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The evaluation of training and development of employees: the case of A national oil and gas industry

Aliya Mohammed Al-Mughairi*

Brunel University, Business school *

Abstract: With high levels of organisational investment in staff training (Salas et al., 2008), training evaluation is a key measure of its organisational contribution. Kirkpatrick's (1959) model identifies four levels - reaction, learning, behaviour and result – and has been in use for more than 50 years to measure training effectiveness (Saks and Burke, 2012). However, this paper argues that the Kirkpatrick's four levels fails to account for work environment, individual factors, design and delivery training factors, and their impact on training effectiveness (Bates, 2007; Homklin, 2013). For example, in the latter case, little research has focused on the design and delivery factors that can influence the achievement of Kirkpatrick's four training outcomes (Iqbal 2011; Homklin, 2013). Training success as measured for example by improved employees performance is therefore omitted in training evaluation. This paper aims to investigate the influence of the following five proposed moderating variables on design and delivery training factors, namely: training environment, training methods, trainer performance and behaviour, training content and training objectives, and their subsequent impact on Kirkpatrick's four training outcomes (reaction, learning, behaviour and result). The outcome is to identify those training variables that improve employee performance.

Keywords: *training evaluation, reaction, learning, behaviour, result.*

Introduction

As today's business organisations face many challenges due to globalisation such as rapid modernisation, and competition for qualified employees, there is an ever-greater emphasis on employee training and development. As a result, organisations continue investing more in training (Blume et al., 2010). The evaluation of training itself should play a critical role in measuring training outcomes, but it is generally neglected (Giangreco et al., 2009). It has been found that the majority of training evaluation remains limited to trainees' reaction (Saks and Haccoun, 2009). In fact, according to Sugrue and Rivera (2005), a report by the American Society for Training and Development showed that only 12.9% of the largest businesses assess the impact of

training. Wang and Wilcox (2006) concur that few organisations conduct training evaluation.

Kirkpatrick's (1959) four levels model has served as the widely accepted framework for training evaluation for more than fifty years (Saks and Burke, 2012). This model consists of four levels: reaction, learning, behaviour and results. It was assumed correlation between the four levels (Kirkpatrick and Kirkpatrick, 2006). However, not much research validates this assumption (Santos and Stuart, 2003). Furthermore, the Kirkpatrick model has been criticised for ignoring the influence of the work environment, individual factors, and design and delivery factors on training effectiveness (Bates, 2004; Homklin, 2013). The current study aims to investigate in depth the moderating impact of design and delivery factors on the relationship between Kirkpatrick's four levels of training. It also examines in detail the effect of design and delivery factors on training effectiveness.

National oil companies (NOCs) were established by governments throughout the world in the 1970s (Mahdavi, 2014). In the year 2012, NOCs controlled between 73% and 95% of world oil reserves (Mahdavi, 2014), in addition to producing gas (Analoui et al., 2015). The oil and gas industry, with its inherently difficult working conditions, is characterised by a high level of injuries and occupational accidents (Kane, 2010; Khdair et al., 2010). Preventing work accidents was one of their mandates. Furthermore, there is a high demand in oil and gas industry for skilled and experienced employees (Harun et al., 2014). Clearly, this is an industry with a significant need for accurate assessment of employee training outcomes.

