International Journal of Multidisciplinary Research And Studies

Available online at https://ijmras.com/

INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH AND STUDIES
ISSN: 2640 7272
Volume: 05; Issue: 02 (2022)
Doi: 10.33826/ijmras/v05i02.2

Page no.- 10/10

# A USER ACCEPTANCE FRAMEWORK FOR THE ONLINE TEACHING EFFICIENCY RATING SYSTEM OF MINDANAO STATE UNIVERSITY-ILIGAN INSTITUTE OF TECHNOLOGY

**Jogie Vistal** [1]; **Erik Louwe Sala**[2].

[1]*Computer Studies Department Mindanao State University – Marawi, Marawi City, Philippines.*

[2]*Computer Studies Department Mindanao State University – Iligan Institute of TechnologyIligan City, Philippines.*

**ARTICLE INFO**

**Corresponding Author:**
**Jogie Vistal** [1]
[1]Computer Studies Department Mindanao State University – Marawi , City, Philippines.
jogie.vistal@msumain.edu.ph

**ABSTRACT**

The researchers in the field of Information Technology and Information System are of interest in understanding the factors in user acceptance of a new technology. Unified Theory of Acceptance and Use of Technology (UTAUT) is one of the prominent models used in determining the factors of the user acceptance of technology.

In this research, the four constructs of the Unified Theory of Acceptance and Use of Technology (UTAUT) was used namely: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI) and Facilitating Conditions (FC) and associating the user satisfaction to the four constructs of the UTAUT. Survey was used for this inquiry. For data analysis Cronbachs's Alpha was used to check the reliability of the instrument, weighted mean was applied to determine the level of the user satisfaction, Correlation Coefficient technique was utilized to predict UTAUT factors and Somer's delta was used to determine the strength of PE, EE, SI and FC to S. The outcome of this research is the user acceptance framework for the Online Teacher Efficiency Rating of Mindanao State University- Iligan Institute of Technology (MSU-IIT), Iligan City, Philippines. The computed t-test and its associated p–values presented suggest that the independent variables such as PE, EE and FC are statistically significant. Hence, the three constructs affect the user satisfaction.

**KEYWORDS:** UTAUT; User satisfaction; Online Teacher Evaluation.

# "A USER ACCEPTANCE FRAMEWORK FOR THE ONLINE TEACHING EFFICIENCY RATING SYSTEM OF MINDANAO STATE UNIVERSITY-ILIGAN INSTITUTE OF TECHNOLOGY"

## 1. INTRODUCTION

The practice of collecting student ratings of teaching has been widely adopted by universities. When incorporating online methods, online teacher evaluations bring the advantage of saving time and resources over

Traditional paper and pencil method. However, the success of new technology introductions cannot be achieved if the users do not accept and use the technology. Problems might be encountered during integrating a new piece of software into the organization's operational pattern even how many functional tests are performed because of the "mystery factor". For a successful implementation of any application, user acceptance is highly essential.

User acceptance is defined as the demonstrable willingness within a user group to employ information technology for the tasks it is designed to support. Lack of user acceptance is a significant obstacle to the success of new information systems. In fact, users are often unwilling to use information systems which, if used, would result in impressive performance gains. Therefore, user acceptance has been viewed as the pivotal factor in determining the success or failure of any information system project (Davis, 1993).

The continuing quest to ensure user acceptance of technology is an ongoing management challenge and one that has occupied Information System (IS) or Information Technology (IT) researchers to such an extent that technology adoption and diffusion research is now considered to be among the more mature areas of exploration [10]. One of the most prominent models in user acceptance is the Unified Theory of Acceptance and Use of Technology (UTAUT).

One of the goals of every academic institution is to automate every manual processes. In the case of Mindanao State University-Iligan Institute of Technology, most of its processes are already automated. However, Teaching Efficiency Rating (TER) system in Mindanao State University – Iligan Institute MSU-IIT is still carried out manually every semester. As a result, there will be miscalculation of evaluation results, tedious and time-consuming tabulation, high consumption of paper and storage, delay of submitting of evaluation of results to faculty and students have limited time in filling up the evaluation [1]. Thus, MSU-IIT is aiming for an online TER system. In fact, there were already three attempts in migrating it to online and all of these three attempts failed. Those problems seem to suggest that implementation of the Online TER still some have obstacles. Thereby, there is a need for research to understand the factors that influence the adoption and acceptance of Online TER in MSU-IIT in order to formulate strategies that will guarantee effective adoption and implementation of Online TER.

