

Needs Theory and Employee Performance: A case study of employed PNG university graduates

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Abstract

Needs influence and motivate people to live a productive life in pursuit of happiness. This study explored the factors that influenced work performance of university graduates and the type of relationships these factors had. Literature reviewed indicated that unmet needs are motivators of human behavior. A fulfilled basic need drives people to achieve the next need and up towards self-actualization. For this research, a causal survey was done and looked at monetary and non-monetary needs and their impact on graduates work performance. Data was analyzed using Pearson's correlation coefficient method to determine relationships between needs and performance. Cross-tabulation was also used to inquire on other factors that effect relationship of the variables. The study found that; (1) there is a weak negative correlation ($r = -.26$) between satisfying unmet needs and employee performance of graduates, and (2) cultural and environmental experiences determine how graduates value their monetary and non-monetary needs which affect their performance levels. This concludes that more emphasis is needed to understand graduates in terms of their needs and prior experiences to achieve desired performance levels in organizations.

Key words: Needs, human behavior, employee performance, productivity

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Introduction

Integral human development stands has a significant part of society as humans strive for advancement in livelihoods. In fact the development of men has been a result of evolution and environmental changes over centuries. Today we have an averaged human who is technologically literate and cognitively matured to develop the world. The way humans think and behave results in the amount of work it performs and the benefits work produces to meet their needs in modern day workplaces.

The question of what motivates or affects the behavior of employee has long being asked and researched on. Many theories evolved on factors that influence employee performance. Psychologists have studied that needs and wants influence human behavior. Is it the common survival needs of people like food, water and air that determine good behavior? In the workforce, what is the need that drives high productivity? Does the environment of where people live and work affect behavior? The answers to these questions can be better answered in studying the way a person behaves and finding what influences that behavior.

This study was set to understand the factors that affect behavior and motivation of university graduates in an organization in Papua New Guinea. This research explored the factors that influenced graduate employee performance and observed that against the need theories. Needs theories developed by scholars are known to be the key behind much of the understanding of human behavior and in particular workplace and employee behaviors (Weiner, 1972).

Research objective

The study intended to:

- Explore and quantify the relationship between need theories and graduate employee performance; and
- Assess monetary and non-monetary variables that affect the need-graduate employee performance relationship; and,
- Identify other influential factors that also impact the cognition and behavior of graduate employees to perform in the workplace.

Relevance of study

This study is important to identify factors that influence employee performance and quantify the relationships. The results will be used to understand how an organization can understand its employees' motivational factors and need dynamics and move towards addressing those to increase productivity in workplaces. This will enable employees to achieve goals and objectives of an organization with limited resources.

Literature Review

The concept of needs, motivation, and employee performance gained wide recognition as an area of amplified research due to its significance to measure economic development across countries (OECD, 2008). Research has found important information that has improved processes and understanding of human behavior, methods of increasing productivity per capital and growth with human development theories and empirical data analysis (Lowry, 1971).

Let us review literature on need theories and employee performance while defining common terms in this study.

1. Need definition and theories

A need is an internal state that makes certain outcomes appears attractive. An unsatisfied need creates tension that stimulates drives within an individual to find particular goals that if attained will reduce the tension (Ball, 2013). Ward et al (2009) stated that the psychological definition of a need is that it is a trait that impels an individual to pursue a goal through an action that also gives purpose, meaning and direction for the behavior of the individual.

Needs theories development had its peak between 1930s and 1980. Most theories were on motivation and how it can be applied to drive the workforce into producing more output with less input. The theories

were All port (1933), Maslow (1943, 1954), Lowry and Maslow (1979), Alderfer (1972), James (1890), Herzberg (1959) and others (Lowry, 1971). We will take particular interest on Maslow's hierarchy of needs, Alderfer's Existence, Related and Growth (ERG) model and McClelland's achievement theories because they are related, common and often applied in behavioral research.

- Maslow's hierarchy of needs

Fundamental to Maslow's theory of motivation (1965) is that human needs are hierarchical—that unfulfilled lower needs dominate one's thinking, actions, and being until they are satisfied. According to Maslow, the physiological needs (e.g., hunger, thirst) come first, followed by security needs, social needs (affiliation), self-esteem needs (recognition), and finally self-actualization needs. Once a lower need is fulfilled, a next level surfaces to be addressed or expressed in everyday life. Once all of the basic or deficiency needs—so called because their absence is highly motivating—are satisfied, then human beings tend to pursue the higher needs of self-actualization. Indeed, the fulfillment of the basic needs is considered a prerequisite to such pursuit (Zalenski and Raspa, 2006).

