work meaningfulness. Task identity and feedback are also significantly and positively correlated to making meaning through work construct of work meaningfulness. No other work design item has significant correlation with work meaningfulness. In addition, none of the work design construct has significant correlation with greater good motivation construct of work meaningfulness.

**Multiple Regression Analysis Results**

A total of five regression runs were performed for work meaningfulness with task characteristics, knowledge characteristics, social characteristics, interdependence as well as overall work meaningfulness. The multiple regression analysis results are summarized in Table 2. As shown in Panel E of Table 2, the regression model is significant (p value = 0.0000) and has an R-Square of 0.4368 (adjusted R-Square = 0.3966). That is, 39.66% of the variation in employee work meaningfulness can be explained by variation in task characteristics variable of the work design. The R-Square level is considered adequate as the objective of the model is to assess the direction and strength of the association between task characteristics and work meaningfulness, and not to predict work meaningfulness.

To test the three research hypotheses, the significance of the t-tests for the model coefficient is assessed. As shown, the p-value for 'task characteristics variable in work design' is 0.0000, which is highly significant. Hence the null hypotheses, H1 (Task characteristics in work design has no significant effect on work meaningfulness) can be rejected. In particular, the positive coefficient indicates that task characteristics of work design are associated with a higher level of work meaningfulness in the organization. The finding is consistent with the expectation. The null hypotheses, H2 (Knowledge characteristics in work design has no significant effect on work meaningfulness); H3 (Social characteristics and interdependence in work design has no significant effect on work meaningfulness), have been accepted. (H2 p-value 0.1097; H3 0.2284 and 0.8151 respectively). This study shows that these aspects may not lead to work meaningfulness amongst employees.

**Implications of findings**

The findings of this study provide useful insights which have not been reported in the past. Firstly respondents feel their work design is high on task characteristics with high mean score on decision making, autonomy, work methods autonomy, task variety, task significance, task identity and feedback. At the same time, multiple regression analysis shows that task characteristics have significant effect on work meaningfulness. This finding is in line with a priori literature which suggests that task characteristics are most common motivational work design characteristics (Campion 1988; Breaugh, 1985; Hackman & Oldham, 1976).

The correlation results also highlight that all measures of decision making autonomy are significantly and positively correlated to work meaningfulness. Decision making has been linked as an important aspect of autonomy by previous researchers (Wall, Jackson & Davids, 1992; Wall, Jackson & Mullarkey, 1995). This study confirms that decision making autonomy is an important element of work design to create work meaningfulness for employees. Organizations should design work for employees by creating opportunities to take decision in order to make work meaningful especially in IT companies where goals and priorities are constantly evolving, changing and employees work on projects in diverse teams where several decisions have to be taken to build technology solutions aimed at creating client delight.

Secondly, this study indicates that employees feel their work design is high on knowledge characteristics with high mean score on information processing, problem solving, skill variety and specialization. However, study shoes that knowledge characteristics have no significant effect on work meaningfulness. According to Campion & Mc Clelland (1993) distinguishing task and knowledge characteristics help identify whether demands on the job should be increased on task or knowledge area while redesigning job. This study suggests that it may not be appropriate to redesign job to increase demands on knowledge characteristics. Rather the design should focus more on task characteristics to increase work meaningfulness. This may be because extant literature suggests that knowledge characteristics are likely to increase number and level of knowledge, skills and abilities only (Campion & Berger, 1990).

Third, social support aspect of work design was also assessed in terms of its effect on work meaningfulness. Social support reflects the degree to which a job provides opportunities for advice and assistance from others including supervisor and coworker social support Karasek's (Karasek, 1979; Karasek, Brisson, Kawakami, Houtman, Bongers, & Amick, 1998) and the construct of friendship opportunities at work (Sims et al., 1976). This has not been studied traditionally in work design literature and investigated by Morgeson & Humphrey, (2007) by integrating other domains that suggested social

support was critical for wellbeing (Ryan & Deci, 2001; Wrzesniewski, Dutton, & Debebe, 2003), particularly for jobs that are stressful. Yet, this study suggests that social support has no significant effect on work meaningfulness even though it has high mean score representing presence of social support in employee work design with p value of 0.2284 which is not significant.