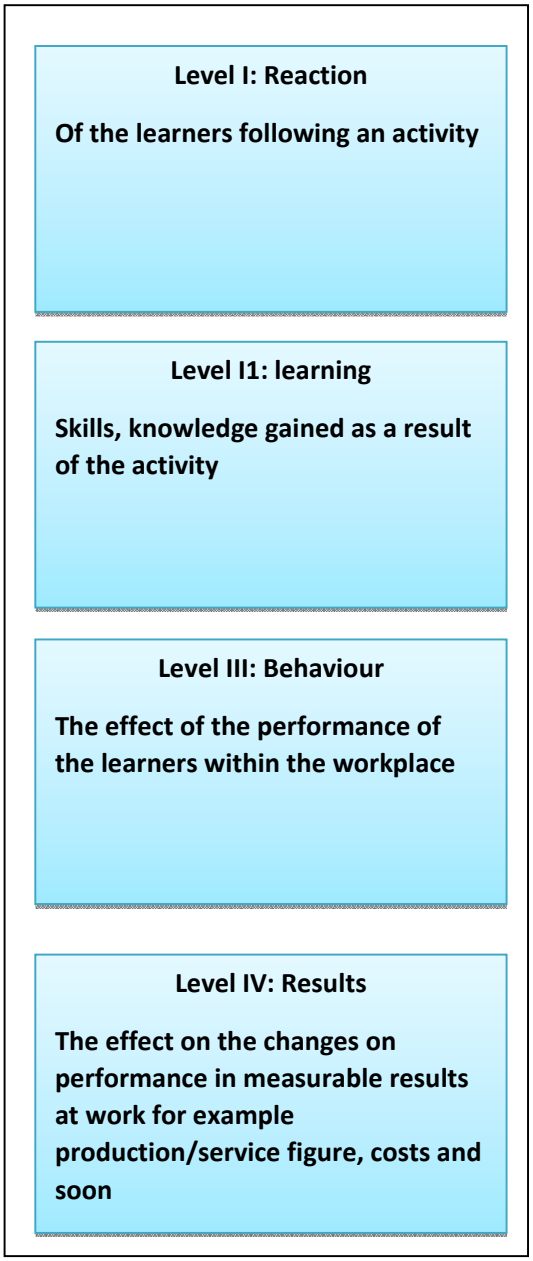
This paper critically reviews the existing literature, investigating the moderating effect of design and delivery factors namely: training environment, training methods, trainer performance and behaviour, training content and training objectives on the relationship between four training outcomes: reaction, learning, behaviour and results.

Literature Review

In this paper, 'training and development' refers to 'the process of systematically developing work-related knowledge and expertise in people for the purpose of improving performance' (Swanson and Holton, 2009, p.226). 'Performance' is defined according to Cascio (1992) as 'an employee's accomplishment of assigned tasks' (Yamoah and Maiyo, 2013, p. 3). Traditionally, organisations have tended to maximise investment in training and development to in order to improve employees' performance (Ameeq and Hanif, 2013). The emphasis inherent in this situation imply a requirement for training evaluation to determine training effectiveness (Collis, 2002), but such evaluation is seldom undertaken.

Previous training evaluation research involving design and delivery factors has examined each of the four levels: reaction, learning, behaviour and results, either individually or on relationship between two levels. For example, Ghosh et al., (2011) found that training design and delivery factors has an impact on the trainee reaction. Diamantidis and Chatzoglou (2012) showed that training components has a significant effect on trainee learning level.