Thus this research uses the developed TER system of [1] for testing and proposes a technology acceptance framework for the online teacher evaluation based on the result of the testing. The researcher conducted tests using Performance Expectancy, effort expectancy (EE), Social Influence, and Facilitating Conditions from UTAUT and seek to integrate the User Satisfaction as the dependent variable.

## A. 2 BACKGROUND OF THE STUDY

One of the major challenges for institutions in implementing application systems is ensuring that the systems are fully and appropriately used that could provide support to the users (raters, facilitators, and decision makers) in adapting inevitable technological and work practice changes. Usage of systems will reflect the reputation and credibility of a particular institution. Thus, this could be one of the competitive advantages of an institution over the other.

In the case of Mindanao State University – Iligan Institute of Technology (MSU-IIT) as an academic institution, it has already implemented automated processes like enrolment, billing, accounting and even payroll system


**Jogie Vistal** [1] ; [1]*Computer Studies Department Mindanao State University – Marawi ,Marawi City, Philippines.*

and is now aiming to implement an online Teacher Efficiency Rating. There had been already three attempts of implementing the teacher evaluation online but still MSU-IIT is using the manual process.

Various theoretical models have been devised to predict adoption and use of technology. Unified Theory of Acceptance and Use of Technology or UTAUT is a framework devised by Venkatesh et.al.to predict technology acceptance in organizational settings. UTAUT advances on the basis of integrating the dominant constructs of eight prior prevailing models that range from human behavior, to computer science. The eight models are: Theory of Reasoned Action, Technology Acceptance Model, Motivational Model, Theory of Planned Behavior, Combined TAM and TPB, Model of PC Utilization (MPCU), Innovation Diffusion Theory, and Social Cognitive Theory.

In this research, the four constructs of the UTAUT will be used namely; Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI) and Facilitating Conditions (FC). The dependent variable in the original UTAUT is the behavioural intention. However, the system usage is mandatory, intention-to-use or usage does not provide a full picture of how such use came about or if it is truly representative of how end-users really feel about using the system. As such, user satisfaction has been suggested as a better measure for success when usage is mandatory [3].

The foregoing leads to the following four baseline hypothesis.

H1: Performance expectancy is positively associated with user satisfaction.
H2: Effort expectancy is positively associated with user satisfaction.
H3: Facilitating conditions are positively associated with user satisfaction..
H4: Social influence is positively associated with user satisfaction

For newly developed systems there must be a technology acceptance test. Information systems, library information studies researchers and practitioners and education researchers have paid considerable attention to technology acceptance. In education there have already researches in e-learning both web and mobile application. However, technology acceptance research related to online teacher evaluation using information systems (IS) theory is very limited, and should gain a momentum.

### B. 3 RESEARCH QUESTIONS

1. What is the level of user satisfaction in using the Online TER system?
2. What are the factors that influence user satisfaction in using Online TER?
3. What is the relationship of PE, EE, SI, FC and TR to user satisfaction?
4. In mandatory environment or usage, what are the factors that influence the acceptance of the Online TER?

### C. 4 GENERAL OBJECTIVE

The main objective of this study is to develop a user acceptance framework for the Online TER based on the four constructs of UTAUT (PE, EE, SI and FC) and User satisfaction on students' perspective.

### D. 5 SPECIFIC OBJECTIVE

The specific objective of this study are the following:

1. to investigate the level of user satisfaction in using the Online TER.
2. to investigate whether Performance Expectancy, effort expectancy (EE), and Facilitating Conditions affect user satisfaction in using Online TER in MSU-IIT;
3. to detect the nature and strength of the relationship among these factors and identify which factors


**Jogie Vistal** [1] ; [1]*Computer Studies Department Mindanao State University – Marawi ,Marawi City, Philippines.*

have influence in affecting on the decision to use Online TER;

## 6 SIGNIFICANCE OF THE STUDY

This study might help the Institute to realize that user acceptance framework of the Online TER system and articulation of the policies and guidelines are important elements in software implementation.

This study of user acceptance and use of technology in an academic environment is significant because it will help determine the factors which influence towards the technology introduced. Hence, the study can provide insights and recommendations to prepare the right environment before introducing a new technology for users in a mandatory setting.