Fourth, prior research on work design emphasizes the need to consider wider range of work characteristics (Parker et al., 2001) such as interdependence (Kiggundu, 1983) however this study suggests that this may not have significant effect on work meaningfulness. Finally study shows that respondents felt they had high work meaningfulness in their current job. This may be because they also reported high task characteristics which have significant effect on work meaningfulness.

To summarize, task characteristics has a significant effect on work meaningfulness especially task identity which refers to degree which a job involves a whole piece of work, the results of which can be easily identified (Sims et al., 1976). Thus, for organizations to increase work meaningfulness, work should be designed in such a way that it involves completing a whole piece rather than fragmented work. Study also highlights high correlation between work meaningfulness and feedback which refers to degree to which the job provides direct and clear information about the effectiveness of task performance (Hackman & Oldham, 1976). The focus is on feedback directly from the job itself or knowledge of one's own work activities, as opposed to feedback from others resulting in enhanced knowledge of the results of the job (Hackman & Oldham, 1980).

## CONCLUSION

This study investigated the link between four measures of work design and work meaningfulness perceived by employees in a new age IT MNC working in various client and technology related roles. In particular it investigates whether a higher level of work meaningfulness is associated with various characteristics of work design. A questionnaire survey yielded 61 usable responses (response rate of 61%). Results obtained from multiple regression analysis indicate a significant and positive link between task characteristics of work design and work meaningfulness. This finding implies that task characteristics of work design can generate feeling of work meaningfulness amongst employees. It also indicates the importance of continued research in this area.

More important organizations need to concentrate on task characteristics in work design rather than knowledge, social characteristics or interdependence. Study highlights high correlation between work meaningfulness and task identity indicating employees should be provided complete piece of work and feedback directly from the job itself or knowledge of one's own work activities, as opposed to feedback from others to enhance work meaningfulness. This has been highlighted by seminal work conducted by Morgeson & Humphrey (2007).

The study also has few limitations. First, the sample may not be representative of the population and therefore findings may not be generalizable to different population. Second, a self-reported questionnaire was used in the study. Non response bias may come about when sampled subjects who are significantly different from respondents who do not respond. However the response rate of 61% may have mitigated this. Further, test results detect no indication of non-response bias which may occur due to respondent's background characteristics which is mitigated in the study by maintaining anonymity and confidentiality.

Third, variables investigated in the study are not meant to be complete or exhaustive and the scope of the study was restricted to work design and work meaningfulness variables. For example, dependent variable (work meaningfulness) is just one of the several organizational outcomes. Other variables future research can focus on are work centrality, job involvement, job satisfaction, employee engagement, calling and wellbeing. Similarly, independent variables are limited to work design.

Fourth, for the scope of this study, above scales have been studied in aggregation and separately in past research studies. In this study aggregated scores of work meaningfulness have been used. For work design, correlation for individual items of constructs have been studied to identify which aspect interacts more with work meaningfulness.

Finally, future researchers can look at conducting a similar study in different organizational, industry settings covering other organizational outcomes. In this study, overall meaningfulness is assessed. Future research can assess each variable of work meaningfulness to generate greater insights. Future research can also examine different ways in which organizations strive to create work meaningfulness for employees. Further, it is useful to study work meaningfulness in different countries to understand its antecedents and consequences from a global perspective.