Fig 1- Kirkpatrick's four levels training evaluation model



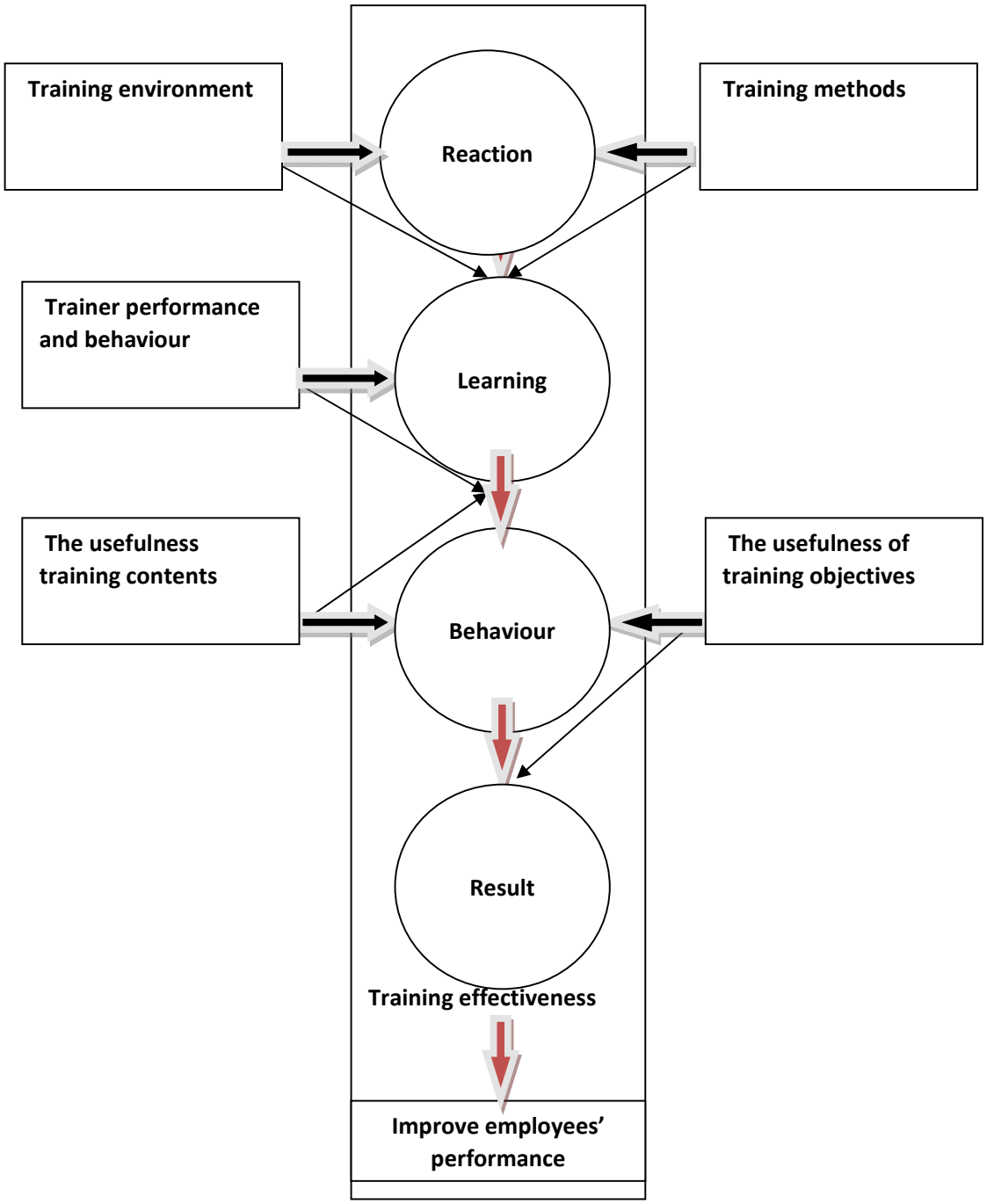
Source: (Adapted Devins and Smith, 2010, p188).

Factors that influence training effectiveness

Conceptual framework of the study

The conceptual framework of this study, shown in Figure 2, is based on Kirkpatrick's four-level model in Figure 1.

Fig. 2: Conceptual Framework of the Study



Effect of training environment on trainee reaction

Training environment concerned with suitability of physical facilities, equipments accommodation, classrooms, etc (Iqbal et al., 2011). In this regard, several researchers showed that training environment has an influence on the trainee satisfaction (Brown and McCracken, 2009; Iqbal et al., 2011). Trainee reaction measures trainee satisfaction with training (Kirkpatrick, 1996). Hence, the following hypothesis can be developed:

H1a: training environment will have a positive influence on the reaction.

Adding to above, training environment has an effect on the learning level as reported by several researchers as (Iqbal et al., 2011; Tan and Hall, 2003). Also, Charney and Conway (2005) suggest that trainer to set training area similar to workplace to motivate participants to acquired knowledge skills and enhance the usefulness of training programme. Thus, the following hypothesis is proposed:

H1b: *training environment will moderate the relationship between reaction and learning in a health and safety training programme.*

Effect of training methods on trainee reaction

Prior research has demonstrated of a significant association between training methods and trainees' satisfaction. For example, Tan and Hall, (2003) found that training methods are linked to reaction level. Good training programme requires using training methods that can support trainees' contributions (Chen et al., 2006). Consequently, the following hypothesis is suggested.

H2a: training methods will have a positive influence on trainee reaction.