It becomes imperative for process owners and policy makers to determine and understand the factors that could hinder or facilitate the acceptance and usage enabling them to formulate better strategies to improve the adoption of the Online TER. Other academic institutions might use the acceptance model to measure the user acceptance of its online teacher evaluation.

## 7 REVIEW OF RELATED LITERATURE

User acceptance can be defined as the demonstrable willingness within a user group to employ information technology for the tasks it is designed to support. Hamed Taherdoost (2018) defined user acceptance as "an antagonism to the term refusal and means the positive decision to use an innovation" Thus, acceptance theorists are less concerned with unintended uses or non-discretionary use of technologies and more interested in understanding the factors influencing the adoption of technologies as planned by users who have some degree of choice. By developing and testing models of the forces shaping user acceptance, human factors researchers seek to influence the process of design and implementation in a manner that will minimize the risk of resistance or rejection by users [2].

Decision makers need to know the issues that influence on users' decision to use a particular system so they would be able to take them into account during the development phase. It is the common question of both practitioners and researchers that why people accept new technologies. Answering this question may help them to better methods for designing, evaluating and predicting the response of the users to the new technologies.

The difficult adoption of newly introduced technologies and techniques can thus be explained by a lack of understanding. One has to gather information about how individuals and organizations handle this innovation because a successful implementation depends on their acceptance and use.

There are many user acceptance models like TAM and UTAUT. The next section is the discussion of different user acceptance model.

In 2003, Venkatesh, Morris, Davis and Davis created the Unified Theory Use of Technology (UTAUT). UTAUT model identifies the key factors in acceptance of ICT as measured by behavioural intention to use the technology and actual usage. The four determinants of ICT acceptance are performance expectancy (PE), effort expectancy (EE), social influence (SI) and facilitating conditions (FC).

PE is the degree to which an individual believes that using a particular system would improve his or her job performance. Venkatesh et al. (2003) integrated five concepts from various models into the construct of performance expectancy, namely perceived usefulness, extrinsic motivation, job-fit, relative advantage and outcome expectations.

EE is the degree of simplicity associated with the use of a particular system. Similar to performance expectancy, Venkatesh et al. (2003) captured three constructs from other models into this concept, that is perceived ease of use, complexity and ease of use.

SI is the degree to which an individual perceives that others believe that he or she should use a particular system. Social influence plays an important role in organizations, especially when a behaviour is not volitional; top management, direct supervisors, and peers do have influence in organizational settings. Ignoring those constructs limits our understanding of the actual adoption process. The three concepts included in social influence are: subjective norm, social factors and image.

FC individual believes that an organizational and technical infrastructure exists to support the use a particular system. A fourth construct, facilitating conditions, is a direct determinant of the actual use, but cannot be used to predict behavioral intention [6]. This definition captures concepts embodied by three different constructs: perceived behavioral control (TPBDTPB, C-TAM-TPB), facilitating conditions (MPCU), and compatibility (IDT). Each of these constructs is operationalized to include aspects of the technological and/or organizational environment that are designed to remove barriers to use.

According to Chang et.al (2010) that the majority of prior research has examined technology adoption in voluntary use contexts, the existing models are not appropriate for explaining technology acceptance in mandatory use contexts. In particular, the traditional notion of "use" is not the appropriate dependent variable in mandatory use settings because users must use the system to perform their job functions and there are no other alternatives to using the system. Furthermore, users' attitudes toward using a technology and their intentions to use the technology are unrelated in mandated use environments. Instead, user satisfaction, not behavioural intention to use the system, is the more appropriate dependent variable when the system in question is large scale and integrated, and its use is mandated As user satisfaction is widely recognized as a key metric of IS success understanding factors, including expectations and experiences of using the systems, that influence user satisfaction has important implications for organizations.

Additionally, Wibowo (2017) agreed that the behavioural intention could be associated with the user satisfaction. They stated that satisfaction is similar to an attitude, and can be assessed as the sum of the satisfactions with the various attributes of the product or service.

In this study user satisfaction as a dependent variable instead of using behavioural intention. The researcher suggested that user satisfaction should be measured using four instruments of performance expectancy, effort expectancy, social influence and information system quality and future research should attempt to identify additional components that are specific to mandatory usage of information system [9].