## APPENDIX

| | X1 | X2 | X3 | X4 | X5 | X6 | X7 | X8 | X9 | X10 | X11 | X12 | X13 | X14 | X15 | X16 | X17 | X18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X1 | 1.00 | | | | | | | | | | | | | | | | | |
| X2 | 0.67 | 1.00 | | | | | | | | | | | | | | | | |
| X3 | 0.61 | 0.70 | 1.00 | | | | | | | | | | | | | | | |
| X4 | -0.03 | 0.34 | 0.36 | 1.00 | | | | | | | | | | | | | | |
| X5 | 0.32 | 0.32 | 0.25 | 0.36 | 1.00 | | | | | | | | | | | | | |
| X6 | 0.36 | 0.31 | 0.48 | 0.14 | 0.33 | 1.00 | | | | | | | | | | | | |
| X7 | 0.45 | 0.55 | 0.51 | 0.34 | 0.22 | 0.47 | 1.00 | | | | | | | | | | | |
| X8 | -0.31 | -0.10 | -0.25 | 0.11 | -0.12 | -0.25 | -0.10 | 1.00 | | | | | | | | | | |
| X9 | -0.13 | 0.23 | 0.16 | 0.64 | 0.27 | 0.04 | 0.26 | -0.18 | 1.00 | | | | | | | | | |
| X10 | 0.06 | 0.34 | 0.23 | 0.53 | 0.39 | 0.19 | 0.47 | -0.12 | 0.62 | 1.00 | | | | | | | | |
| X11 | 0.08 | 0.44 | 0.31 | 0.55 | 0.33 | 0.21 | 0.47 | -0.04 | 0.58 | 0.75 | 1.00 | | | | | | | |
| X12 | 0.23 | 0.35 | 0.33 | 0.39 | 0.25 | 0.42 | 0.46 | -0.11 | 0.25 | 0.58 | 0.61 | 1.00 | | | | | | |
| X13 | 0.26 | 0.49 | 0.25 | 0.24 | 0.25 | 0.13 | 0.38 | -0.11 | 0.15 | 0.29 | 0.40 | 0.15 | 1.00 | | | | | |
| X14 | 0.20 | 0.15 | 0.05 | 0.16 | 0.28 | 0.03 | 0.11 | -0.27 | 0.19 | 0.22 | 0.30 | 0.09 | 0.42 | 1.00 | | | | |
| X15 | 0.18 | 0.09 | 0.04 | 0.16 | 0.41 | 0.11 | 0.02 | -0.16 | 0.19 | 0.22 | 0.21 | 0.03 | 0.27 | 0.57 | 1.00 | | | |
| X16 | 0.10 | 0.14 | 0.03 | 0.17 | 0.24 | 0.13 | -0.01 | -0.16 | 0.24 | 0.22 | 0.04 | 0.06 | 0.17 | 0.30 | 0.54 | 1.00 | | |
| X17 | 0.31 | 0.46 | 0.44 | 0.34 | 0.24 | 0.33 | 0.35 | -0.14 | 0.42 | 0.42 | 0.35 | 0.24 | 0.35 | 0.11 | 0.29 | 0.41 | 1.00 | |
| X18 | 0.55 | 0.55 | 0.51 | 0.23 | 0.24 | 0.50 | 0.55 | -0.22 | 0.07 | 0.19 | 0.26 | 0.33 | 0.36 | 0.21 | 0.08 | 0.06 | 0.39 | 1.00 |

**Note: Correlation coefficients >=0.13 or <=-0.13 are significant at a 0.05 level of significance.**
**Legend: X1 = Work scheduling autonomy, X2 = Decision making autonomy; X3 = Work methods autonomy; X4 = Task variety; X5 = Task significance; X6 = Task identity; X7 = Feedback from job; X8 = Job complexity; X9 = Information processing; X10 = Problem solving; X11 = Skill variety; X12 = Specialization; X13 = Social Support; X14 = Initiated interdependence; X15 = Received interdependence; X16 = Interaction outside organization; X17 = Feedback from others; X18 = Work meaningfulness**

