The role of human resource management practices and employee job satisfaction in predicting organizational commitment in Saudi Arabian banking sector

Fatma Cherif
Faculty of Sciences and Letters of Turaif, Northern Borders University, Arar, Saudi Arabia

Abstract

Purpose – The purpose of this study was to investigate the role of human resource management and employee job satisfaction in predicting organizational commitment in the Saudi Arabian banking sector.

Design/methodology/approach – For the purpose of this study, quantitative survey research was employed. The independent variables are human resource management and employee job satisfaction, while the dependent variable is organizational commitment.

Findings – Human resource management correlated positively with employee job satisfaction and organizational commitment. On the other hand, employee job satisfaction was found to be positively correlated with organizational commitment. The two independent variables made significant individual contributions to the prediction of organizational commitment.

Research limitations/implications – This study has some limitations. First, convenient sampling method was used to recruit the participants. Therefore, the findings of the study have limited generalizability in other regions and age groups. Second, as a cross-sectional study, there has to be caution in making any generalization of the results. Future researchers should get more respondents from wider geographical location, that is from different banks, private and public. Furthermore, self-report questionnaires were used to collect data from respondents. It is recommended that future researchers use different methods such as personal interview or telephone interview to collect data. This may help get reliable data after clarifying and removing what may be ambiguous.

Practical implications – The results of this study have corroborated with previous research and confirmed correlations between and among human resource management (HRM), employee job satisfaction and organizational commitment in the Saudi Arabian banking sector. These findings have practical implications. Having high levels of job satisfaction among bank employees will prevent low levels of turnover rate, absenteeism and levels of productivity and increase organizational commitment. HRM practices, on the other hand, help in career development opportunities and hence provide better job opportunities. This study can recommend that to ensure high levels of job satisfaction among employees and enhanced organizational commitment, organizations, especially banks, should emphasize more on HRM practices.

Originality/value – This study could contribute to the literature on HRM, job satisfaction and organizational commitment in the Saudi Arabian banking sector. There is a rapid growth in the banking sector in Saudi Arabia. Therefore, there is an urge for recruiting efficient and experienced human resources (Mizan et al., 2013). This study will contribute to the development of the Saudi Arabian banking sector, which may lead to maintain this sector work effectively that will have a positively impact on the economy of the
Saudi society. It also will highlight the nature and importance of the HRM practices for the benefit of the banking sector.

**Keywords** Human resource management practices, Employee job satisfaction, Organizational commitment, Saudi Arabian banking sector

**Paper type** Research paper

---

**Introduction**

In almost all organizations, there is a report of its mission stating that people are the most valuable resource. To achieve its goal, survive and succeed, any organization should have the right personnel at the right place and at the right time (Oladipo, 2011). Banking organizations, as well as other types of business organizations, depend largely on the quality and competence of its employees. Therefore, organizations have to pay more attention to their human resources, because implementation of human resource practices supports maximizing employees' competences in the organization (Saleem and Khurshid, 2014). Human resource management practices are able to create organizations that are characterized by intelligence, flexibility and competence compared to their rivals. These organizations apply policies and practices of recruiting, selecting, training skilled employees. These employees in their turn will direct their best efforts toward cooperation within the resource bundle of their organization (Nancy, 2013).

Additionally, the success, survival and competing power of the organizations are tied to the commitment of their members. For the members to be committed to their organization, they be satisfied with their job, that is to say employees' job satisfaction is supposed to be a crucial prerequisite for their commitment to their organization. Human resource management practices have a role to play in building a viable mutual relationship between firms and their employees concerning shared trust and duties. This relationship follows the “social exchange theory,” in which employees offer their services to the organizations in exchange of perks and other benefits that they receive from the organizations (Mehwish et al., 2019).

Therefore, it is assumed that the reduction of the cost of employee turnover, absenteeism, low productivity can occur when employees are satisfied as well as well committed to their organization (Mizanur, Mohammad and Mohammad, 2012). Personnel’s achievements and their working capability are perquisites of their sense of job satisfaction (Paşaoğlu and Tonus, 2014). Thereby, for any organization (any bank, here) to attract new competent employees and maintain those existing talented ones, consistent human resource management practices, employee job satisfaction and organizational commitment should be considered and be among its priorities (Khera, 2010; Mizan et al., 2013).

