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Aspects of Workers Satisfaction within the South African Construction Industry - Some Empirical Observations.

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Abstract: The construction industry is characterised by a lack of sustainable employment of its workers leading to a loss of knowledge capital and skills of senior workers and the failure to attract younger workers. Despite the existence of a range of intervention strategies used to assess the satisfaction derived by workers from various industries, little research has been undertaken to examine if these interventions can be applied to the South African Construction Industry. Thus the noted omission has been the motivation for this research project. The main aims of this paper are twofold; firstly, to identify the major variables affecting the relative aspects of work within the South African Construction Industry, secondly to compare how the satisfaction derived from work differs across the young and older workers. Through a survey of 65 South African workers within the Construction Industry, this study empirically refines and validates the 6 variables for measuring work satisfaction in the South African Construction. The study reports on the operational framework of the Relative Aspects of Worker Satisfaction Assessment Model (RAWSAM), which can be used to examine the levels of satisfaction factors relating to productivity. The findings indicate that the RAWSAM is reliable, valid and undimensional. This paper concludes by presenting the refined instrument which contributes to the productive intervention improvement tools and techniques as advocated within the literature and contributes to the organisation behaviour literature by validating the direct and indirect relations among the relative work aspects on productivity. The findings could be used to develop an improved quality of life model whose impact could be evaluated longitudinally in subsequent years.

Keywords: Construction Workers, Factor Analysis, South Africa, Worker Satisfaction, Questionnaires, Validation

1.0 INTRODUCTION

The main objectives of this paper are to identify the major variables affecting the relative aspects of work within the South African Construction Industry and to investigate the impact of age on the satisfaction derived from work. While there has been several worker satisfaction studies in various industries, a few of them are within the African context as the majority of the published literature focuses on the developed countries. Furthermore despite the existence of a range of intervention strategies used to assess the satisfaction derived by workers from various industries, little research has been undertaken to examine if these interventions can be applied to the South African Construction Industry. There are therefore two gaps in knowledge. First, there is a lack of study in the African, particularly South Africa, context. Second, the past studies have focussed on service and academia related organisations. This study had the aim of overcoming these two gaps to achieve the objectives stated at the start of this paper. The noted omission has been the motivation for this research project. The main aims of this paper are twofold; firstly, to identify the major variables affecting the relative aspects of work within the South African Construction Industry, secondly to compare how the satisfaction derived from work differs across the young and older workers. Through a survey of 65 South African workers within the Construction Industry, this study empirically refines and validates the 6 variables for measuring work satisfaction in the South African Construction. Furthermore, studies on impact of age, type of work and length of service in employment on overall workers satisfactions present mixed findings, with the main two schools of thought being the fact that there would be a difference between the levels of job satisfaction among the younger and older workers. The other school claiming that there is no difference between the different age groups. One reason for the contradictory results could be the lack of standardised measuring methods. (Eskildsen et al 2003). Accordingly, deciding on whether to use single or multiple-item

measures in the measurement of job satisfaction might be a key to the standardised measures (Oshagbem, 1999). In addition, most of the studies conducted are in large organisations and within the service and manufacturing industries. Thus the motivation for this paper is to address the identified omissions by reporting on the operational framework of the Relative Aspects of Worker Satisfaction Assessment Model (RAWSAM), which can be used to examine the levels of satisfaction factors relating to productivity within the South African construction industry context.

This paper concludes by presenting the refined instrument which contributes to the productive intervention improvement tools and techniques as advocated within the literature and contributes to the organisation behaviour literature by validating the direct and indirect relations among the relative work aspects on productivity. The findings could be used to develop an improved quality of life model whose impact could be evaluated longitudinally in subsequent years. Research investigating the factors affecting the satisfaction of workers within the construction industry was undertaken and part of the findings suggest the motivation factor of personal development ranked top among the satisfaction factors for both the young and older workers. The least ranked factor was the hygiene factor of relationship with workmates which had high levels of dissatisfaction (mean > 4.0). This paper presents the findings from part of the research which investigates the aspects of satisfaction within the South African construction industry. Its aim was to establish the major factors contributing to the satisfaction levels and inevitably the impact on productivity within the South African construction industry.