**Table 1: Correlation matrix of variables**

| **A. Work Meaningfulness (Overall)** | | | |
|---|---|---|---|
| Task characteristics | Coefficients | t Stat | P-value |
| Intercept | 0.5855 | 1.1174 | 0.2689 |
| Work scheduling Autonomy | 0.2668 | 1.9475 | 0.0568 |
| Decision Making Autonomy | 0.1447 | 1.0377 | 0.3041 |
| Work Methods Autonomy | -0.0654 | -0.4090 | 0.6842 |
| Task Variety | 0.0980 | 0.9737 | 0.3346 |
| Task Significance | -0.0717 | -0.6919 | 0.4920 |
| Task Identity | 0.3306 | 2.3412 | 0.0230 |
| Feedback from Job | 0.1460 | 1.3868 | 0.1713 |
| (R-square = 0.4921; Adjusted = 0.4250) | F = 7.34 | | |
| **B. Work Meaningfulness (Overall)** | | | |
| Knowledge characteristics | Coefficients | t Stat | P-value |
| Intercept | 3.1696 | 4.7803 | 0.0000 |
| Job Complexity | -0.1591 | -1.5615 | 0.1241 |
| Information Processing | 0.0261 | 0.1445 | 0.8856 |
| Problem Solving | -0.1163 | -0.6762 | 0.5018 |
| Skill Variety | 0.1397 | 0.8431 | 0.4028 |
| Specialization | 0.2481 | 1.6401 | 0.1067 |
| (R-square = 0.1550; Adjusted = 0.781) | F = 2.02 | | |
| **C. Work Meaningfulness (Overall)** | | | |
| Social characteristics | Coefficients | t Stat | P-value |
| Intercept | 2.3081 | 4.6879 | 0.0000 |
| Social Support | 0.3955 | 3.0034 | 0.0039 |
| (R-square = 0.1326; Adjusted = 0.1179) | F = 9.02 | | |
| **D. Work Meaningfulness (Overall)** | | | |
| Interdependence | Coefficients | t Stat | P-value |
| Intercept | 2.0753 | 3.8210 | 0.0003 |
| Initiated Interdependence | 0.2937 | 1.9266 | 0.0591 |
| Received Interdependence | -0.1158 | -0.8749 | 0.3854 |
| Interaction outside organization | -0.1153 | -0.9011 | 0.3714 |
| Feedback from others | 0.4290 | 3.4855 | 0.0010 |
| (R-square = 0.2152; Adjusted = 0.1591) | F = 3.84 | | |
| **E. Work Meaningfulness (Overall)** | | | |
| Overall | Coefficients | t Stat | P-value |
| Intercept | 0.9416 | 1.5450 | 0.1280 |
| Task characteristics | 0.8785 | 5.3439 | 0.0000 |
| Knowledge characteristics | -0.2371 | -1.6252 | 0.1097 |
| Social characteristics | 0.1521 | 1.2179 | 0.2284 |
| Interdependence | -0.0333 | -0.2349 | 0.8151 |
| (R-square = 0.4368; Adjusted = 0.3966) | F = 10.85 | | |

**Table 2 – Results of multiple regression analysis**

## REFERENCES


[1] Amabile, T. M., Hill, K. G., Hennessey, B. A., & Tighe, E. M. (1994). The Work Preference Inventory: assessing intrinsic and extrinsic motivational orientations. Journal of personality and social psychology, 66(5), 950.

[2] Arnold, K. A., Turner, N., Barling, J., Kelloway, E. K., & McKee, M. C. (2007). Transformational leadership and psychological well-being: the mediating role of meaningful work. Journal of occupational health psychology, 12(3), 193.

[3] Ashmos, D. P., & Duchon, D. (2000). Spirituality at work: A conceptualization and measure. Journal of management inquiry, 9(2), 134-145.