- Alderfer's ERG model

Clayton Alderfer (1969) condensed Maslow's five need categories into three: Existence needs, Related Needs and Growth needs. The existence needs included survival needs, safety, love and affection. Related needs corresponded to Maslow's third and fourth level needs of social and external esteem, relatedness, recognition and praise. The growth needs are internal esteem and self-actualization, which propel a person to productive effects to himself and his environment. The three main differences between Alderfer and Maslow's theory is that the ERG model does not have some sort of hierarchy according to concreteness but it also allows for order of needs to differ for different people. Second, if a relatively more significant need is not gratified, the desire to gratify a lesser need will be increased. And third, a lower level need does not necessarily have to be gratified for a higher level to become relevant (Ball, 2013).

- McClelland's Achievement theory

David McClelland built his achievement theory and proposed that an individual's specific needs are acquired over time and are shaped by one's life experiences. Need and behavior is influenced by the following: (1) Needs for achievement, (2) needs for power and authority, and (3) needs for affiliation. An important behavior that aligns to this theory is that achievers avoid high risk and low risk areas and focus of moderate risks for success.

2. Employee performance

We will define the terms performance and productivity then go on to review studies on employee behavior in the workplace.

Performance is the act or process of performing a task, an action, a duty (Oxford Advanced Learners dictionary, 2004). Employee performance is defined as whether a contracted person in an organization executes their job duties and responsibilities well. This includes input of resources and time, the implementation, and achievement of results in the level of goods and services produced. Performance is a critical factor in organizational success (Litmus).

Productivity on the other hand is the measure of units of output divided by units of input when an employee performs a task or job (Chew, 1988). Hill states that productivity measures the relationship between outputs such as goods and services produced, and inputs that include labor, capital, material and other resources (Hill, 1993).

Although employee performance and employee productivity are two quite distinguished terms, this study will use performance and productivity interchangeably.

- Hawthorne Studies

The Hawthorne experiments consisted of a series of studies conducted at the Western Electric Company's Hawthorne Works (Chicago) from 1924 to 1932 by Harvard psychologist Elton Mayo and his team. The Hawthorne studies were designed to find ways to increase worker productivity. The first experiment, and commonly known was the "Illumination" study that looked at what effects lighting levels had on employee performance at Western Electric. The results of the study showed that even as lighting levels decreased, employee performance continued to increase - that is, until the workers could no longer see, after which productivity naturally declined.

The Hawthorne experiments were among those same lines but had a humanistic view unlike Taylor's machinists' views. This is known as the "Hawthorne Effect," the correlation between the social context of workplace environment and employee productivity. In the workplace, the Hawthorne effect, psychological phenomenon, can explain how the more attention an employee receives from managers, coworkers and customers, the higher the level of effort and employee productivity. Essentially, productivity increases when employees think that they are being watched or observed closely.

- Taylor's productivity theories

In 1911, Frederick Winslow Taylor published his work, *The Principles of Scientific Management*, in which he described how the application of the scientific method to the management of workers greatly could improve productivity. Scientific management methods called for optimizing the way that tasks were performed and simplifying the jobs enough so that workers could be trained to perform their specialized sequence of motions in the one "best" way. Taylor's stressed the using of financial rewards as incentives to increase employee motivation, as a stimulant like Ivan Pavlov's classical conditioning theory or pay for performance.

3. Research on labor and productivity

Theories of economic growth have emphasized the role of human capital and the different mechanics through which it may affect economic growth. The main theoretical approaches highlighting the connection between human capital and economic growth are the augmented Solow neo-classical approach and the new growth theories.

The standard growth model developed by Solow (1957) extends the basic production function by adding human capital as an extra input in the aggregate production function, where the output of the macro economy is a direct function of factor inputs: physical capital, labor and human capital, augmented by a

term known as the Solow residual, or total factor productivity, which drives technical progress or the productivity of these factor inputs.

