This paper addresses the need fulfillment of moonlighting university teachers in Khyber Pakhtunkhwa. We selected nine public sector universities randomly following by the calculation of respondents for each category of teachers through the proportion allocation method. The sample consisted of 656 faculty members. The study used Porter Need Satisfaction questionnaire and compared moonlighter and non-moonlighter teachers’ needs fulfillment. The results reveal that there is no difference between the social needs, actualization needs and esteem needs of the moonlighters and non-moonlighter teachers. In the case of self-fulfillment and security needs, there was found a difference for both the categories. The results reveal an insignificant difference between teachers practicing moonlighting and those not moonlighting in terms of need fulfillment and moonlighters are more deficient in security, esteem and actualization needs. The study suggested the formalization and encouragement of moonlighting as well as improvement of work conditions (pecuniary and non-pecuniary).

Key Words: Moonlighting, PNSQ, Need Fulfillment, Higher Education Institutes

Introduction
Need satisfaction has been one of the top priorities of human activities. In most of the cases, money provides means to satisfy needs and some needs are independent of money. But as money has the power to satisfy most wants/needs, earning money becomes a priority. Over the decades, economic challenges have been increased. Due to these challenges, employees try to ensure work and work security as well as continuity of
earnings (Panos et al., 2014). In most cases, employees go for undertaking more than one job; moonlighting.

Moonlighting may be done for monetary reasons or non-monetary reasons. Researchers like Michelotti (1977) and Shishko and Rostker (1976) have suggested monetary motives behind moonlighting whereas Miller and Sniderman (1974) and Mott (1965) and Mullally (1976) suggest non-pecuniary motives which urge an employee to moonlight. Whether it’s a second job or first job, the utilities are derived, though different from each job. It could be a job portfolio motive providing heterogeneity of job (Kimmel & Conway, 2001; Renna & Oaxaca, 2006) or accrual of a new skill or as a job transitional motive (Paxson & Sicherman, 1994). Similarly, moonlighting may result in an improved level of work and off work satisfaction, the feelings that my well-being is enhanced with an improved behavior at work. There has been little focus on moonlighting outcomes/consequences. (Jamal & Crawford, 1981) as most work is focused on reasons or motives and determinants of moonlighting.

Job Satisfaction plays a crucial part in employee motivation for taking a second job or continuing it. Research has proved the importance of job-related variables about satisfaction from job (Meyer & Allen, 1991). These variables are not only economical but social and psychological as well (Lambert and Hogan, 2009). One of such factors is financial bombshells enticing workers to undertake or look for another job to save as a precautionary measure (Guariglia & Kim, 2004). Similarly, a second job may be a mean to satisfy those needs/wants which cannot be met in primary work. In other words, a single employee taking different utilities at two/ more different workplaces, i.e. heterogeneity of works (Renna & Oaxaca, 2006). The phenomenon is not related to hours constraints in the first job but to diversity of jobs (Baah-Boateng. al., 2013).

The supply of labour, hence, is not similar for both jobs, and Labour hours are not perfect substitutes (Böheim & Taylor, 2004). Similarly, insecure jobs oft a worker for a second job to ensure job risk. It is also a mean of human capital diversification suggested by Panos et al. (2009). According to this study, moonlighting is positively related to the total income of the household. So, it can be thought that wealthy people moonlight with an increase in total income in order to satisfy their aspirations. While low-income class increases moonlight with the fulfillment of their needs. It is most likely that individual may change jobs due to skill transferability as a consequence of perfect information (Shaw, 1987).

Lambert (2003) and Lambert and Hogan (2009) have claimed that moonlighting has been increasing in the education sector and especially in public sector institutes. It may relate to their satisfaction level or their perception of need fulfillment. Teaching (college and school teachers) was found to have more occurrence of moonlighting (BLS, 2001) but the phenomenon has not been researched considerably (Jamal, 1986; Baba & Jamal, 1992) though it may result into outcomes that are related to work and are perceived valuable by the practitioners for instance increase income, benefits and training (Betts, 2004). The reason for fewer studies in this context is problems in the collection of data (Baba & Jamal, 1992) and the identification of moonlighting individuals as people are hesitant in disclosing second job (Perella, 1970; Taylor & Sekscenski, 1982, Betts, 2004). Some researches call it an occupation-specific act and hence its generalization becomes difficult or invalid (Betts, 2004). As markets have become more competitive, the only sustainable advantage an organization has is their employees, hence it is crucial to know employee’s satisfaction and their commitment (Cooper-Hakim & Viswesvaran, 2005). This study is the first of its kind as no such work to the researcher knowledge has been
undertaken in Pakistan and higher education. It will show whether moonlighting fulfills a teacher’s needs or not.