[4] Babbage, C. On the Economy of Machinery and Manufactures, London: Charles Knight, 1835. Economic Classics.
[5] Bechtel, W. (1988). Philosophy of Science: An Overview for Cognitive Science. Tutorial Essays in Cognitive Science (advisory editors: Donald A. Norman and Andrew Ortony).
[6] Breaugh, J. A. (1985). The measurement of work autonomy. Human relations, 38(6), 551-570.
[7] Bu, N., & McKeen, C. A. (2001). Work goals among male and female business students in Canada and China: The effects of culture and gender. International Journal of Human Resource Management, 12(2), 166-183.
[8] Campion, M. A. (1988). Interdisciplinary approaches to job design: A constructive replication with extensions. Journal of Applied Psychology, 73(3), 467.
[9] Campion, M. A., & Berger, C. J. (1990). Conceptual integration and empirical test of job design and compensation relationships. Personnel Psychology, 43(3), 525-553.
[10] Campion, M. A., & McClelland, C. L. (1993). Follow-up and extension of the interdisciplinary costs and benefits of enlarged jobs. journal of Applied Psychology, 78(3), 339.
[11] Campion, M. A., & Thayer, P. W. (1985). Development and field evaluation of an interdisciplinary measure of job design. Journal of Applied Psychology, 70(1), 29.
[12] Campion, M. A., Mumford, T. V., Morgeson, F. P., & Nahrgang, J. D. (2005). Work redesign: Eight obstacles and opportunities. Human Resource Management, 44(4), 367-390.
[13] Chalofsky, N., & Krishna, V. (2009). Meaningfulness, commitment, and engagement: The intersection of a deeper level of intrinsic motivation. Advances in Developing Human Resources, 11(2), 189-203.
[14] Deci, E. L., & Ryan, R. M. (2000). The" what" and" why" of goal pursuits: Human needs and the self-determination of behavior. Psychological inquiry, 11(4), 227-268.
[15] Dik, B. J., & Steger, M. F. (2008). Randomized trial of a calling-infused career workshop incorporating counselor self-disclosure. Journal of Vocational Behavior, 73(2), 203-211.
[16] Dik, B. J., Sargent, A. M., & Steger, M. F. (2008). Career development strivings: Assessing goals and motivation in career decision-making and planning. Journal of Career Development, 35(1), 23-41.
[17] Douglass, R. P., Duffy, R. D., & Autin, K. L. (2016). Living a calling, nationality, and life satisfaction: A moderated, multiple mediator model. Journal of Career Assessment, 24(2), 253-269.
[18] Fairlie, P. (2011). Meaningful work, employee engagement, and other key employee outcomes: Implications for human resource development. Advances in Developing Human Resources, 13(4), 508-525.
[19] Fairlie, P., & Flett, G. (2004, August). The existential meaning of work inventory: development and initial validation. In 112th Annual Convention of the American Psychological Association.
[20] Fredrickson, B. L. (2003). Positive emotions and upward spirals in organizations. Positive organizational scholarship, 163-175.
[21] Gilbreth, F. B., & Kent, R. T. (1911). Motion study. London: Constable.
[22] Hackman, J. R. (1980). Work redesign and motivation. Professional Psychology, 11(3), 445.
[23] Hackman, J. R., & Lawler, E. E. (1971). Employee reactions to job characteristics. Journal of applied psychology, 55(3), 259.
[24] Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. Organizational behavior and human performance, 16(2), 250-279.
[25] Herzberg, F. (1968). One more time: How do you motivate employees.
[26] Herzberg, F. M., & Mausner, B. (1959). B., & Snyderman, B.(1959). The motivation to work, 2.