It is clear that individuals with a university degree tend to have a significantly higher wage rate than those without (Holland et al., 2013).

Improvements in educational outcomes have been widely recognized as essential in enhancing growth in both developed and developing countries. In the past few decades an influential macroeconomic literature has emphasized how education, as a measure of human capital, could generate long-term sustained economic growth. On the other hand, education acquired by individuals provides social returns at the macroeconomic level, yielding additional indirect benefits to growth (Sianesi and Van Reenen, 2003).

Work experience, and especially alternating periods of work and study, and partnership arrangements between educational institutions and business firms could make a useful contribution to the educational process, subject to a number of conditions which are not always met and which are linked to the particular socio-cultural context and historical heritage in each country (Bertrand, 1994).

Study gaps

This case study of employed PNG university graduates will focus on exploring the relationship of unmet needs and employee performance. Research work in PNG and the Pacific are still in the infancy stages, thus we will have scarce resource to relate to for the study.

Total number of universities in PNG is six, with three public and three privately run. Every year the six universities produce graduates with diplomas, degrees, masters and PhD certification to build the workforce of the country. We have noted in the review of literature that human capital development is a core component of economic productivity. Thus, our aim in this study is to better understand the PNG university graduates (exploratory) and see how the country can move resources to human capital development gaps for the achievement of mutual objectives.

Limitations

Due to time and resource constraint, this study did not cover thoroughly the theoretical frameworks and the performance and productivity data to correlate accurately. As an exploratory research with a limited fieldwork, behavioral and productivity findings may provide limited concrete empirical data on which we can develop models to increase productivity of employed graduates of universities in PNG workforce.

Methodology

A causal study was undertaken focusing on the population of employed people who were graduates of universities in PNG. A selective-random sample of 90 was surveyed using a questionnaire and observation techniques. A total of 78 questionnaires were returned of which 57 were usable.

The questionnaire had four parts and collected data on a subjects biography, workplace, livelihood and personal traits and values. Biography details asked questions on personal details, religious and cultural background, education and employment. The other three parts of the questionnaire were cognitive-ranking statements that used a five-point Likert scale: Poor-1, Good-2, Neutral-3, Very Good-4, and Excellent-5. This ranking scale measured quality (Vagias, 2006).

The method of questioning was adapted from the Minnesota Employee Satisfaction questionnaire. Questioning statements started as – “*In my current job, this is how I think about*”... and the statements followed with the five ranking scale. This method was used to explore the cognition of subjects on how they qualified needs and other variables in the research.

Observations were also done based on experience through case studies, behavior research findings and common behavior traits in PNG.

Data Analysis

Data was analyzed using statistical methods. These included sums, mean, median and standard deviation. For the variable analysis, Pearson’s correlation coefficient method was used. Cross-tabulation was used to identify relationships between biographic details of subjects and other factor analysis studied in the survey. Data reliability and validity testing was also done manually using Microsoft excel program.

Findings

From the 57 usable questionnaires received and analyzed, the following findings in the four questioning areas were found:

1. Demography

Of the 57 surveyed, 54.3% were males and 45.7% were females. Majority (91.2%) of the graduates were from the public sector while 8.8% were from the private sector. The University of PNG had the most subjects surveyed (38.6%), with both Divine Word and PNG Unitech at 22.8% and PAU graduates on 15.9%. From these universities, 2% had diplomas, 49.0% were degree holders, and 6% had a master’s degree.

2. Correlation of needs and performance

Using Pearson’s coefficient correlation method, we calculated the numerical data to identify relationships between needs and employee performance. The following formula was used:

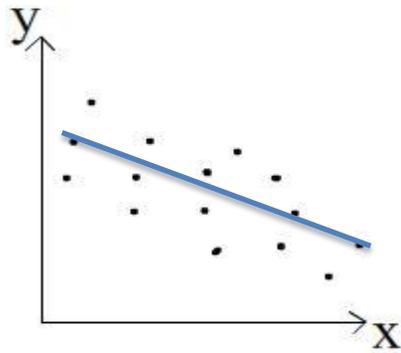
$$r_p = \frac{\sum_{i=1}^n (X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum_{i=1}^n (X_i - \bar{X})^2 \sum_{i=1}^n (Y_i - \bar{Y})^2}}$$

$$= \frac{(-1.2/4)}{(0.17*6.66)}$$

$$= (-0.26479)$$

$$\approx (-0.26)$$

The calculation revealed that needs and employee performance have a weak negative correlation of -.26. This can be illustrated in the graph below.



