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Modeling Literacy-Based Self-Efficacy in Digital Humanities: An Exploratory Study

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Abstract:
Due to the unprecedented Covid-19 outbreak, the learning must be online since March 2020. Most faculties, study programs, lectures, and students were unprepared to embrace online learning. Online learning requires students' self-efficacy. Self-efficacy is a student's perception of their ability to use a tool to complete a given task, achieve a goal, or overcome obstacles in learning. Technology exposure of students in the social sciences is likely to be different from those in science and technology, including in the use of online learning. This study examined the factors that influence the success of online education in the digital humanities field and modeled these factors to measure students' self-efficacy based on technological literacy. An online survey was employed to gather data. The survey instrument was developed based on the variable operationalization. The respondents, who participated voluntarily, were graduate students from humanities study programs of one university in Yogyakarta. There were 89 responses. Data analysis was conducted using SmartPLS Version 3.3. Based on the structural equation modeling of self-efficacy, internet experience, rewards, and attitudes positively influenced digital and visual literacy; internet experience and rewards influenced tool literacy. This exploratory study shows that self-efficacy modeling can be presented in this study. The exploration of this study indicates that the model generated in this study can be applied in other fields of study, especially the social sciences. In various studies, self-efficacy is usually seen as a single construct and is operationalized according to the focus and objectives of the study. One aspect of e-learning is technology. This study focuses on the self-efficacy of e-learning technology, namely technological literacy. Subsequently, technology literacy was manifested as three different constructs: digital, tool, and visual.

Keywords: modeling, digital humanities, self-efficacy, technological literacy, exploratory study.

数字人文学科中基于素养的自我效能建模：一项探索性研究

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摘要：
由于史无前例的新冠肺炎爆发，自 2020 年 3 月起必须在线学习。大多数教师、学习计划、讲座和学生都没有准备好接受在线学习。在线学习需要学生的自我效能感。自我效能感是学生对自己使用工具完成给定任务、实现目标或克服学习障碍的能力的看法。社会科学学生的技术接触可能与科学技术学生不同，包括在线学习的使用。本研究考察了影响数字人文领域在线教育成功的因素，并对这些因素进行建模，以基于技术素养衡量学生的自我效能感。一项在线调查被用来收集数据。该调查工具是基于变量操作化开发的。自愿参加的受访者是日惹一所大学人文研究项目的研究生。有 89 条回复。使用智能 PLS 3.3 版进行数据分析。基于自我效能、互联网体验、奖励和态度的结构方程模型对数字和视觉素养产生积极影响；互联网体验和奖励影响了工具素养。这项探索性研究表明，自我效能模型可以在本研究中提出。本研究的探索表明，本研究产生的模型可以应用于其他研究领域，尤其是社会科学领域。在各种研究中，自我效能通常被视为一个单一的结构，并根据研究的重点和目标进行操作。电子学习的一个方面是技术。本研究侧重于电子学习技术的自我效能，即技术素养。随后，技术素养表现为三种不同的结构：数字化、工具化和视觉化。

关键词：建模、数字人文、自我效能、技术素养、探索性学习。

1. Introduction

The development of information technology has brought society into the digital era. Various information technology products produce data and information in digital format. The application of technology provides many advantages, especially in the humanities field, which can collaborate on knowledge to get more tangible results (Robinson, 2016).

Technology has an essential role in the transformation of learning in higher education. Apart from market needs, disruptive learning transformation also occurs due to the impact of the Covid-19 pandemic. The conventional face-to-face system is converted into online learning through the Internet (Alazzam et al., 2021). In the traditional classroom model, various digital platforms carry out the online learning system to minimize contact and crowds. Various aspects of learning support must be adaptive to suit these conditions. Lecturers, students, education staff, and other supporting staff are stakeholders who must quickly master several literacies. These literacies are necessary for a better online learning process and experience. The improved learning process and experience are essential to obtaining student outcomes and achievements comparable to face-to-face learning (Rorimpandey & Midun, 2021). Applying technology in specific fields will have a positive and endemic impact. The positive effects of online learning of students who study from home, among others, can minimize transportation costs, reduce congestion, especially when students leave and return from school/campus, and increase creativity. However, the negative effect of online learning is that students will feel bored because learning is not enjoyable (Dhawan, 2020).

1.1. Online Learning

Online learning is learning through the Internet and computer, interacting with students using the system, and learning delivered in an online environment (Singh & Thurman, 2019). Online learning facilitates the adoption of new ways to understand and develop understanding to represent all or some educational models often applied. With electronic media, learning content delivery will improve students' knowledge, skills, and performance.