Several researcher suggest that training methods influence the gained of learning. Nikandrou et al., (2009) suggest that specific training method used play critical role in training. So the selection of techniques may be determined by the level of experience of the participants and the variances in their ability (Reid and Barrington, 2011). Accordingly, this study's hypothesis is as follows:

H2b: training methods will moderate the relationship between reaction and learning in a health and safety training programme.

Effect trainer performance and behaviour on trainee learning

Previous research has empirically revealed that trainer performance is another determinant that has a significant influence on training effectiveness. For example, Charney and Conway (2005), Lawson (2006) and Nikandrou et al., (2009) reported that the attributes of a trainer (e.g. teaching styles, communication ability, the trainer reliability and effectiveness. etc.) influence trainees' perception of the usefulness of training and help them acquire knowledge and skills that relate to the job. Therefore, this study is hypothesised:

H3a: Positively perceived trainer performance and behaviour will have a positive influence on learning

Previous research has suggested that the moderating of trainer performance on the transfer of learning concerns gained knowledge and applied knowledge to the work place. The trainer motivates trainees to acquire knowledge and skills (Forsyth et al., 1995). Hesseling (1966) argues that the trainer makes a contribution to the effectiveness and success of training. The following hypothesis flows from these findings:

H3b: Trainer performance and behaviour will moderate the relationship between learning and behaviour in a health and safety training programme.

Effect of perceived usefulness of training content on behaviour

Previous research has shown that training content has an impact on the level of acquired knowledge and can work. Bates et al. (2007) showed that perceived content validity was significantly related to training transfer. Yamnill and McLean (2005), and Hutchins (2009) suggested that if the training content and material are relevant to the work needs. This may improve the skills and knowledge of participants, and their understanding of training materials will be greater. So, this study hypothesises:

H4a: The perceived usefulness of training content will have a positive influence on behaviour.

As mentioned above, Bates et al. (2007) found that perceived content validity was significantly related to training transfer. Given that there is a causal relationship between learning and behaviour change, it would appear that training content has a moderating influence on this relationship. Based on previous findings and suggestions, a hypothesis is proposed as follows:

H4b: The Perceived usefulness training content will moderate the relationship between learning and behaviour in a health and safety training programme.

Effect of perceived usefulness of training objectives on behaviour change

There is agreement among researcher that training objectives are significant for training design and planning. Doherty and Bacon (1982) found that there were several benefits of setting training objectives, such as help in designing the training programme and selecting content; presenting the basis for measurement in training programmes; help in the selection of participants for training; and emphasising communication between participants and trainers. The following hypothesis can be developed:

H5a: The perceived usefulness of training objectives will have a positive influence on behaviour.

If trainees perceive that, training objectives are relevant to work tasks, they will apply the learned knowledge and skills gained from the training session, which in turn leads to the organisational results of training such as doing better job, more efficient doing work, doing job more quickly, etc. Hence, the following hypothesis is proposed:

H5b: The perceived usefulness of training objectives will moderate the relationship between behaviour and organisational results in a health and safety training programme.

Conclusion

The aim of the current study was to examine the influence of moderating variables on training design and delivery factors and these factors' subsequent impact on Kirkpatrick's four training outcomes (reaction, learning, behaviour, and results). Furthermore, important constructs were identified and their relationship verified to provide justification for counting them in empirical research. Finally, a proposed conceptual framework was developed to accordable the proposed factors that paper is addressing.

Bibliography

Ameeq, A.-ul & Hanif, F. (2013). Impact of training on employees' development and performance in the hotel industry of Lahore, Pakistan. *Journal of Business Studies Quarterly*, 4(4), pp. 2-5.

Analoui, F., Atamna, A. E. & Analoui, B. D. (2015). Strategic management in a national oil corporation: the case of Libya. *European Scientific Journal*, 11(16), pp. 1857-7881.

Bates, R. & Holton, E. F. (2004)' Linking workplace literacy skills and transfer system perceptions. *Human Resource Development Quarterly*, 15(2), pp.153-170.

Bates, R. (2004). A critical analysis of evaluation practice: the Kirkpatrick model and the principle of beneficence. *Evaluation and Program Planning*, 27,pp. 341-347.