**Literature Review**

There are various definitions of teaching moonlighting in education literature. One such definition was given by Burch (1966) and Stewart (1981) as working outside the school for payment during the school year. Another modified form was given as additional salary earned while working outside the school when the session is off (Gumm, 1968; Tucker, 1965), while there was another updated definition which states that moonlighting refers to any work which is aimed at additional compensation within or outside the school at any time of the session (Wisniewski and Kleine, 1983). In a study, Williams (1993) defined moonlighting in teaching as a situation in which extra working is paid whether within the same work setting or outside. Any additional work even at the same worksite is considered as a second job (Williams, 1992; Wisniewski and Kleine, 1983).

Jamal and Crawford (1981) examined the desirable and undesirable notion of moonlighting. Their main objective was the comparison of moonlighters based on the need fulfillment related to work as well as non-work life, performing in the job, psychological well-being, absentees from work, volunteering, preference for the short working week, intent to leave and flex timing. They found no such difference for these variables between moonlighter and non-moonlighters and moonlighters were found to be socially active.

Biglaiser and Ma (2007) examined the consequences of moonlighting focusing on its effect on price, quality and welfare of consumers in private as well as public sector. The focus was on such physicians who practice private beside their public-sector job. They also analyzed how and when welfare can be increased by regulating moonlighting by Government.

Koomson *et al.* (2017) in their article, pointed out those teachers’ salaries are low which compels them either to take loans or hiring purchases to fulfill consumption needs. Their research focused on attrition of teaching staff due to financial stress which they claim has not been given much attention. They studied the effect of moonlighting and financial stress on the attrition of senior high schools’ teachers. Their sample consisted of 1360 school teachers who were in senior grades and who belonged to three regions of Ghana. They found that the financially stressed teacher is likely to leave their class by 6%. The moonlighting teacher was found to leave class more likely by 10%. They recommended that having more pressure for credit payments, teachers should be given special concession of repayment of interest of their salary may be increased so that their stress can be decreased.

Timothy and Nkwama (2017) termed research about teachers moonlighting as an understudied concept. They studied the determinants of primary teachers moonlighting in the Ilala district in Tanzania. Their sample consisted of 313 teachers who belonged to public primary schools. They found that 39.4% teachers had a secondary mean for income generation. They also found that gender and age had a significant effect on moonlighting. Age was found to have a positive relation with moonlighting. Their research confirmed the notion that in Tanzania moonlighting is exercised by formal sector employees in an intention to quit job in the future and undertake self-employment when they retire.
Brow and Sullivan (2017) compared the effect of moonlighting between teachers moonlighting and teachers do not moonlight. They gathered data through an online survey. Their sample consisted of those teachers who had formal membership in Texas classroom teachers’ association. Their response about the impact of moonlighting on their job performance was asked. They also gave information about the salaries they were drawing. They were asked about whether they will turnover moonlighting and remain in classroom if their salaries were raised which was answered as yes in most cases. There were also question about the effect of moonlighting on their way of instruction. The availability of the types of jobs for moonlighting was also probed. The teachers perceived that there is an adverse effect on their teaching due to moonlighting.

Kisumano and Mbaleka (2017) explored the reasons behind teachers moonlighting democratic of Congo. They found that there are monetary motives behind moonlighting. The most important reason was to safeguard future uncertainties. Besides this, other reasons were taking advantage of opportunities available at hand, to strengthen networking, enhancement of intellectual capabilities, to have an international academic ranking. The consequences included shallow teaching practices, lost or decreased contact between students and teachers and neglected daily activities related to teaching. They found that moonlighting result into increase in burnout and work-family conflict.

Nunoo et al. (2018) analyzed the relation between moonlighting and employment security in Ghana. The study followed Shishko and Rostker (1976) work and applied their approach by taking data from six rounds of Ghana living standard. The study also developed an index for employment by employing four variables. They found that job security decreases the likelihood of moonlighting by .03 for single job moonlighters. They concluded that job security can decrease moonlighting in case of a single additional job. In case moonlighting becomes a well-practiced phenomenon and gains more jobs, job security cannot let them leave the practice.