Online learning provides many benefits, especially during the Covid-19 pandemic, which requires all parties to comply with health protocols. Under such a situation, students perceive online learning as safer and more comfortable. The above case demonstrates students' good perception of online learning during the COVID-19 pandemic (Akuratiya & Meddage, 2020). Online learning also allows opening up new markets for schools, universities, and institutions. Adult learners may enjoy flexibility when balancing work, study, and family responsibilities (Castro & Tumibay, 2021). While there may be some benefits of online learning in engagement, online learners also make sacrifices for an engaging educational experience (Dumford & Miller, 2018). Online learning raises several complaints, as stated by Dhawan (2020). These complaints include students who often experience technical problems and have difficulty understanding the learning objectives.

1.2. Digital Humanities

Digital humanities are a social science that uses technology to do its work. It can also be called interdisciplinary about the digital dimension related to tools, methods, and objects of study (Longhi, 2021). As humans, we can easily link our ability to see and understand the surrounding environment with the ability to express ourselves in natural language. Matching visual data and natural language pose many challenges in computer vision and multimedia (Cornia et al., 2020). Digital humanities create a communication network that collaborates with technology to strengthen knowledge without changing humanistic values (Pacheco, 2022). Thus, digital humanities are methodological and have an interdisciplinary scope. Digital Humanities involves studying, analyzing, synthesizing, and presenting information electronically. Researchers in the humanities sciences use physical and digital information differently than researchers in science and technology. Humanities researchers need more information than just the date and type of publication.

Research on digital humanities covers several research areas, including arts, humanities, information, and computer science. Digital humanities is a science that collaborates with several other fields of science (Edmond & Lehmann, 2021).

Digital humanities are computational humanity obtained from a historical perspective, including computational theory, information and communication, and algorithms, from humanities (Orlandi, 2021). Digital humanities are science that performs digital visualization techniques applied to humanities values or technology in the humanities (Münster & Terras, 2020). Examples of computational methods used in digital humanities research are large data sets analysis and digitized sources, data visualization, text mining, and statistical analysis of humanities data (Therón et al., 2018). Computational humanities are also used to visualize historical events and subjects according to the space and time used by researchers and designed in an attractive, fun, and informative way (Filipov et al., 2021).

1.3. Students' Self-Efficacy

Online learning requires students' self-efficacy. Self-efficacy in online education is students' possible use of a system. Whether the students will use a particular online learning system is determined by their attitudes and perceptions of its ease of use. The easier a system is to use, the more likely the student feels comfortable using it. Self-efficacy is crucial during online learning (Udin et al., 2022). Computer self-efficacy, for example, makes handling technical obstacles independently easier.

The distribution of information in online learning requires students' self-efficacy. Self-efficacy is a student's perception of their ability to use a tool to do a given task, achieve a goal, or overcome obstacles in learning. Various disciplines certainly have different factors in attaining online learning success. Learning by utilizing digital technology has been widely applied in science and technology fields. In the humanities disciplines, digital technology in the learning process has not been as massive as the implementation in science and technology. Information technology also affects learning methods in scientific fields. Online learning in the humanities has specificities that require study. One thing that needs to be studied is the factors that determine the success of online education in the humanities field.

Students' self-efficacy in the humanities field is generally different from those in science and technology. Students in science and technology are generally accustomed to using various information technology product tools to assist them in the learning process. On the other hand, students in the humanities field are generally less exposed to these tools. This situation creates a gap in the self-efficacy of students in both areas. This study aims to model student self-efficacy manifested as technological literacy, namely digital, tool, and visual literacy.

Currently, there are more uses of online learning whose curriculum is directly related to the digital humanities. This situation makes knowledge transfer in digital humanities development quite relevant. The knowledge transfer happens in how data, information, and knowledge are recorded to be shared with many people online (Aladyshkin et al., 2019).

1.4. Factors Affecting Self-Efficacy

Several studies have identified factors influencing self-efficacy. Those factors are the Internet experience and prior knowledge (Kim & Park, 2018), feedback and engagement (Peechapol et al., 2018), reward (Liou et al., 2016), social influence (Al Kurdi et al., 2020), motivation and attitude (Hong et al., 2017), and access flexibility to the learning resource material (Quispe et al., 2020). This finding correlated with Bandura's (1971) view that one's experience of success influences self-efficacy. Thus, the more experience students have in online learning, the higher their self-efficacy in successfully running the online learning process, including various things. One of them is understanding material delivered during the online learning process. Feedback and awards provided by educators to their students also positively influence the formation of students' self-efficacy in the online learning process. A study by Liou et al. (2016) confirmed this view that rewards can increase the self-efficacy of the Yamol online test community. Furthermore, self-efficacy increases if students get feedback (Peechapol et al., 2018). Social influence is changes in one's thoughts, emotions, attitudes, or behavior caused by social network members' or peers' recommendations, perspectives, or conduct (Kim et al., 2018). Motivation is the desire to try to achieve a goal. Some studies, e.g., by Hong et al. (2017), showed that motivation was the main factor affecting students' self-efficacy toward online learning. People with high technological self-efficacy would positively perceive e-learning and vice versa (Latip et al., 2020).