Five key elements which underline the impact of motivation and hygiene factors among the workers in the construction industry were identified and translated into research questions to operationalise the research. These were:

- i. What is the level of satisfaction relative to aspects of work within the construction industry?
- ii. What factors contribute to the implementation of change management within the construction industry?
- iii. Does the age of the workers influence their perceptions of the satisfaction levels?
- iv. Is the length of service in current employment related to the level of worker satisfaction?
- v. Does working within the construction industry lead to lack of alertness, poor self image, and lack of confidence, job dissatisfaction, indifference, dejection and poor recognition of abilities?

This paper outlines the research conceptual framework, methodology, and the steps in the development of the measurement instrument and analysis before presenting the research findings. In concluding, it suggests that in the main, age had no impact on the satisfaction levels; however working within the construction industry does not lead to negative image, lack of alertness, job dissatisfaction, indifference, dejection and poor recognition of abilities. There is hardly much resistance to change management issues within the industry. The benefits of working within the industry outweigh the advocated antecedents as identified in literature.

This paper aims to identify the major variables affecting the relative aspects of work within the South African Construction Industry and secondly to compare how the satisfaction derived from work differs across the young and older workers. The paper is structured as follows; first the research methodology adopted is explained, second an extensive literature review on the satisfaction measurement instruments is presented, with the main focus on the key concepts job content and job context factors. This is followed the advocated theoretical conceptual framework which summarises the process diagram for the triangulation approach adopted. Following on from the literature review, the stages undertaken in the development of the satisfaction measurement instrument are explained. The next section links the findings of the descriptive statistics derived from the validated instrument, and further examines and compares how satisfaction derived from work differs across the young and older workers. The discussion is on the satisfaction factors are made in section seven. The conclusions and further work are presented in the last section.

2.0 RESEARCH METHODOLOGY

The data collection instrument was a self-administered structured questionnaire. The final questionnaire comprises seven parts. The first part seeks background information about the respondents in terms of their age, length of time worked in the construction and the type of work. The second part deals with the impact of construction on the well being of the workers. The third part investigates the linkages between absenteeism and the occurrence of the illnesses identified in part two. Part four explores the improvements that can be made to the construction process. Part five investigates issues relating to the

satisfaction of workers. The impact of working in the industry is explored in part six, and finally factors affecting change management are identified in part seven. This paper reports on Part five and the issues surrounding the satisfaction of workers. Likert style rating questions, using a five-point scale, were used to elicit respondent's opinions on the relative satisfaction of several aspects of work. The scale intervals are interpreted as follows; 1 (excellent), 2 (very good), 3 (good), 4 (fair) and 5 (poor). The frequency of how often workers had been affected on the eight outcome factors were measured on a five likert scale from 1 (never), 2 (seldom), 3 (sometimes), 4 (often) and 5 (all the time). These process and outcome factors are shown in figure 1.0. In order to investigate the impact of age of the workers on their satisfaction levels, respondents were asked to specify their age, and the subsequent analysis grouped them into two categories of younger (less than 40 years) and older workers (more than 40). Davis (2004) used a similar classification in her job satisfaction survey among employees in small businesses. However other studies have taken a different classification, for example Kabacoff and Stoffey (2001) divided younger (25-35) and older (45-55). The rationale for the omission of the middle group (36-44) was to show the distinctive nature of the two age bands (Oshagbemi, 2004)

The exploratory and descriptive approach is used in this research. As asserted by Chileshe (2004), the exploratory stage is an extensive literature review on the management writing. For the purpose of this research, the exploratory study aimed at establishing the theory and concepts that underlie the satisfaction of workers in general. This can be equated to the first stage in the development and validation of a measurement instrument. Another objective was to review the existing modes of measuring worker satisfaction and examining whether this range of interventions can be applied to the South African construction industry. The research process can be identified as having three distinct phases, namely literature review, pilot study and phase three as the main study. The findings reported here are drawn mainly from an extensive literature review in phase one, the pilot study and the main study. In achieving the aims and objectives of this research, a robust methodology is being developed as part of an on-going process. This is encapsulated in conceptual framework for the study shown in Figure 1.