[27] https://corpgov.law.harvard.edu/2016/02/10/Merger-and-acquisition Mergers and Acquisitions—2016, Posted by Andrew R. Brownstein, Wachtell, Lipton, Rosen and Katz, on Wednesday, February 10, 2016
[28] https://www.pwc.com/gx/en/services/people-organisation/workforce-of-the-future/workforce-of-the-future-the-competing-forces-shaping-2030-pwc.pdf
[29] https://www2.deloitte.com/content/dam/Deloitte/il/Documents/human-capital/FUTURE%20OF%20WORK_%D7%9E%D7%90%D7%99%D7%94%20%D7%91%D7%A8%20%D7%9C%D7%91.pdf
[30] https://www2.deloitte.com/content/dam/insights/us/articles/4322_Forces-of-change_FoW/DI_Forces-of-change_FoW.pdfWajcman, 2008, 2014
[31] Humphrey, S. E., Nahrgang, J. D., & Morgeson, F. P. (2007). Integrating motivational, social, and contextual work design features: a meta-analytic summary and theoretical extension of the work design literature. Journal of applied psychology, 92(5), 1332.
[32] Idaszak, J. R., & Drasgow, F. (1987). A revision of the Job Diagnostic Survey: Elimination of a measurement artifact. Journal of Applied Psychology, 72(1), 69.
[33] Jackson, P. R., Wall, T. D., Martin, R., & Davids, K. (1993). New measures of job control, cognitive demand, and production responsibility. Journal of applied psychology, 78(5), 753.
[34] Johns, G., Xie, J. L., & Fang, Y. (1992). Mediating and moderating effects in job design. Journal of Management, 18(4), 657-676.
[35] Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. Academy of management journal, 33(4), 692-724.
[36] Karasek, R., Brisson, C., Kawakami, N., Houtman, I., Bongers, P., & Amick, B. (1998). The Job Content Questionnaire (JCQ): an instrument for internationally comparative assessments of psychosocial job characteristics. Journal of occupational health psychology, 3(4), 322.
[37] Kiggundu, M. N. (1980). An empirical test of the theory of job design using multiple job ratings. Human Relations, 33(5), 339-351.
[38] Kiggundu, M. N. (1983). Task interdependence and job design: Test of a theory. Organizational behavior and human performance, 31(2), 145-172.
[39] King, L. A., & Napa, C. K. (1998). What makes a life good?. Journal of personality and social psychology, 75(1), 156.
[40] Laudan, L. (1978). Progress and its problems: Towards a theory of scientific growth (Vol. 282). Univ of California Press.
[41] Lawler, E. E. (1969). 3. Job design and employee motivation. Personnel Psychology, 22(4), 426-435.
[42] Lawler, E. E., Mohrman, S. A., & Benson, G. (2001). Organizing for high performance: Employee involvement, TQM, reengineering, and knowledge management in the Fortune 1000: The CEO report. Jossey-Bass.
[43] Lee, O.M. and Warner, M., 2001. Labour-markets in "communist" China and "capitalist" Hong Kong: convergence revisited. Asia Pacific business review, 8 (1), 167–191.
[44] Lips-Wiersma, M., & Morris, L. (2009). Discriminating between 'meaningful work'and the 'management of meaning'. Journal of business ethics, 88(3), 491-511.
[45] Lips-Wiersma, M., & Morris, L. (2011). Voicing Meaningfulness at Work. In Handbook of Spirituality and Business (pp. 324-333). Palgrave Macmillan, London.
[46] Maslow, A. (1954). Motivation and personality, New York: Harper
[47] Maslow, A. H. (1943). A theory of human motivation. Psychological review, 50(4), 370.
[48] Maslow, A. H. (1971). The farther reaches of human nature.
[49] May, D. R., Gilson, R. L., & Harter, L. M. (2004). The psychological conditions of meaningfulness, safety and availability and the engagement of the human spirit at work. Journal of occupational and organizational psychology, 77(1), 11-37.