### Sampling

In the first step, nine universities were randomly selected. The data of faculty for each university was taken from their respective registrar offices. The following sample size selection formula was used for sampling in the first stage in which the number of respondents for each category of teachers was calculated (Mwakaje, 2013).

\[
n = \frac{N}{1 + Ne^2}
\]

Where

- \( n \) = sample size needed for research
- \( N \) = Total number of teachers/faculty in sampled universities
- \( e \) = margin of error which is 5% in this case

The resulted sample size is given in table 1. It shows that 98 professors, 60 associate professors, 195 assistant professors, 246 lecturers and 67 teaching assistants were the sample respondents in each category. To select a sample from each university, the proportional allocation method was applied as per the given formula (Chaudhry, 2008).

\[
n_i = \frac{N_i}{N} \cdot n
\]

Where

- \( N \) = shows the required sample size which is randomly selected from the public sector universities.
N shows the total number of teacher (each category) i.e. the population size. 

$N_i =$ Number of teachers in individual category in each university. 

$N_i =$ Number of teachers in individual category to be selected from each university. 

The final sample is given in table no. 1.

**Table 1. The Sample Size of the Sampled Universities’ Faculty**

<table>
<thead>
<tr>
<th>University</th>
<th>Professors</th>
<th>Associate Professor</th>
<th>Assistant Professor</th>
<th>Lecturers</th>
<th>Assistant Teaching</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Khushal Khan University Karak</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Islamia College University Peshawar</td>
<td>11</td>
<td>5</td>
<td>35</td>
<td>55</td>
<td>0</td>
<td>106</td>
</tr>
<tr>
<td>University of Malakand</td>
<td>3</td>
<td>6</td>
<td>40</td>
<td>46</td>
<td>0</td>
<td>95</td>
</tr>
<tr>
<td>Bacha Khan University Charsadda</td>
<td>4</td>
<td>3</td>
<td>16</td>
<td>24</td>
<td>41</td>
<td>88</td>
</tr>
<tr>
<td>University of Engineering and Technology Mardan</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>5</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>University of Haripur</td>
<td>0</td>
<td>1</td>
<td>15</td>
<td>15</td>
<td>3</td>
<td>34</td>
</tr>
<tr>
<td>University of Swabi</td>
<td>2</td>
<td>2</td>
<td>12</td>
<td>16</td>
<td>7</td>
<td>39</td>
</tr>
<tr>
<td>The University of Agriculture Peshawar</td>
<td>62</td>
<td>25</td>
<td>43</td>
<td>60</td>
<td>0</td>
<td>190</td>
</tr>
<tr>
<td>Khyber Medical University Peshawar</td>
<td>17</td>
<td>20</td>
<td>18</td>
<td>22</td>
<td>5</td>
<td>82</td>
</tr>
<tr>
<td>All</td>
<td>98</td>
<td>60</td>
<td>195</td>
<td>246</td>
<td>57</td>
<td>656</td>
</tr>
</tbody>
</table>

*Source: Author’s Calculations*

**Need Fulfillment as a Consequence of Moonlighting for Teachers:**

Although moonlighting can result in multifold outcomes, the research focused on the issues related to the person who moonlights. As most of the activities are done out of need, the main focus was to find whether the needs are fulfilled or not. For this purpose, the Hierarchy of Needs by Maslow was used as a guide for framing questions by Porter (1962) which was termed as Need Satisfaction Questionnaire (PNSQ).

This questionnaire was used to assess the need fulfillment of teachers. The questionnaire was framed such that each of its thirteen items contains content relating to the five need categories.


The state of mind of being secure in the job at hand.

4.2: Needs related to Societal Interaction.

(a) The relaxation that my job provides me the ability to contribute to others’ well-being.

(b) Friendship development opportunities due to my job.

4.3: Needs for Approval/Admiration

(a) My contentment about admiration due to my job i.e. feeling of self-worth.

(b) The respect given to my work/grade within the University.

(c) The respect given to my work/grade outside the University.

4.4: Self-Fulfillment / Needs for Autonomy

(a) Power given by my status.

(b) Prospects of autonomous thinking and acting provided by my job.
(c) Chances of participation in setting organizational goals.
(d) The chance provided by my job to determine procedures and methodologies.

4.5: Needs for Actualization of one’ self
(a) My job has the potential for growth as well as development.
(b) The chance provided by my job to exercise my potentials.
(c) My contentment with my valuable gains from my job.

These statements were asked on five items scale from minimum to maximum with a perception of what extent is given by the job and what you think should be given.

Every statement was calculated for a need fulfillment deficiency score by the subtraction of weightage about how it ought to be from the present status score. Then the average score for each category of needs was calculated. A high score means a high deficiency.