---

**Literature review**

*HRM practices, job satisfaction and organizational commitment*

The success of different organizations, public or private, such as banks, depend largely on the performance of their human resources (Uma et al., 2017), which emphasize employees’ skills (Ong and Koh, 2018; Ong et al., 2019). Human resource management (HRM) practices can be regarded as a set of internally coherent and consistent practices aimed at reinforcing and promoting employee competence, motivation as well as commitment (Elrehail et al., 2019). They also manage human talents and skills to achieve the organization's goals (Ana et al., 2019).

HRM practices are likely to create work conditions and environment where employees become highly committed to the organization (have positive attitude) and do their best to accomplish the organization’s goals. Organizational commitment can be considered the employees’ willing to be committed to help the organization in achieving its goals.
Organizational commitment involves the employees’ levels of identification, involvement and loyalty (Devananda and Onahring, 2019). HRM practices have a significant and positive effect on employee job performance (Faiza et al., 2019).

HRM practices are considered to be a method of encouraging employees’ satisfaction with their jobs (Mohammed et al., 2019). Job satisfaction can be defined as an individual’s affective orientation toward work roles that he/she is presently occupying, and it is linked to that individual’s behavior in the workplace (Devananda and Onahring, 2019).

HRM practices are intended to improve employees’ attitudes (commitment) and subsequently their performance (Cai et al., 2019). Employee commitment and satisfaction affect organization greatly (Elrehail et al., 2019). Moreover, Ana et al. (2019) verified a positive, strong relationship between HRM practices and employee satisfaction. Effective HRM practices can increase employee satisfaction and commitment on one the hand, and organizational performance on the other hand (Cai et al., 2019).

Employees’ commitment is regarded as a bond or link to the organization (Mizan, et al., 2013). If employees are neither committed to organizational commitment nor satisfied with their job, then the rates of absenteeism and turnover will be high (Murat et al., 2014). To ensure employees’ commitment, organizations should adopt and utilize incentives and motivate them to boost up their commitment (Mehwish et al., 2019).

Alima Aktar and Faizuniah Pangil (2018) examined the mediating role of organizational commitment (OC) on the relationship between HRM practices and employee engagement among banking employees. Their results revealed that HRM practices were the significant predictors of employee engagement. The results also identified organizational commitment as a partial mediator on HRM practices and employee engagement relationship.

One can expect an interactional cycle between and among HRM practices, job satisfaction and organizational commitment, where HR policies and practices are likely to raise the level of job satisfaction among employees, which in turn helps these employees to be more committed their organization (Prakash, 2017). They are positively related with affective and normative commitment (Ambreen, 2011). Employees’ commitment to their organization can be monitoring through appropriate attitudes and behaviors, including job satisfaction, affective commitment and retention intention (Mohammad et al., 2018). Abdirahman (2015) found a positive relationship between HRM practices and organizational commitment. HRM practices affect the outcomes of any organization, as they are likely to shape worker behaviors and attitudes (Norhasninna et al., 2018).

Some researchers (Abubakar et al., 2017a, b; Albrecht et al., 2015; Ukil, 2016) revealed that HRM practices could lead to employee satisfaction and engagement. Murat et al. (2014) found that there were positive relationships between HRM practices (recruitment and selection, training and development, compensation and benefits, performance appraisals), job satisfaction and organizational commitment. In the same line, Mizan et al. (2013) found that there were positive relationships among specific human resource practices, job satisfaction and organizational commitment in the banking sector of Bangladesh.