The theoretical basis of this study is the Social Learning Theory (SLT) (Bandura, 1971). This theory explains how people think and the factors that determine their behavior. SLT is a category of learning theory based on the belief that human behavior is determined by a three-way relationship between cognitive factors, environmental influences, and behavior. The source of this theory explains that social learning occurs through four main stages: close contact, imitating superiors, understanding concepts, and the behavior of others who become role models. The term 'social' in SLT refers to the context of learning.

2. Research Method

2.1. The Proposed Model

The introduction explains that this research aims to model self-efficacy, manifested as a digital, tool, and visual literacy. The literature review mentions that eight factors can affect self-efficacy. The eight factors are internet experience, engagement, feedback, social

influence, attitude, motivation, and access flexibility to the learning resources. Equations (1), (2), and (3) show the proposed model for digital literacy (*DL*), tool literacy (*TL*), and visual literacy (*VL*), respectively.

$$DL = \sum_{i=1}^{8} a_i X_i + C_1 \quad (1)$$

$$TL = \sum_{i=1}^{8} b_i X_i + C_2 \quad (2)$$

$$VL = \sum_{i=1}^{8} c_i X_i + C_1 \quad (3)$$

In Equations (1), (2), and (3), X_1, X_2, X_3, X_4, X_5, X_6, X_7, and X_8 are internet experience, engagement, feedback, reward, social influence, attitude, motivation, and access flexibility, respectively; $a_1 \ldots a_8$, $b_1 \ldots b_8$, and $c_1 \ldots c_8$ are the respective regression coefficient, C_1, C_2, and C_3 are constant for *DL*, *TL*, and *VL*, respectively.

2.2. Survey Questionnaires and Respondents

In a quantitative method, a valid and reliable instrument is essential. Therefore, each variable needs to be operationalized correctly and adequately to get the survey instrument that meets the validity and reliability criteria. Subsequently, the survey questionnaire is constructed based on this operationalization. Table 1 presents the variable operationalization.

Four indicators manifest each latent variable stated in Table 1, and each indicator was measured using a 5-point Likert scale. In this study, the Likert scale is expressed as a bipolar scale. For all indicators, except the indicators of variable Internet Experience, a value of 1 means "Strongly Disagree" and 5 means "Strongly Agree." Specifically, for the Internet Experience, a value of 1 represents the "Novice" level, and 5 represents the "Expert" level. Due to the limited number of pages, the complete questionnaire was not included in this article. The interested parties should contact the authors to get the questionnaire. The survey was conducted using Google Forms and conducted online.

Table 1. Variable operationalization

Latent variable	Operationalization
Digital Literacy	Student's perception of their level of understanding of digital literacy
Tool Literacy	Student's perception of their level of understanding of tool literacy
Visual Literacy	Student's perception of their level of understanding of visual literacy
Internet Experience	Student's perception of the level of experience they have in terms of using the Internet
Engagement	Student's perception of the extent to which they feel involved in online learning
Feedback	Student's perception of the extent to which they received helpful information or criticism during their online learning
Reward	Student's perception of the incentives they get related to their activeness in online learning
Social Influence	Student's perception of the influence that they feel from their friends or people around them when they take part in online learning
Attitude	Student's perception about the level of liking or disliking of online learning activity
Motivation	Student's perception of factors that encourage them to participate in online learning
Access Flexibility	Student's perception of the ease of access to learning resources needed

Respondents involved in this study were master's students from the field of social humanities at a university in Yogyakarta. Respondents were invited through several social media, and they participated voluntarily. The number of the respondents was 89. All respondents answered the questionnaire completely, so the data from all respondents deserved to be analyzed.

3. Results and Discussion

3.1. Data Analysis

Figure 1 presents a path model representing Equations (1), (2), and (3) to facilitate data analysis. Twenty-four paths connect each exogenous variable ($X1$ to $X8$) to each endogenous variable (*DL*, *TL*, and *VL*). For example, Label a1 presents the path between $X1$ to DL, denoted as $X1 \rightarrow$ DL, a2 shows the path between $X_2 \rightarrow$ DL, b3 is $X3 \rightarrow$ TL, b4 is $X4 \rightarrow$ TL, and so on.

Structural equation modeling (SEM) is a quantitative analysis technique that can be adopted widely and in-depth because it can explain and predict the investigations carried out (Law & Fong, 2020). The first stage, called the outer model analysis or measurement model, is used to test the validity and reliability of the survey instruments. The second stage, the internal model analysis or structural model, determines the path coefficients, their significance level, and other related parameters.