Results and Discussion
Test of Difference of Means between Moonlighters and Non-Moonlighters

Table 2 shows the results of independent sample t-test for equality of means of moonlighter’ need satisfaction deficiency and non- moonlighter’ need satisfaction deficiency. The summed score for need deficiency was tested for this purpose. Similarly, the equality of variances was also tested. The result showed that there is no significant difference between the means of two independent groups. The p-value found was more than .05 (.831) and hence it can be inferred that there is no significant difference between means of two independent groups. As per the given p-value related to the equality of variances, (.062) is significant at a ten percent level of significance. So, although the mean difference between moonlighting and non-moonlighting is not significant, there is a significant difference between the variations of the need deficiency responses. It can be inferred that the responses are subject to variation but on average the deficiency perception was found not much different. So, on the average moonlighter teachers and non- moonlighter teachers both are need deficient and there is not a significant difference in their perception of need deficiency. Table 3 also shows no difference in distribution of need deficiency.

Table 2. Independent Samples Test for Comparison of Moonlighting and Non-Moonlighting Teachers

<table>
<thead>
<tr>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levene's Test for Equality of Variances</td>
<td>Levene's Test for Equality of Variances</td>
</tr>
<tr>
<td>Sig.</td>
<td>T</td>
</tr>
<tr>
<td>D Chan-ge</td>
<td>Equal variances assumed</td>
</tr>
</tbody>
</table>
Table 3. Hypothesis Testing

Table 4. Correlations between different Need Categories

**Significant at 10% Source: Survey**
Happy Supplying? An Overview of Moonlighting by University Teachers

Source: Survey

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Category wise Need Deficiency Comparison of Moonlighters and Non-Moonlighters Teachers

To test the hypothesis that there is no difference between needs deficiency for different needs categories for moonlighters and non-moonlighters, Mann Whitney U test was applied. The results are given in Table 5. These results suggested that there was no difference between the social needs, actualization needs and esteem needs of the moonlighters and non-moonlighters. In the case of self-fulfillment and security needs, there was found a difference for both the categories. So, the moonlighters perceive deficiency of self-fulfillment differently from the non-moonlighters. This can be attributed to the non-pecuniary motive behind moonlighting that people resort to moonlight because they feel the present job does not feel them a complete satisfaction of service. In case of security needs, the moonlighter may feel insecure at the primary job and hence will opt for a second job as security for a future job.

Table 5. Hypothesis Testing

<table>
<thead>
<tr>
<th>Hypothesis Test Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Null Hypothesis</td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>1. The distribution of social needs is the same across categories of available.</td>
</tr>
<tr>
<td>2. The distribution of actualization needs is the same across categories of available.</td>
</tr>
<tr>
<td>3. The distribution of self-fulfillment is the same across categories of available.</td>
</tr>
<tr>
<td>4. The distribution of esteem needs is the same across categories of available.</td>
</tr>
<tr>
<td>5. The distribution of security needs is the same across categories of available.</td>
</tr>
</tbody>
</table>

Asymptotic significances are displayed. The significance level is .05.

Conclusion

The deficiency score for moonlighters was considerably low as compared to non-moonlighters. The item “The opportunity for independent thought and action in my position” was found to be more deficient for moonlighters than non-moonlighters. Hence, we can say that moonlighting does not allow a teacher to act independently. It was found that the need deficiency of moonlighters is less than the non-moonlighters and hence it can be said that moonlighting tends to decrease the needs deficiency. Although the mean difference between moonlighting and non-moonlighting was not significant, there was a significant difference between the variations of the need deficiency responses. It can be inferred that the responses are subject to variation but on average, the deficiency perception was found not much different. All the values in need deficiency scores were
found to highly correlate with each other. Hence a deficiency in one kind of need is highly correlated to another kind of need and it can be inferred that we cannot expect to fulfill one need without the fulfillment of another. These results suggested that there is no significant difference between the social needs, actualization needs and esteem needs of the moonlighters and non-moonlighter teachers. In the case of self-fulfillment and security needs, there was found a difference for both the categories. Moonlighters perceive deficiency of self-fulfillment/Autonomy needs differently from the non-moonlighters. Similarly, there is a different security concern on the part of moonlighter teachers.

**Recommendations**

The study asserted that moonlighting activity has a positive effect on the need fulfillment of university faculty. So, ways may be devised to support moonlighting but not at the cost of primary job. The job security need may be given attention in these higher education institutes.
References