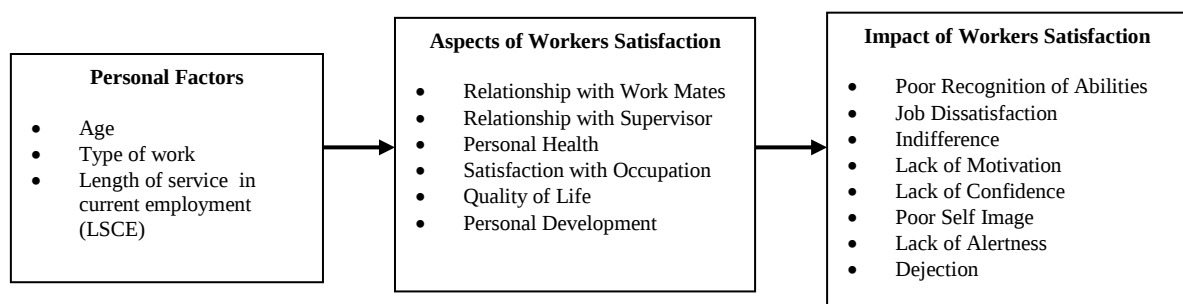


Figure 1.0: Conceptual framework showing the relationships of personal variables and work satisfaction (Adapted from Okpara, 2004)

3.0 LITERATURE REVIEW

Literature review indicates that a lot has been written about job satisfaction in various industries. The classification of research areas on workers satisfaction in general fall into the following themes: Prediction of psychological wellbeing in terms of workers health and job satisfaction (Love and Edwards; 2005), impact of corporate wellness on stress, satisfaction and absenteeism (Ho, 1997); linkages between organisational networking and cultural organising (Fletcher, 2002); impact of age on job satisfaction (Rhodes, 1983; Okpara, 2004, and Eskildsen et al, 2003); linkages between customer satisfaction and service workers perceived control (Yagil, 2002); barriers to empowerment (Greasley et al 2005); an empirical assessment of universal forms of work commitment (Freund and Carmeli, 2003); testing the applicability of Herzberg's two-factor theory in construction industry (Ruthankoon and Ogunlana; 2003). Within the South African context, Hinzelman and Smallwood (2004) investigated the underlying causes of declining productivity of site managers among general contractors. Oshagbemi (2000a) highlights the relevance of the topic of job satisfaction as it impacts the physical and mental well being of employees. The linkages between the length of service in employment and satisfaction have also been examined in the academia related organisations (Oshagbemi, 2000b).

Other studies have examined the organizational change process and employee behaviour (Robertson, 1994). Satisfaction with co-workers' behaviour has an impact on the overall job satisfaction. Oshagbemi (2000c) found gender to play an important role in the inter personal relationships. Although the research was drawn among the academic staff, lessons learnt can be tested for applicability across different