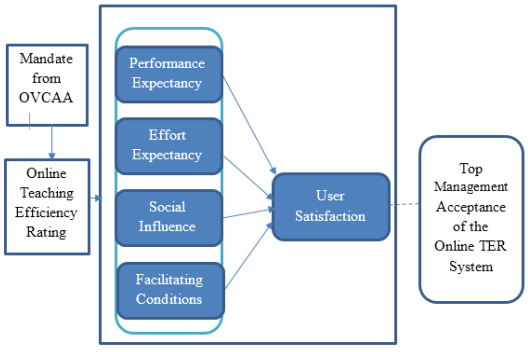


**Figure 2.1. Conceptual Model of this current study**

## 9 METHODOLOGY

Survey was conducted for this inquiry because it lined up with the research objectives of building the understanding about the usage of a mandatory environment, by linking well-established user acceptance concepts like


**Jogie Vistal** [1] ; [1]*Computer Studies Department Mindanao State University – Marawi ,Marawi City, Philippines.*

performance expectancy, effort expectancy, social influence and facilitating conditions to user satisfaction.

Items were adapted from established scales, and measured using five-point Likert scale response categories ranging from strongly disagree (1) to strongly agree (5). Hypothesis testing was conducted in this phase through a pilot testing.

| Model | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | .070 | .113 | | .617 | .538 |
| P | .183 | .041 | .181 | 4.426 | .000 |
| E | .402 | .047 | .395 | 8.556 | .000 |
| S | .024 | .032 | .024 | .754 | .451 |
| F | .383 | .044 | .367 | 8.794 | .000 |

On the other hand, random sampling was used for the selection of the participants. Random sampling is a probability sampling which uses randomization and takes steps to ensure all members of a population have a chance of being selected. The sample size was computed using the Slovin's formula which has a confidence level of 95% (which give an alpha level of 0.05) and 5% margin of error.

Currently, the total number of undergraduate and graduate students in MSU-IIT is 7635, thus, the sample size needed for the actual data gathering is 338.

The students and faculty were informed about the Online TER system and survey through SMS blast done by the head of the Web Development Team. Data gathering started on May 17 to May 24, 2019.

The students were informed about the Online TER system and survey through an SMS blast. The head of the Web Development Team of Information and Communication Technology Center sent the message by college.

Students were required to log in first in their MY.IIT account. After logging in, a consent form page will appear. They have to read the statement carefully and if they agreed, they can proceed to the evaluation. After evaluating the teachers, the student rated the system by clicking the TER Survey Questions link.

The design was finalized through the data gathered and analyzed. After that, the reliability and validity was checked using the Cronbachs's Alpha to make sure the questions have consistency. The weighted average was used to determine the level of the user satisfaction. To properly predict the UTAUT factors, Correlation Coefficient technique is applied and to determine the strength of PE, EE, SI and FC to S, Somer's delta was used.

## 10 RESULTS AND DISCUSSION

The data collection lasted for one week. Through the SMS blast, there were 381 students who responded to the survey out of 1220 students who evaluated their teachers. However, only 378 samples were considered. There were three samples deleted because it was observed that these sample are exactly the same with other rows. This gives an impression that there might be students who took the survey twice.

The statistical analysis shows that a significance level close to zero means that an independent variable is significant to the model otherwise it is insignificant. In this study, the results in Table 4.21 show that PE, EE and FC have a p–value of 0.00 while SI has a p-value of 0.451.

**Table 4.1 Statistical Analysis of the Significance of the Independent Variable**


**Jogie Vistal** [1] ; [1]*Computer Studies Department Mindanao State University – Marawi ,Marawi City, Philippines.*

This shows potential correlation between the independent variables and dependent variable. If the P–value is close to zero (0), it means that the independent variables are statistically significant to the model. With the calculated associated P-value reveals that PE, EE and FC are associated to user satisfaction and SI has no relationship to the user satisfaction.