Problem statement
Organizations, at the heart of which lie banks, face challenges, including complex developments, and technological trends, among them are globalization, deregulation. These fast changes impose on them to manage their staff businesses effectively in job satisfaction, employee performance and organizational commitment. It was found that when employees were satisfied with their job, they were successfully committed to their organizations and contributed to their effectiveness and ultimate survival (Mahmood, 2013). Although HRM practices have increasingly been studied in connection with different organizational outcomes like employee job satisfaction, employee performance and employee
commitment (Rahman et al., 2013; Nadarajah et al., 2012; Choi and Lee, 2013), there is no research on the role of HRM and employee job satisfaction in predicting organizational commitment in the Saudi Arabian banking sector.

This study poses the following questions:

(1) Are there relationships between and among HRM, employee job satisfaction and organizational commitment in the Saudi Arabian public banking sector?

(2) What are the combined effects of HRM, employee job satisfaction on organizational commitment in the Saudi Arabian public banking sector?

(3) What is the relative contribution of HRM, employee job satisfaction to organizational commitment in the Saudi Arabian public banking sector?

Purpose of the study
The purpose of this study was to investigate the role of HRM and employee job satisfaction in predicting organizational commitment in the Saudi Arabian banking sector.

Significance of the study
This study could contribute to the literature on HRM, job satisfaction and organizational commitment in the Saudi Arabian banking sector. There is a rapid growth in banking sector in Saudi Arabia. Therefore, there is an urge for recruiting efficient and experienced human resources (Mizan et al., 2013). This study will contribute to the development of the Saudi Arabian banking sector, which may lead to maintain this sector work effectively, which will have a positively impact on the economy of the Saudi society. It also will highlight the nature and importance of the HRM practices for the benefit of the banking sector.

H1. There is a positive correlation between HRM and employee job satisfaction.

H2. There is a positive correlation between job satisfaction and organizational commitment.

H3. There is a positive correlation between HRM and organizational commitment.

H4. There are combined effects of HRM and employee job satisfaction on organizational commitment.

H5. HRM and employee job satisfaction contribute to organizational commitment.

Method
Participants
Convenient sampling method was employed to recruit the participants. Three bank branches of Al Rajhi bank in Riyadh East district, namely, Batha Branch (Men Branches), Al-Aswaq Branch (Men Branches) and Al-Rawdah Branch (Ladies Branches), were approached and selected to study the role of HRM and employee job satisfaction in predicting organizational commitment in the Saudi Arabian banking sector. The majority of the participants were between the ages of 23 and 29 years (n = 180, 54.5 percent), 115 between 32 and 49 (34.8 percent), 35 between 50 and 59 (10.6 percent). As for the educational background, the majority of participants (93.9 percent) had a bachelor’s degree (n = 310), 15 (4.5 percent) were holding a university diploma and 5(1.5 percent) were holding a master’s degree in commerce and management. The years of experience for the participants varied too; 120 (36.3 percent) were
between five and ten years of experience, while 190 (57.5 percent) were between 15 and 20
years of experience. Only 20 (6.2 percent) were more than 20 years of experience. More than
900 questionnaires were distributed. Nevertheless, only 400 were received back, from which
only (330) were selected, as they were filled correctly without missing questions. So, the final
sample was (330) employee respondents from the three bank settings.

Design
For the purpose of this study, quantitative survey research was employed. The independent
variables are HRM and employee job satisfaction, while the dependent variable is
organizational commitment.

Instruments
HRM practices questionnaire (Chandrakantan2011). It is a 16-item questionnaire, with a
five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The factor analysis
yielded a four-factor solution, namely, compensation policy, information sharing, job
security, and training and development, explaining 62.44 percent variance. Each factor has
four items. Scores on each item ranged from 1 to 5, and the composite score could range from
16 to 80. The reliability of the scale in terms of internal consistency was assessed by
Cronbach’s α. The items demonstrated a satisfactory level of internal consistency reliability.
Cronbach alpha values obtained for the measures were 0.70 for compensation, 0.75 for
information sharing, 0.76 for job security, 0.73 for training and development.