industries, more so in construction where work is team based. Motivation through monetary issues is also important as demonstrated by Oshagbemi and Hickson (2003). The study investigated the linkages between pay satisfaction and job satisfaction and found a strong positive relationship between pay satisfaction and gender. Holt et al (2000) provided an overview of the empowerment concept in the context of construction management. Their findings suggested that employees (or workers) cognitive growth controlled their fundamental behaviour towards their work environment. They further identified recognition as one of the characteristics of a construction-oriented empowerment system. Accordingly, it would act as a motivator, by placating the aspirations of individuals and rewarding enthusiasm for change and improved performance. However, the majority of the studies have focused on service and manufacturing industries within the developed economies. Although some studies are available within the African context and developing economies, the emphasis has been in the service industries and among managers. For example Okpara (2004) investigated the personal characteristics of job satisfaction among IT managers with the Nigerian context and found that the managers were satisfied with their job, co-workers and supervision whereas promotion and pay were found to be dissatisfies. Hinzelman and Smallwood (2004) although within the South African context focussed on site managers and identified feedback, self-fulfilment, and advancement /promotion as the top factors causing dissatisfaction amongst the employees. However, within the Construction industry, very studies are available notwithstanding the importance of the industry in terms of its contribution to the GDP and employment terms. For example Agumba et al (2003) observe that from the South African perspective, the construction industry contributes 3% to the GDP. Furthermore, due to the nature of the work which is very much team based factors such as relationship with co-workers and relationship with the supervisors are of great importance within the industry.

4.0 DEVELOPMENT AND VALIDATION OF INSTRUMENT

In this section a discussion of the measurement instrument construction procedure, the characteristics of the sample and the methodology for data analysis is presented and discussed.

4.1 Development of the measurement instrument

The importance of developing valid measures are articulated by several researchers (Nunnally, 1978; Saraph et al, 1989; Madu, 1998). Several dimensions of validity need to be addressed such as content validity, construct validity and criterion-related validity (Flynn et al, 1994). In order to achieve that, there are various steps to be considered in the instrument development process. Much of the earlier works in quality management such as Saraph et al (1989) adopted a 9 step approach. The steps taken in the development and validation of the RAWSAM are adopted from Sureshchandra et al (2002) seven step approach comprising the following:

- Step 1 Expound the theory and concepts that underlie a particular management philosophy
- Step 2 Design of survey instrument by careful selection of the representative items
- Step 3 Pre-testing of the instrument
- Step 4 Modifications, refinements and finalisation of the Instrument
- Step 5 Data Collection
- Step 6 Factor Analysis of Data
- Step 7 Proposed RAWSAM Measurement Instrument

According to Sureshchandar et al (2002), a critical aspect in the evolution of fundamental theory is the development of good measures to obtain valid and reliable estimates of the construct of interest. **Step 1** which deals with expounding the theory and concepts that underlie a particular management theory involved the review of literature and the identification of existing job satisfaction measurement instruments. This formed part of the exploratory phase in phase of the research design. This issue have been presented in the earlier sub sections. **Step 2** involved the design of the survey instrument by careful selection of the representative items. **Step 3** dealt with the pre-testing of the instrument, either objectively or subjectively by experts in the field. According to Chileshe and Watson (2004), this is defined as content validity which forms part of the confirmatory factor analysis. **Step 4** is addressed by the modifications (if any) to the existing satisfaction measurement instrument found in literature such as the Job Descriptive Index (Smith et al , 1969) , refinement and finalisation of the RAWSAM instrument which is provided for in the subsection dealing with the review of literature and existing instruments. Finally but not the least, **Step 5** dealt with data collection through a self administered questionnaire to 65 workers with the Western Cape province in South Africa. **Step 6** contains the three-stage continuous improvement cycle which according to Chen and Paulraj (2004) lies at the heart of the instrument development process and addresses the issues of Confirmatory Factor Analysis. This is equivalent to

scale evaluation process which entails items generation, scale re-development and scale evaluation. The following sub section describes the process undertaken to determine the requirements of the steps in the development process. The undimensionality which is a mandatory condition for construct validity and reliability checking is addressed through a measurement model not shown in this paper was specified for the two constructs identified as motivation and hygiene factors. Confirmatory factor analysis is run for all the constructs. Content validity at the item level measures the target or content domain which it is supposed to measure and as the instrument has been developed based on the Job Descriptive Index (JDI), therefore ensuring validity since the instrument has been previously tested in several studies ranging from manufacturing to services. The **reliability issues** are addressed through the following measures is used in this paper for the reliability tests namely; Cronbach Alpha; Kaiser-Meyer-Oklin (KMO) Sampling measure of adequacy; and Barlett's Measure.