Thus, the analysis establishes the regression equation of

***US = 0.183PE + 0.402EE + 0.383FC***

This equation shows that as the degree to which a person believes that using the Online TER would enhance his or her performance increases the user satisfaction also increases. If the degree to which a person believes that using the Online TER is easier to use or free of effort increases user satisfaction also increases and if the objective factors in the environment that observers agree and make an act that the Online TER is easy to do including the provision of computer support. increases the user satisfaction also increases.

| Hypothesis | | Result |
|---|---|---|
| **H1** | *Performance expectancy is positively associated with user satisfaction* | **Supported** |
| **H2** | *Effort expectancy is positively associated with user satisfaction* | **Supported** |
| **H3** | *Social influence is positively associated with user satisfaction* | **Rejected** |
| **H4** | *Facilitating conditions are positively associated with user satisfaction.* | **Supported** |

The Somer's D value indicates the strength of the relationship of the PE, EE and FC. With the computed results, it suggests that PE and EE have strong relationship to the user satisfaction and consistent in the pilot testing FC have a weak relationship.

**Table 4.3. Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .892[a] | .796 | .794 | .41420 |

a. Predictors: (Constant), F, S, P, E

b. Dependent Variable: U

**Table 4.2. Association of the PE,EE,SI FC and User Satisfaction**

The model summary shown in Table 4.3 reports the strength of the model. The R value which is .892 represents the simple correlation and can measure the quality of the prediction of the user satisfaction. The R2 value indicates how much of the total variation in the dependent variable, in this case, it is .796. The result of the model improves to 0.146 compared to the pilot testing result which is .650.

In the context of the user acceptance of the Online TER system, the study concludes the acceptance of the hypotheses: the aspects of user satisfaction are related to the aspects of performance expectancy, effort expectancy, and facilitating conditions. Table 4.4 shows the hypothesis testing result.

**Table 4.4 Hypothesis Testing Result**

| | Somer's D value | P value | Interpretation |
|---|---|---|---|
| p-satisfaction | 0.660 | 0.000 | Significant |
| e | 0.773 | 0.000 | Significant |
| S | 0.463 | 0.000 | Significant |
| F | 0.463 | 0.000 | Significant |


**Jogie Vistal** [1] ; [1]*Computer Studies Department Mindanao State University – Marawi ,Marawi City, Philippines.*

The hypothesis testing result is based on the statistical analysis of the significance of the independent variable shown in Table 4.1. To determine whether an independent variable is significant, the p-value must be checked. P-value which is close to zero will make the independent variable significant. In this case, PE, EE and FC have a p-value of zero (0). Thus, the three constructs which are the PE, EE and FC are positively associated with the user satisfaction while the SI fell short of statistical significance with a p-value of 0.451. Thus, SI does not contribute to the model or does not affect the user satisfaction. Portion of the next chapter based on the observation tackles the reasons why SI is not significant to the model. The figure below shows the user acceptance framework of this study.

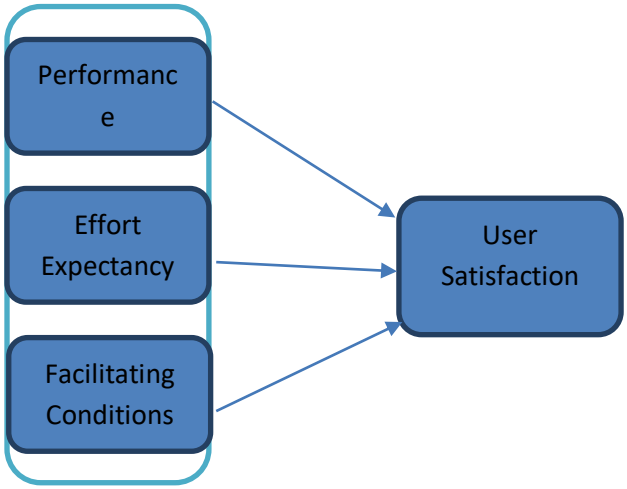


**Figure 4.5.User Acceptance Framework of this study**

## 11 CONCLUSION AND RECOMMENDATION

In the user acceptance context, the result shows that PE, EE, FC are predictors of the user satisfaction. The ability of a system to assist users to achieve their tasks quickly will ultimately motivate users to adopt or accept the system [5]. The findings revealed that PE is positively associated with user satisfaction. Thus, PE is a strong predictor both in voluntary and mandatory usage.

The findings revealed that EE is a strong predictor of user satisfaction for a newly implemented system but not on a sustained usage. This supports the finding of Venkatesh (2003).