Organizational commitment questionnaire (Norm, Cyntia and Francisco, 2017). This
questionnaire measures commitment in its normative dimension, based on reciprocity and
responsibility as value to the work where a link to the organization based on loyalty of
workers set was developed (Norm et al., 2017). It is a 30-item questionnaire, with a five-point
Likert scale from 1 (does not look anything like me) to 5 (it looks a lot like me). The scores on
each item ranged from 1 to 5, and the composite score could range from 30 to 150. The factor
analysis yielded a two-factor solution, namely, loyalty-reciprocity and compliance-
responsibility, explaining 45.1 percent of variance. Reliability analysis indicated adequate
internal consistency, α = 0.88.

The generic job satisfaction scale (Scott Macdonald and Peter Maclntyre, 1997). It is a
reliable measure of a single construct. It is a ten-item scale, with a five-point Likert scale
from 1 (strongly disagree) to 5 (strongly agree). The scale was significantly related to
workplace factors such as job stress, boredom, isolation and danger of illness or injury.
Cronbach’s α. The items demonstrated a satisfactory level of internal consistency
reliability. Cronbach α obtained for the measures was 0.77. The scores on each item ranged
from 1 to 5, and the composite score could range from 5 to 50, with higher scores indicating
more job satisfaction.

Procedures
Prior to administering the scales, employees in the target banks were informed about the
purpose of the study and voluntarily indicated orally that they agreed to participate. To
ensure that the respondents responded to the items honestly and sincerely, they were told not
to identify themselves in any way on the scale paper. They were also informed that they
should not be concerned with anything regarding their participation in the study, and their
responses are for research purposes only and would be kept confidential. All data were
entered in an SPSS file.
Data analysis
The data were analyzed with Pearson correlation and multiple regression. Multiple regression was used to explore the relative contributions of both HRM and employee job satisfaction to the prediction of organizational commitment in the Saudi Arabian banking sector.

Results
Descriptive data and inter-correlations
Table I shows the means, descriptive statistics and inter-correlations of HRM, employee job satisfaction and organizational commitment. Table I shows that there are significant correlations between HRM, employee job satisfaction and organizational commitment. HRM correlates positively with employee job satisfaction ($r = 0.688$) and organizational commitment ($r = 0.524$). On the other hand, employee job satisfaction was found to be positively correlated with organizational commitment ($r = -0.612$).

Human resource management and employee job satisfaction as predictors of organizational commitment
The results presented in Table II show that the two independent variables (HRM and employee job satisfaction) when put together yielded a coefficient of multiple regression ($R$) of 0.574 and a multiple correlation square of 0.571. This shows that 57.1 percent of the total variance in organizational commitment of those who participated in the study is accounted for by the combination of HRM and employee job satisfaction. Table III indicates that the

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRM</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee job satisfaction</td>
<td>0.688**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Organizational commitment</td>
<td>0.524**</td>
<td>0.612**</td>
<td>1.00</td>
</tr>
<tr>
<td>Mean</td>
<td>70.28</td>
<td>122.34</td>
<td>48.51</td>
</tr>
<tr>
<td>SD</td>
<td>1.63</td>
<td>1.19</td>
<td>1.29</td>
</tr>
</tbody>
</table>

Note(s): ** $p < 0.01$

Table II.
The regression results of the predictor variables (HRM and employee job satisfaction) and the outcome measure (organizational commitment) (model summary)

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>SE of the estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.717$^a$</td>
<td>0.514</td>
<td>0.512</td>
<td>0.08585</td>
</tr>
<tr>
<td>2</td>
<td>0.757$^b$</td>
<td>0.574</td>
<td>0.571</td>
<td>0.08052</td>
</tr>
</tbody>
</table>

Note(s): $^a$Predictors: (constant), HRM; $^b$Predictors: (constant), HRM, EJS; Dependent variable: OC

Table III.
Summary of multiple regression analysis between the predictor variables (HRM and employee job satisfaction) and the outcome measure (organizational commitment) (ANOVA)

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean square</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Regression</td>
<td>2.555</td>
<td>1</td>
<td>2.555</td>
<td>346.651</td>
<td>0.000$^a$</td>
</tr>
<tr>
<td>Residual</td>
<td>2.418</td>
<td>328</td>
<td>0.007</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4.973</td>
<td>329</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Regression</td>
<td>2.853</td>
<td>2</td>
<td>1.426</td>
<td>219.979</td>
<td>0.000$^b$</td>
</tr>
<tr>
<td>Residual</td>
<td>2.120</td>
<td>327</td>
<td>0.006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4.973</td>
<td>329</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note(s): $^a$Predictors: (constant), HRM; $^b$Predictors: (constant), HRM, EJS; Dependent variable: OC
analysis of variance of the multiple regression data produced an F-ratio value significant at 0.01 level \((F(2, 327) = 219.979; p < 0.01)\).