4.2 Sampling Procedure

Because of the small sample, a measure of the sampling adequacy using the Kaiser-Meyer-Oklin (KMO) was carried out and the results obtained was a value of 0.576 with the Barlett's test of sphericity yielding an approximate chi square of 83.589 (df = 15, Sig = .000). It's recommended that the value of KMO should be greater than 0.5 if the sample is adequate (Field, 2000). The above result of 0.576 indicates that the sample was adequate for each factorial or "factor analysis" determination. The KMO statistic varies between 0 and 1, and is defined as an index for comparing the magnitude of the observed correlation coefficients to the magnitudes of the partial correlation coefficients and for the original matrix.

5.0 DISCUSSION OF THE FINDINGS

5.1 Respondents Profile

Table 1.0 show a breakdown of the construction workers who responded to our questionnaire. The table shows the distribution of the respondent's age, length of service in current employment and type of construction work previously done.

Table 1: Background of respondents

	Frequency	Percentage
<i>Age</i>		
Less than 40 years	37	56.9
40+	28	43.1
		100.0
<i>Length of service in current employment (LSCE)</i>		
Up to 1 year	22	33.8
> 1 - 2	6	9.2
> 2 - 3	4	6.2
> 3 - 4	6	9.2
> 5 - 10	12	18.5
<i>Type of Construction Work</i>		
Bricklaying	12	18.5
General Worker	29	44.6
Site Office	2	3.1
Concrete and Cement Mixing	2	3.1
Plumbing	1	1.5
Management	1	1.5
Technician	1	1.5
Carpentry and Joinery	6	9.2
Site Supervision	4	6.2
Block Laying	1	1.5
Electrical	2	3.1
Air Conditioning	1	1.5
Scaffolding	1	1.5
Painting	1	1.5
Total	64	98.5
Missing	1	1.5
Total	65	100.0

The information in Table 1.0 shows that the majority of the workers were young. The distribution of the length of service spent in the current employment shows that respondents included relatively newcomers to the construction industry who had spent less than one year (about 15 percent) to workers who had spent more than 10 years in the construction industry (about 19 percent). Table 2 also shows that the majority of the respondents had worked previously as general workers (about 44.6 percent) while a significant percentage (about 18.5 per cent) having worked previously as bricklayers. The relative few Plumbers, Managers, Technicians, and electricians appear to be a representative of these skills shortage of manpower in the South African construction industry.

Having provided the demographics of the respondents, the following subsection presents some of the definition of worker or job satisfaction as identified in the literature.

5.2 Definition of Worker Satisfaction

Before considering the issues around the aspects of workers satisfaction within the South African construction industry, it is necessary to define what is meant by the term "worker satisfaction". Oshagbemi (2003) identifies job satisfaction as an important attribute which organisations desire of their employees. Within the UK construction project manager's context, Love and Edwards (2005) define job satisfaction as a function of the match between the rewards offered by the work environment and the individual's preferences for those rewards. It has also being defined as positive affect of employees towards their jobs or job situations (Locke, 1976). The general consensus seems to relate to the environment and the employee.

The following subsection presents the results of the descriptive analyses and the confirmatory factory analysis which extracted the two factors.

5.3 Analysis Procedures and Results

All statistical analyses were undertaken using the statistical package for the social sciences 9SPSS) version 13. The age of respondents ranged from 18 to 65, with a mean of 38.306 (SD = 11.54). 56.9 per cent of the respondents were aged less than 40 years and classified as young, while 43.1 per cent were aged more than 40 and classified as old. The number of years worked in the construction industry ranged from 4 months to 40 years, with a mean of 10.74 (SD = 9.62).