Where, y = unmet needs
x = employee performance

This illustration shows the weak negative correlation relationship between unmet human needs and employee performance of graduate staff. The x-axis represents performance while the y-axis represents the needs of graduates.

3. Influential factors on needs and performance

The survey covered areas of other influential factors that affected graduates performance in the workplace. These factors studied included workplace, livelihood and value factors. The findings are presented below with the percentage rating as per survey subjects:

a) Workplace factors

<i>In my current job is how I think about...</i>	<i>(Percentage)</i>				
	<i>Poor</i>	<i>Good</i>	<i>Neutral</i>	<i>Very Good</i>	<i>Excellent</i>
<i>Job satisfaction</i>	10.5	14.4	24.6	22.8	28.1
<i>Pay for job</i>	15.8	26.3	17.5	17.5	12.3
<i>Pay for job overtime</i>	17.5	35.1	16.8	17.6	14.0
<i>Job benefits as an employee</i>	14.0	22.8	26.3	15.8	21.0
<i>Job benefits for family needs</i>	12.3	24.6	17.5	19.3	26.3
<i>Organizational culture/behavior</i>	15.8	12.3	24.6	33.3	14.0
<i>Manager superior attitudes/behavior</i>	17.5	12.3	22.8	31.6	15.8
<i>Employee attitudes/behavior</i>	8.8	17.5	35.1	24.6	14.0
<i>Workplace facilities and utilities</i>	10.5	21.0	19.3	35.1	14.0
<i>Workplace atmosphere/environment</i>	14.0	21.1	14.0	28.1	22.8

b) Livelihood factors

<i>In my lifestyle, this is how I think about...</i>	<i>(Percentage)</i>				
	<i>Poor</i>	<i>Good</i>	<i>Neutral</i>	<i>Very Good</i>	<i>Excellent</i>
<i>Basic needs (food ,water)</i>	8.8	15.8	17.5	33.3	24.6

<i>Needs of shelter/transport</i>	8.8	22.8	19.3	33.3	15.8
<i>Health and hygiene needs</i>	15.8	17.5	19.3	24.6	22.8
<i>Relationship with manager/superior</i>	3.5	22.8	24.6	33.3	26.3
<i>Relationship with colleagues</i>	10.5	12.3	17.5	33.3	26.3
<i>Relationship with family/friends</i>	1.8	19.3	10.5	42.1	26.3
<i>Recognition in workplace/profession</i>	17.5	19.3	24.6	22.8	15.8
<i>Recognition in community /village</i>	0.0	7.0	24.6	36.9	31.6
<i>Achievement of personal goals</i>	7.0	26.3	28.1	24.6	14.0
<i>Assistance given to achieve goals</i>	8.8	22.8	29.8	21.1	17.5

c) *Value factors*

<i>From experiences, this is how I think about university graduates in my organization</i>	<i>(Percentage)</i>				
	<i>Poor</i>	<i>Good</i>	<i>Neutral</i>	<i>Very Good</i>	<i>Excellent</i>
<i>Pay for performance</i>	31.6	21.1	17.5	19.3	14.0
<i>Need-based employment benefits</i>	5.3	26.3	29.8	21.5	19.3
<i>Employee-employer relationship</i>	10.5	15.8	24.6	29.8	19.3
<i>Mentoring and motivation for graduates</i>	17.5	15.8	33.3	14.0	19.3
<i>Job security and safety</i>	7.0	14.0	21.0	40.4	17.5
<i>Compliance to organizations policies</i>	3.5	14.0	31.6	45.6	5.3
<i>Types of organizational culture</i>	7.0	19.3	36.8	21.0	15.8
<i>Career development opportunities</i>	5.3	24.6	26.3	31.6	12.3

From the three major factor areas surveyed, we can summarize by testing the findings using cross-tabulation. Table 1.1 below summarizes the common factors that also have impact on employee behavior and measured it against monetary and non-monetary classifications of needs of graduate employees.