As for the results displayed in Table IV, each of the two independent variables made significant individual contributions to the prediction of organizational commitment. The results indicated that the following \(\beta\) weights, which represented the relative contribution of the independent variables to the prediction, were observed. HRM \((b = 0.252, t = 9.856; p < 0.01)\) and employee job satisfaction \((b = 0.376, t = 6.773, p < 0.01)\). Although the two variables made significant relative contribution to the prediction of organizational commitment, employee job satisfaction is a more potent predictor.

Regression standardized residual, normal P-P plot of regression standardized residual and regression standardized predictive value are shown in Figures 1–3. Here is a histogram of the residuals with a normal curve superimposed. The residuals look close to normal. Figure 2 checked for normality of residuals with a normal P-P plot. The plot showed that the points generally followed the normal (diagonal) line with no strong deviations. This indicated that the residuals were normally distributed.


discussion

The purpose of this study was to investigate the combined effects of HRM and employee job satisfaction (predictor variables) on organizational commitment (outcome measure). Moreover, it aimed to investigate the relative contribution of HRM and employee job satisfaction to organizational commitment in the Saudi Arabian banking sector. Additionally, the aim was to find out if there were correlations between and among HRM, employee job satisfaction and organizational commitment in the Saudi Arabian banking sector. In this regard, the findings extend our knowledge on the association between HRM, employee job satisfaction and organizational commitment in the Saudi Arabian banking sector.

Findings from Table I: HRM correlated positively with employee job satisfaction and organizational commitment. On the other hand, employee job satisfaction was found to be positively correlated with organizational commitment. These findings are consistent with previous studies that highlighted that human resource practice and employee job satisfaction were found to be contributing positively to employees’ organizational commitment (Haruna and Marthandan, 2017; Nwachukwu and Chladková, 2017; Taghrid, 2015). It is likely that employees’ positive perceptions about the human resource practice increase their job satisfaction and commitment to their organization. This may be due to, as revealed by Altarawneh (2009), service industry normally gives more attention to HRM than do other industries. The ultimate purpose of HRM is to ensure that the organization is able to achieve success through manpower. HRM provides the organization with required capabilities that allow its people to learn and capitalize on new opportunities. It is concerned with achieving the

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized coefficients B</th>
<th>SE</th>
<th>Standardized coefficients (\beta)</th>
<th>(t)</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>33.111</td>
<td>1.015</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HRM</td>
<td>0.370</td>
<td>0.020</td>
<td>0.717</td>
<td>18.619</td>
<td>0.000</td>
</tr>
<tr>
<td>(Constant)</td>
<td>57.946</td>
<td>3.788</td>
<td>0.488</td>
<td>15.297</td>
<td>0.000</td>
</tr>
<tr>
<td>HRM</td>
<td>0.252</td>
<td>0.026</td>
<td>-0.335</td>
<td>9.856</td>
<td>0.000</td>
</tr>
<tr>
<td>EJS</td>
<td>-0.376</td>
<td>0.056</td>
<td>-0.686</td>
<td>-6.773</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Note(s):** *Dependent variable: OC*
following: organizational effectiveness, human capital management, knowledge management, reward management, employee relations and meeting various needs (Osibanjo, 2012).