Table 2: Descriptive Statistics and Communalities: Full Sample

Aspect of Worker Satisfaction	Full Sample				Principal Component Analysis	
	No	Mean	Std Dev	Rank	Initial	Extraction
HG ₁ = Relationship with Workmates	61	4.7705	0.52894	6	1.000	.315
HG ₂ = Relationship with Supervisor	61	4.0164	1.11791	5	1.000	.768
MF ₁ = Personal Health	61	3.4590	1.46713	4	1.000	.386
HG ₃ = Satisfaction with Occupation	61	3.3607	1.42633	3	1.000	.756
MF ₂ = Quality of Life	61	3.1311	1.37205	2	1.000	.749
MF ₃ = Personal Development	61	2.8548	1.61800	1	1.000	.701
Overall Satisfaction level		21.593				

Table 2 presents a frequency distribution and some statistics showing excellent and poor satisfaction of the workers with their aspects of work. It can be observed from the Table that almost 62.5 per cent of the workers though the Quality of Life was excellent, very good and good. This means that there appeared to be no widespread quality of life problems amongst the workers. This finding is very useful as workers perform various functions according to their trade which impact upon productivity. About 14.1 per cent of the respondents thought the quality of life was fair while about 23.4 per cent indicated poor satisfaction with the quality of life. This level of dissatisfaction is not extremely high. The mean rating on the quality of life was 3.11 and this result represents one of the highest rating (the lower the mean, the higher the rating of satisfaction). From Herzberg's view of motivation, the above six aspects of workers satisfaction can be grouped into the two categories of motivation and hygiene factors as follows; **Motivation Factors (MF)** are identified and categorised as follows: Personal Health; Quality of Life; and Personal Development whereas **Hygiene Factors (HF)** are represented by the following items; Relationship with Work Mates; Relationship with Supervisor; and Satisfaction with Occupation. The two factors or constructs identified are theoretically grounded in Herzberg et al (1959) work.

6.0 RESULTS OF EXPLORATORY FACTOR ANALYSIS

In this study, the number of the respondents (workers) is 65, and the number of variables relating to satisfaction is 6, which satisfies the criteria for a satisfactory factor analysis. The overall KMO value obtained was greater than the recommended one. Table 3.0 contains the statistics for each factor.

Table 3: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.226	37.107	37.107	2.226	37.107	37.107
2	1.449	24.154	61.261	1.449	24.154	61.261
3	.897	14.948	76.208			
4	.775	12.923	89.131			
5	.381	6.354	95.485			
6	.271	4.515	100.00			

According to the results of factor analysis, two significant factors were found. The first factor explains 37.107 per cent of the total variance and the second factor explains 24.154 per cent are indicated in table 3. The results of the factor analysis indicated the two factors extracted accounted for 61.26% of variance in responses. The constituent indicators of each of the two factors extracted are further explained within this paper. Using exploratory factor analysis, the 6 satisfaction items were re-organized into two common factors. The principle component method was employed. Two common factors are chosen to explain 61.26 percent of variances of the 6 items, since of their corresponding eigenvalues is greater than one as illustrated in Table 3. The variance explained by each factor is 37.107 and 24.154 respectively. The two common factors are named after the Herzberg's two factor theory namely Motivation Factors (MF) and Hygiene Factor (MF). The hygiene factors according to Carson (2005) in citing Schermerhorn et al (2000) relate more to the environment in which people work than to the nature of the work itself.

7.0 FACTORS IMPACTING ON THE WORKERS

Tables 4 and 5 presents a summary of the responses to the relative aspects of workers satisfaction and the factors impacting the satisfaction according to the age. Table 4 reports the comparison of the average rating (mean score), the ranking, and the standard deviation of the ratings of the workers satisfaction derived from the relative aspects of work. Table 5 presents the descriptive statistics of the factors impacting on the workers. The findings from the validated RAWSAM were used to generate the figures presented in Tables 4 and 5.