Social influence is not significant in voluntary contexts. However, each becomes significant when use is mandated [8]. Nevertheless, result shows that SI appears to be insignificant to user satisfaction. There are two reasons that affect the result of the SI. First, the nature of participation of the students. The usage of the Online TER system is mandatory where students are required to evaluate their teachers. However, during the final testing the implementation of the Online TER system was voluntary in nature. This implementation was followed after the response from the Office of the Vice Chancellor that the participation of the students is only voluntary. See appendix E. This study has the impression that the way it was participated by students affects the result in SI. Secondly, it has something to do with the questionnaire formulation. This study considers only the subjective norm and social factors mechanisms. In addition the content of the questionnaire does not suffice to the usage of the Online TER system during the final testing.

Findings on the actual testing, have direct implications on User Satisfaction in a mandatory environment such as online TER. Utilizing UTAUT as theoretical framework, Performance Expectancy, Effort Expectancy and Facilitating Conditions, have significant influence on the acceptance of user. Findings of this study revealed that the students found the system very helpful for them to evaluate their teachers. They are also willing to finish the evaluation regardless of the number of subject teachers. They agreed that the system is easy to use. They knew where to start and how to end the system. Thus, this system does not need to be supervised. It is enough for them


**Jogie Vistal** [1] ; [1]*Computer Studies Department Mindanao State University – Marawi ,Marawi City, Philippines.*

that they are aware of the schedule for the evaluation of their teacher.

## ACKNOWLEDGMENTS

I would like to express my sincerest thanks to my adviser Erik Louwe R. Sala. His patience, guidance, and mentoring has made the completion of this research possible. His advice and encouragement have been invaluable and his trust in me has boost the accomplishment of this research.

Furthermore, I am thankful also to my panelists and critics of my paper, Dante D. Dinawanao and Cenie Vilela-Malabanan, Ph.D. Their insights helped me a lot to improve my paper. Their comments and suggestions are highly appreciated and considered.

## REFERENCES

[1] Abamonga, M. M., Lustado, F., & Mejias, R. (2014). *Hybrid Teaching Evaluation System for the School of Computer Studies.* Iligan City.

[2] Dillon, A. (2001). User Acceptance of Information Technology. *https://www.researchgate.net/publication/279683883*, 3.

[3] Huang, K.-Y., Choi , N., & Chengalur-Smith, I. (2010). Cultural Dimensions as Moderators of the UTAUT Model: a Research Proposal in a Healthcare Context . *Proceedings of the Sixteenth Americas Conference on Proceeding on Information Systems* ,

[4] Manchanda, A. (n.a). A Review of Information System Success Models. *International Journal of Innovative Research in Technology & Science(IJIRTS)*, 1-2.

[5] Muhammad Arif, K. A. (2017). Factors affecting student use of Web basedd . 11.

[6] Trybou, J. (2017). Performance Expectancy, Effort Expectancy And Social Influence As Factors Predicting The Acceptance Of (Non-) Fluoroscopy-Guided Positioning For Radiographs, And The Relationship With Leadership. *Academiejaar*, 10.

[7] Venkatesh, V. (May 2016). Unified Theory of Acceptance and Use of Technology: A Synthesis and the Road Ahead. *Journal Association for Information Technology*, 5.

[8] Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer Acceptance And Use Of I Nformation T Echnology : E Xtending The Unified Theory Of Acceptance And Use Of Technology. *Mis Quarterly*, 59.

[9] Wibowo, T. (2017). Study of User Acceptance and Satisfaction of a Mandatory Government-Regulated Information System. *CommIT (Communication & Information Technology) Journal*, 41-43.

[10] Williams, M. D. (2015). The Unified Theory of Acceptance and Use of Technology: A Literature Review. *Journal of Enterprise Information Management*, 3.

[11] van den Dool, H. M., S. Saha, and ˚A. Johansson, 2000: Empirical orthogonal teleconnections. J. Climate, 13: 1421–1435.

[12 ]Vinnikov, K. Y., P. Y. Groisman, and K. M. Lug- ina, 1990: Empirical data on contemporary global climatic changes (temperature and precipitation). J. Climate, 3: 662–677.

[13 ]Wigley, T. M. L., J. K. Angell, and P. D. Jones, 1985: Analysis of the temperature record. in: Detecting the Climatic Effects of Increasing Carbon Dioxide: DOE/ER-

0235, MacCracken, et al. Eds., USA Department of Energy,
55–90.