Al Rajhi Bank is a service industry that has competitive advantage. Founded in 1957, Al Rajhi Bank is one of the largest Islamic banks in the world with total assets of SR343bn (US$90bn), a paid up capital of SR16.25bn (US$4.33bn) and an employee base of over 9,600 associates. With over 60 years of experience in banking and trading activities, the various individual establishments under the Al Rajhi name were merged into the umbrella “Al Rajhi Trading and Exchange Corporation” in 1978, and it was in 1988 that the bank was established as a Saudi share holding company. Deeply rooted in Islamic banking principles, the Sharia-compliant banking group is instrumental in bridging the gap between modern financial demands and intrinsic values while spearheading numerous industry standards and development.
The results of this study, consistent with the findings of Ali et al.’s (2019), revealed that job satisfaction was correlated with organizational commitment. Additionally, HRM (represented by their managers) provides suitable conditions for increasing employees satisfaction and job motivation through appropriate awarding, which are based on the actual evaluation of performance and increasing salary in accordance to employees’ capabilities, aiming to improve their organizational commitment.

Employees’ high levels of job satisfaction is connected with high levels of productivity, low levels of turnover rate, low levels of absenteeism and levels of organizational commitment. HRM practices, which provide opportunities and are responsible for the effective growth and development of human resources in the organization, are a stronger predictor of organizational commitment. While, the absence of career development opportunities and better job opportunities are important reasons for employee turnover intention (Budhwar et al., 2009). The results of this study are consistent with those of Edgar and Geare’s (2005), who revealed that HRM practices would influence on employee attitu des such as organizational commitment, job satisfaction and organizational fairness in New Zealand. Job satisfaction can be achieved through equitable rewards system such as pay, working conditions, training and development, fair treatment and fair human resources practices (Osibanjo et al., 2012).

The results of regression analysis revealed that the two independent variables (HRM and employee job satisfaction) when put together yielded a coefficient of multiple regression ($R^2$) of 0.574 and a multiple correlation square of 0.571. This showed that 57.1 percent of the total variance in organizational commitment of those who participated in the study was accounted for by the combination of HRM and employee job satisfaction.

Application and implications
The results of this study have corroborated with previous research and confirmed correlations between and among HRM, employee job satisfaction and organizational commitment in the Saudi Arabian banking sector. These findings have practical implications. Having high levels of job satisfaction among bank employees will prevent low levels of turnover rate, absenteeism and levels of productivity and increase organizational commitment. HRM practices on the other hand help in career development opportunities, and hence provide better job opportunities. We can recommend that to ensure high levels of
job satisfaction among employees and enhanced organizational commitment, organizations, especially banks, should emphasize more on HRM practices.

**Conclusion and recommendations**

In conclusion, the aim of this study was to investigate the combined effects of HRM and employee job satisfaction (predictor variables) on organizational commitment (outcome measure). Moreover, it aimed to investigate the relative contribution of HRM and employee job satisfaction to organizational commitment in the Saudi Arabian banking sector. Additionally, the aim was to find out if there were correlations between and among HRM, employee job satisfaction and organizational commitment in the Saudi Arabian banking sector. It was found that employee job satisfaction correlated positively with organizational commitment. The two independent variables made significant individual contributions to the prediction of organizational commitment. It can be said HRM programs, activities, policies and practices are means through which organizational people can be managed to gain competitive advantage. So, its practices can be adjusted, accepted and used by bank managers and employees as part of their daily work. It is well known that the banking environment has both dynamic and competitive nature, so innovative HRM practices should be focusing on providing employees with new and diverse skills and cognition, ensuring their flexibility to be able to respond to change.

**Limitations and future research**

This study has some limitations. First, convenient sampling method was used to recruit the participants. Therefore, the findings of the study have limited generalizability in other regions and age groups. Second, as a cross-sectional study, there has to be caution in making any generalization of the results. Future researchers should get more respondents from wider geographical locations, i.e. from different banks, private and public. Furthermore, self-report questionnaires were used to collect data from respondents. It is recommended that future researchers use different methods such as personal interview or telephone interview to collect data. This may help get reliable data after clarifying and removing what may be ambiguous.

**References**


Corresponding author
Fatma Cherif is can be contacted at: Fatma.cherif@nbu.edu.sa