Table 4: Descriptive Statistics: Younger versus Older Workers Comparison

Aspect of Worker Satisfaction	Young Workers (< 40 years old)				Old Workers (> 40 years old)			
	No	Mean	Std Dev	Rank	No	Mean	Std Dev	Rank
Relationship with Workmates	37	4.7838 ^a	.4793	6	27	4.7037	.6085	6
Relationship with Supervisor	35	3.8857	1.183	5	27	4.2222	1.013	5
Personal Health	36	3.3889	1.439	4	27	3.5926	1.500	4
Satisfaction with Occupation	37	3.3514	1.585	3	27	3.4074	1.152	3
Quality of Life	37	3.3243	1.395	2	27	2.8889	1.311	2
Personal Development	35	2.9714	1.562	1	27	2.7037	1.705	1
Overall Satisfaction Level ^b		22.206				21.518		

Notes:^a Mean responses from the questionnaire, 1 = minimum (excellent), 5 = maximum (poor)

^bThe Overall satisfaction level is the summation of the six aspects of worker satisfaction

All the aspects of satisfaction were ranked equally by both group of workers based on their mean scores. However the younger workers were slightly satisfied than the older one respective to the relationship with the supervisor. The older workers had a slightly higher satisfaction level than the younger workers.

Table 5 reports on the results of the overall impact (content outcome) from satisfaction of younger and older workers. One finding from Table 5.0 is that Younger workers ranked poor recognition of abilities as the factor having the most negative impact whereas poor self image was least ranked (mean = 1.9412). Interestingly enough, the old workers ranked lack of motivation as the factor having the most negative

impact whereas 'Indifference' was least impacting on them. This indicates a consistent finding from the literature that age has an impact on the satisfaction derived from work and is directly correlated to motivation. The old workers became less motivated with time. Luthans and Thomas (1989) in their empirical study found some correlation between age and job satisfaction.

Factors such as recognition are an integral part of an empowerment system as advocated by Holt et al (2000). Ruthankoon and Ogunlana (2003) further observe that positive recognition occurs when employees are praised or their ideas are accepted. It's also suggested that empowered employees can lead to a reduction on the emotional strain (Greasley et al, 2005). However the limitations with the achievement of empowerment are also recognised by the authors. One reason put forward is the fragmented nature of construction work with an over reliance on virtual teams.

Table 5: Descriptive Statistics: Younger versus Older Workers Comparison

Factors (Effects or Outcomes)	Young Workers (< 40 years old)				Old Workers (> 40 years old)			
	No	Mean	Std Dev	Rank	No	Mean	Std Dev	Rank
Poor Recognition of Abilities	34	2.9118 ^a	1.264	1	28	2.2857	1.511	4
Job Dissatisfaction	34	2.6471	1.276	2	28	2.2500	1.506	5
Indifference	34	2.5588	1.236	3	27	1.9259	1.925	7
Lack of Alertness	34	2.5294	1.236	4	26	2.6154	1.444	1
Lack of Motivation	34	2.4412	1.284	5	26	2.1154	1.336	6
Dejection	34	2.4118	1.328	6	27	2.3571	1.339	2
Lack of Confidence	34	2.2647	1.214	7	28	2.2963	1.234	3
Poor Self Image	34	1.9412	1.532	8	28	1.9286	1.184	8
Overall impact ^b		19.706				17.7774		

Notes: ^a Mean responses from the questionnaire, 1 = minimum (never), 5 = maximum (all the time)

^bThe overall impact is the summation of the eight effects or outcomes

One of the three explanations provided was that older workers experienced increased pressures from factors such as changing technologies. Within the academia, Hickson and Oshaghemi (1999) discovered that in teaching job satisfaction decreases with age. The inference to be drawn is that although construction industry work by nature is very labour intensive, the same principles might apply. Furthermore, older worker workers can be presented with flexible post-career in constructions as the benefits to be gained are a lot. (Arrowsmith and McGoldrick, 1997)