Table 1.1: *Common factors that influence employee performance and need values*

<i>Variable/factor</i>	<i>Person: Age, gender, race/ethnicity</i>	<i>Experience: Educational, cultural, spiritual, social</i>	<i>Motivation: Deficient and growth</i>	<i>Value: Based on society and upbringing</i>
<i>Monetary</i>	*31.6% - need for pay for performance	29.8% - pay for experience and expertise	29.8% - training and development	31.6% - Risk management and compliance
<i>Non-monetary</i>	29.8% - employee benefits based on needs assessment	40.4% - job security and safety	33.3% - mentoring and motivation	45.6% - dynamic corporate/organizational culture

* The percentage figures presented are high scores of the subjects on variables they view as critical to their work and needs.

We can see from the table that the independent variables of monetary and non-monetary employee incentives are affected by four dependent need variables. These dependent variables are the Person; Experience; Motivation; and Values. The Person factor looks at the biography of a person that makes that person a person with distinct behaviorally and cognitively qualities. Experience factor categorizes the life

experiences the person has in life – educationally, culturally, spiritually and socially. Motivational factor centers on the deficient and growth needs of a person, while the Value factor identifies the type of value perception a person has that will have strong impact on how he or she will see unmet needs and work performance in life.

Discussions

In our study we researched on three common need theories and related them. We can summarize that Maslow’s needs theory had an hierarchy and stated that lower unmet needs when fulfilled with motivate an employee to higher stages of the needs. Alderfer on the other hand, though he built on Maslow’s needs hierarchy argued that there is no hierarchy. He stated that a person may fulfill higher needs before meeting the basic physiological needs in order to increase productivity. McClelland, who also borrowed Maslow’s theory, pointed out that a person’s life experiences and environmental exposures will determine and affect productivity.

The two significant employee productivity studies we selected added more value to our research. The Hawthorne experiments by Elton Mayo were a series of studies covering different areas of employee performance behaviors. However, the common Illuminations studies postulate that showing interest in employees working conditions and having an eye on them will motivate high productivity. For Taylor’s often criticized scientific management studies, Taylor emphasized that there is one best way to increase productivity. This can lead us to understand that different people, organizations and systems may not have generic methods applicable at a global level or across all of humanity. Each employee or people is unique and has needs which we have to uncover to increase performance.

When quantifying the relationship between unmet needs and employee performance, we discovered that there existed a weak negative correlation of -.26. This finding is sensibly correct because we know that when an unmet need is fulfilled, employee performance is increased. Or when unmet needs decrease, performance increases – a negative correlation. A major benefit of this weak negative correlation is that a small change in need meeting will result in a somewhat large increase in employee performance (see graph above).

Monetary and non-monetary factors based on the findings are influenced by the factors--Person Experience, Motivation and Value. From these factors, we developed a theory – the PEMV or “Wokman theory.” The theory was derived from the research findings:

$$\text{Wokman Theory}$$
$$EP = \frac{[P * E * M]}{V}$$

Where, EP = Employee performance
P = Person factor
E = Experience factor
M = Motivation factor
V = Value factor

The Wokman theory expresses the vital factors that impact the performance behavior of employees. This theory is an illustration of the ‘one best way’ to identify factors that influence employee performance in

the workplace as emphasized by Fredrick Taylor's scientific management theories. With this example, we can state that for an organization to increase employee performances, it needs to develop an applicable and customized formula or method to understand employees and meet needs to increase productivity.

Conclusion

In this study we identified and quantified the relationship between needs theories and employee performance, by surveying the employed PNG university graduates in the workforce. The research found the following:

- Unmet needs influence employee performance, as stipulated by Maslow, Alderfer and McClelland's need theories.
- The Hawthorne study findings can be applied to current scenarios to increase employee productivity – particularly when employees are watched and cared for.
- There is a weak negative correlation ($r = -.26$) between unmet needs and employee performance using Pearson's coefficient correlation method.
- Using cross tabulation, we developed the theory to identify factors that have impact on employee behavior and productivity. This is an implementation of scientific management theories of finding the one best way of identifying and increasing employee performance.

With this, we conclude that the responsibility of management of organizations is to understand graduate staff needs and experiences – using self-developed theories or methods. A good environment and dynamic cultures are paramount in this approach for the success of meeting organizational and each graduate employee's objectives.

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