Bates, R.A., Kauffeld, S. & Holton, III, E.F. (2007). Examining the Factor Structure and Predictive Ability of the German-Version of the Learning Transfer Systems Inventory. *Journal of European Industrial Training*, 31(3), pp. 195-211.

Blume, B. D., Ford, J. K., Baldwin, T. T., & Huang, J. L. (2010). Transfer of Training: A Meta-Analytic Review. *Journal of Management*, 36(4), 1065–1105.

Brown, T. C. & McCracken, M. (2009). Building a bridge of understanding: how barriers to training participation become barriers to training transfer. *Journal of European Industrial Training*, 33(6), pp.492-512.

Cascio, W. F. (1992). *Managing human resources* (Vol. 276). New York: McGraw-Hill.

Charney, C., & Conway, K. (2005). *The trainers tool kit*, (2nd ed.). New York: American Management Association.

Chen, C.Y., Sok, P., & Sok, K. (2007). Exploring potential factors leading to effective training: an exclusive study on commercial banks in Cambodia. J*ournal of Management Development*, 26(9), 843-856.

Collis, B. (2002). So how effective is your training? *Beverage Industry*, 93(1), pp.52.

Cooper, A.E. (1994). *Business Process Reengineering and Organisational Change*, MBA dissertation, England: Henley Management College.

Devins, D. and Smith, J. (2010). Evaluation of human resource development', in Gold, J. et al. *Human resource development*: *Theory and practice*. Palgrave Macmillan, chapter 7, pp. 50-145.

Devos, C., Dumay, X., Bonami, M., Bates, R. & Holton, E. (2007). The Learning Transfer System Inventory (LTSI) translated into French: internal structure and predictive validity. I*nternational Journal of Training and Development*, 11(3), pp. 181-199.

Diamantidis, A.D.& Chatzoglou, P. (2012). Evaluation of formal training programmes in Greek organisations. E*uropean Journal of Training and Development,* 36 (9), pp.888 – 910.

Doherty, L. and Bacon, S. (1982). Correctional retraining in the Navy: an evaluation. NPRDC Tech. Rep. 35-82, USA: San Diego. CA.
Forsyth, I., Jolliffe, A. and Stevens, D. (1995). *Evaluating courses: practical strategies for teachers, lecturers and trainers*. London: Kogan Page.
Ghosh, P., Joshi, J. P., Satyawadi, R., Mukherjee, U. & Ranjan, R. (2011).Evaluating effectiveness of a training programme with trainee reaction. *Industrial and Commercial Training,* 43 (4), pp. 247 - 255.
Giangreco, A., Sebastiano, & Peccei, R. (2009). Trainees' reactions to training: an analysis of the factors affecting overall satisfaction with training. *The International Journal of Human Resource Management,* 20 (1), pp. 96-111.
Harris, D. & Tessmer, M. (1992). *Analyzing the instructional setting: environmental analysis.* London: Kogan page.
Harun, H. Salleh, R., Memon, M. A., Baharom, Rosli M. N. and Abdullah, A. (2014). Job satisfaction, organisational commitment and stress among offshore oil and gas platform employees. A*sian Social Science*, 10(11), pp.28-32.
Hesseling, P. M. (1966). Strategy of Evaluation Research in the Field of Supervisory and Management Training, Amsterdam: Van Gorcum.
Homklin, T., Takahashi, Y. and Kriengkrai, T. (2013). Effects of Individual and Work Environment Characteristics on Training Effectiveness: Evidence from Skill Certification System for Automotive Industry in Thailand. *International Business Research,* 6 (12).
Hutchins, H. M. (2009). In the trainer's voice: A study of training transfer practices. *Performance Improvement Quarterly*, 22(1), pp.69-93.
Iqbal, M.Z., Maharvi, M.W., Malik, S.A. and Khan, M.M., (2011). An Empirical Analysis of the Relationship between Characteristics and Formative Evaluation of Training. *International Business Research*, 4(1).
Kane, S. (2010). Iraq's Oil Politics Where Agreement Might Be Found, Suite 200 Washington: United States Institute of Peace 1200 17th Street NW, DC 20036-3011.
Khdair, W. A., Shamsudin, F. M. & Subramanim C. (2011). Improving safety performance by understanding the relationship between management practices and leadership behaviour in the oil and gas industry in Iraq: A proposed model, International Conference on Management and Artificial Intelligence, IPEDR vol.6 IACSIT Press, Bali, Indonesia.
Kirkpatrick, D. (1996). *Evaluation. In R.L. Craig and L.R. Bitten* (eds.), The ASTD Training and Development Handbook. 4th ed. (pp. 294-312). McGraw-Hill : New York.
Kirkpatrick, D. L. & Kirkpatrick J. L. (2006). *Evaluating training programs. 3rd ed.* San Francisco :CA. Berrett-Koehler Publishers, Inc.
Kirwan, C. & Birchall D. (2006). Transfer of learning from management development programmes: testing the Holton model. *International Journal of Training and Development,* 10(4), pp.252-268.
Lawson, K. (2006). *The Trainer's Handbook*. San Francisco: Pfeiffer.
Mahdavi, P. (2014). Why do leaders nationalise the oil industry? The politics of resource expropriation. *Energy Policy*, 75, pp.228-243.
Napier, N. K. & Van Tuan V. (1998). International human resource management in developing and transitional economy countries: a breed apart?' *Human Resource Management Review*, 8(1),pp. 39-77.