8.0 LIMITATIONS

Some limitations of the research need to be acknowledged. The sample is relatively small (65), comparable to others studies that have looked at the worker satisfaction levels within the construction industry (Hinzelman and Smallwood, 2004.) within the South African context, as such it is not representative and the findings presented are not generalisable to a wider population of workers in the South African Construction Industry. However the findings represent a snapshot of the reality of the perceptions of workers relative to the satisfaction levels within the South African Construction Industry. Furthermore as demonstrated by Chileshe (2004), the use of quantitative approaches normally require a large number of cases representing the population of interest, in order to determine the statistical significance of results. Therefore, while the results cannot be generalised at this stage, further research should confirm the findings of this study. The second limitation is that the instrument has been validated by collecting data from workers of Construction-related organisations in a developed country such as South Africa. Due to this, there is a possibility of bias playing role in the outcome of the study. Therefore this study can be duplicated in other economies particularly the less developed ones within the African context.

9.0 CONCLUSION AND IMPLICATIONS FOR FUTURE RESEARCH

This research aimed to identify the major variables affecting the relative aspects of work within the South African Construction Industry and secondly to compare how the satisfaction derived from work differs across the young and older workers. In order to bridge the gap between Construction and the Service/Manufacturing industries, this study provides the South African related organization's with the practical assistance with the identification of factors which contribute to the welfare of employees and the productive intervention improvement tools and techniques. The paper attempted to improve on the

existing scale development, notable the Job Satisfaction Index, re-analysing its existing scales and modifying it to suit the South African construction industry. This was achieved by empirically testing the re-analysed or improved scales by calculating the levels of work satisfaction among the South African construction workers. By developing the Relative Aspects of Workers Satisfaction Assessment Model (RAWSAM). The added advantage of the **RAWSAM** is its notable strength; simple, generic, robust and logical.

The contribution of this paper can be summed up under the following areas; testing of instruments and contribution to theory building efforts. As asserted by Hinzelman and Smallwood (2004), the findings of Herzberg's two factor theory of motivation have not been replicated. Okpara (2004) further corroborates the testing of instruments with high reliability and validity originating in the west can be adopted and used in non-western cultures such as South Africa for example. The testing of the existing instrument to measure workers satisfaction levels or constructs typically developed using samples of large companies in well developed economies but in a less studied context such as Construction. Furthermore this study extends the work of such authors as Okpara (2004); Davis (2004); and Ruthankoon and Ogunlana; (2003) among others.

Despite the numerous studies on the job satisfaction instruments used in the manufacturing and service industries, they are no substitute for information about applicability of these empirical scales among the Construction workers. The findings also suggest that it addresses the limited effort in Construction industry by specifically refining the Job satisfaction constructs based on construction workers. It expands the effort of studying job and worker satisfaction across the developing economies and particularly within the African context. Although the descriptive statistics used in this research paper are taken from within the South African Construction Industry, the factors and range of intervention strategies used to assess satisfaction are universal and of interest to the Construction Industry in general. The findings of this study have shown that although both young and old workers ranked the relationship with work mates as being poor, age did have an impact on the effects of the aspects of work with older workers suffering from a lack of alertness and dejection as the two most ranked effects. These findings are consistent with those found in the literature. For example Okpara (2004) though his study focused on managers in the IT sector, age was found to affect the levels of job satisfactions. On the other hand, young workers felt their abilities were not being recognised and job dissatisfaction as the most negative impacts. One major implication emerging from this study is the challenge of finding ways of valuing contributions of both the younger and older workers within the construction industry. Oshagbemi (2004) provides support by asserting that age group differences impact on the ratings of both effectiveness and behaviour. Within the European content, Eskildsen et al (2003) found the relationship between age and job satisfaction to be u-shaped, however distinction has to be made between intrinsic work motivation and job satisfaction.

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