[50] McClelland, D. C. (1965). Achievement-motivation can be developed. Harvard business review, 43(6),
[51] McGregor, D. (1960). The human side of management. NY: McGraw-Hill.
[52] Morgeson, F. P., & Campion, M. A. (2003). Work design. Handbook of psychology.
[53] Parker, S. K., & Axtell, C. M. (2001). Seeing another viewpoint: Antecedents and outcomes of employee perspective taking. Academy of Management Journal, 44(6), 1085-1100.
[54] Parker, S. K., Axtell, C. M., & Turner, N. (2001). Designing a safer workplace: Importance of job autonomy, communication quality, and supportive supervisors. Journal of Occupational Health Psychology, 6(3), 211.
[55] Pettigrew, A.M., Woodman, R.W., and Cameron, K.S., 2001. Studying organizational change and development: challenges for future research. Academy of Management journal, 44 (4), 697–713.
[56] Poon, I. H. F., & Rowley, C. (2010). Change in Asia: a review of management theory and research related to human resources. Asia Pacific Business Review, 16(4), 591-607.
[57] Roberts, K. H., & Glick, W. (1981). The job characteristics approach to task design: A critical review. Journal of applied psychology, 66(2), 193.
[58] Rogers, C. R. (1959). A theory of therapy, personality, and interpersonal relationships: As developed in the client-centered framework (Vol. 3, pp. 184-256). New York: McGraw-Hill Roberts & Glick, 1981
[59] Rosso, B. D., Dekas, K. H., & Wrzesniewski, A. (2010). On the meaning of work: A theoretical integration and review. Research in organizational behavior, 30, 91-127.
[60] Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. Annual review of psychology, 52(1), 141-166.
[61] Ryff, C. D. (2000). Meaning of life. Encyclopedia of psychology, 5, 132-135.
[62] Seligman, M. E., Parks, A. C., & Steen, T. (2004). A balanced psychology and a full life. Philosophical Transactions of the Royal Society B: Biological Sciences, 359(1449), 1379.
[63] Sheldon, K. M., Elliot, A. J., Ryan, R. M., Chirkov, V., Kim, Y., Wu, C., ... & Sun, Z. (2004). Self-concordance and subjective well-being in four cultures. Journal of cross-cultural psychology, 35(2), 209-223.
[64] Sims Jr, H. P., Szilagyi, A. D., & Keller, R. T. (1976). The measurement of job characteristics. Academy of Management journal, 19(2), 195-212.
[65] Smith, A. (1776). An inquiry into the nature and causes of the wealth of nations. London: W. Strahan & T. Cadell.
[66] Spreitzer, G. M. (1995). Psychological empowerment in the workplace: Dimensions, measurement, and validation. Academy of management Journal, 38(5), 1442-1465.
[67] Steger, M. F., & Dik, B. J. (2010). Work as meaning: Individual and organizational benefits of engaging in meaningful work. In Oxford handbook of positive psychology and work.
[68] Steger, M. F., Dik, B. J., & Duffy, R. D. (2012). Measuring meaningful work: The work and meaning inventory (WAMI). Journal of Career Assessment, 20(3), 322-337.
[69] Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The meaning in life questionnaire: Assessing the presence of and search for meaning in life. Journal of counseling psychology, 53(1), 80.
[70] Steger, M. F., Littman-Ovadia, H., Miller, M., Menger, L., & Rothmann, S. (2013). Engaging in work even when it is meaningless: Positive affective disposition and meaningful work interact in relation to work engagement. Journal of Career Assessment, 21(2), 348-361.
[71] Taber, T. D., & , E. (1990). A review and evaluation of the psychometric properties of the Job Diagnostic Survey. Personnel psychology, 43(3), 467-500.
[72] Taylor, F. W. (1998). The Principles of Scientific Management [1911]. Dover Publications, MineoIa, Nueva York.
[73] Torrey, C. L., & Duffy, R. D. (2012). Calling and well-being among adults: Differential relations by employment status. Journal of Career Assessment, 20(4), 415-425.
[74] Turner, A. N., & Lawrence, P. R. (1965). Industrial jobs and the worker: An investigation of response to task attributes. Harvard University, Division of Research, Graduate School of Business Administration.
[75] Wall, T. D., Jackson, P. R., & Davids, K. (1992). Operator work design and robotics system performance: A serendipitous field study. Journal of applied Psychology, 77(3), 353.
[76] Wall, T. D., Jackson, P. R., & Mullarkey, S. (1995). Further evidence on some new measures of job control, cognitive demand and production responsibility. Journal of organizational behavior, 16(5), 431-455.
[77] Wrzesniewski, A., Dutton, J. E., & Debebe, G. (2003). Interpersonal sensemaking and the meaning of work. Research in organizational behavior, 25, 93-135.
[78] Zhu, Y. and Warner, M., 2005. Changing Chinese employment relations since WTO accession.
[79] Zika, S., & Chamberlain, K. (1992). On the relation between meaning in life and psychological well□being. British journal of psychology, 83(1), 133-145.

★★★