Nikandrou, I., Brinia, V. & Bereri, E. (2009). Perspective on practice: trainee perceptions of training transfer: an empirical analysis. *Journal of European Industrial Training*, 23(3),pp. 255-70.
Poulet, R. (2008). Training process effectiveness. J*ournal of Industrial and Commercial Training*, 18(1), pp. 10-13.
Reid, M. A. & Barrington, H. (2011). *Training interventions: Managing employee development.* 7th edition. Jaico Publishing House, Delhi.
Saks, A. M & Haccoun, R. R. (2009). M*anaging performance through training and development*. Toronto: Nelson Education.
Saks, A. M. & Burke, L. A. (2012). An investigation into the relationship between training evaluation and the transfer of training. *International Journal of Training and Development*, 16 (2), 118-12.
Salas, E., Rosen, M. A., Wu, T. S., Silvestri, S., Lazzara, E. H., Lyons, R & King, H. B. (2008). Promoting teamwork: An event-based approach to simulation-based teamwork training for emergency medicine residents. *Academic Emergency Medicine*, 15(11), pp. 1190-1198
Santos, A. & Stuart, M. (2003). Employee perceptions and their influence on training effectiveness. *Human Resource Management Journal* 13(1), pp. 27-45.
Seyler, D. L., Holton, E. F. III, Bates, R. A., Burnett, M. F. & Carvalho, M. A. (1998). Factors affecting motivation to transfer training. I*nternational Journal of Training and Development*, 2, pp.2-16.
Storr, L. & Hurst, K. (2001). Developing a quality assurance framework for in-service training and development. Q*uality Assurance in Education*, 9(3), pp.132-138.
Sugrue, B. & Rivera, R.J. (2005). *2005 State of the Industry Report,* Alexandria, VA: American Society for Training and Development.
Swanson, R.A. & Holton III, E.F. (2009). *Foundations of human resource development*. USA: Berrett-Koether Publishing.
Tan, J. A., Hall, R. J., & Boyce, C. (2003).The role of employee reactions in predicting training effectiveness. *Human Resource Development Quarterly*, 14(4), 397-411.
Velada, R., Caetano, A., Michel, J. W., Lyons, B. D. & Kavanagh, M. J. (2007). The effect of training design, individual characteristics and work environment on transfer of training. *International Journal of Training and Development*, 11(4), pp.282-294.
Wang, G. G. & Wilcox, D. (2006). Training evaluation: knowing more than is practiced. *Advances in Developing Human Resources*, 8(4), pp. 528-539.
Yamoah, E. E. & Maiyo, P. (2013). Capacity building and employee performance. *Canadian Social Science*, 9(3),pp.3-11.