In the outer model test, the first step is to check the loading of each indicator to its corresponding latent variable and cross-loading to other latent variables. The loading value of each indicator to its corresponding latent variable is at least 0.7 (Barclay et al., 1995). For every indicator, the value of the indicator's cross-loading to the other latent variables must be smaller than the value of the indicator's loading to the corresponding latent variables. Due to the limited page width, the loading and cross-loading test is presented in the Appendix. The Appendix shows that loading and cross-loading are deemed suitable.

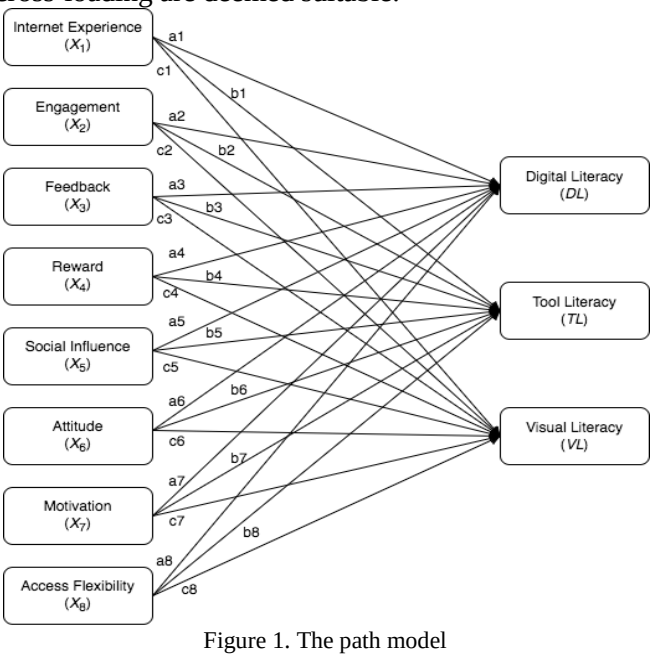

Figure 1. The path model

The validity and reliability of the survey instrument can be assessed from their composite reliability,

Cronbach's alpha, and average variance extracted (AVE). The value of composite reliability and Cronbach's alpha must be at least 0.7, and the AVE value of at least 0.5 (Hair et al., 2017). Table 2 presents the validity and reliability of the instruments used in this study that met the specified criteria.

Table 2. Validity and reliability of the survey instrument

Latent Variable	Cronbach's Alpha	Composite Reliability	AVE
DL (Digital Literacy)	0.945	0.961	0.860
TL (Tool Literacy)	0.961	0.972	0.897
VL (Visual Literacy)	0.978	0.984	0.939
X_1 (Internet Experience)	0.930	0.950	0.826
X_2 (Engagement)	0.888	0.923	0.751
X_3 (Feedback)	0.849	0.899	0.690
X_4 (Reward)	0.918	0.942	0.803
X_5 (Social Influence)	0.910	0.937	0.787
X_6 (Attitude)	0.928	0.948	0.821
X_7 (Motivation)	0.923	0.946	0.816
X_8 (Access Flexibility)	0.884	0.920	0.743

The second data analysis stage using SmartPLS analyzes the structural or inner model to calculate the path coefficients and their significance level. Structural model analysis was carried out using a significance level of α = 0.05. Table 3 shows the results of the structural model analysis as depicted in Equation (1) to Equation (3).

Table 3. Path coefficients (β) and their significant values (α = 0.05)

Label	Path	Path coefficient	*t*-value	*p*-value
a1	Internet Experience → Digital Literacy	0.289	3,297	0.001
b1	Internet Experience → Tool Literacy	0.241	2,359	0.019
c1	Internet Experience → Visual Literacy	0.241	2,869	0.004
a2	Engagement → Digital Literacy	-0.156	1,111	0.267
b2	Engagement → Tool Literacy	0.027	0.137	0.891
c2	Engagement → Visual Literacy	0.164	1,007	0.314
a3	Feedback → Digital Literacy	-0.014	0.122	0.903
b3	Feedback → Tool Literacy	-0.052	0.380	0.704
c3	Feedback → Visual Literacy	-0.016	0.120	0.905
a4	Reward → Digital Literacy	0.306	3,146	0.002
b4	Reward → Tool Literacy	0.279	2,185	0.029
c4	Reward → Visual Literacy	0.249	2,080	0.038
a5	Social Influence → Digital Literacy	0.085	0.777	0.438
b5	Social Influence → Tool Literacy	0.061	0.606	0.544
c5	Social Influence → Visual Literacy	-0.002	0.022	0.982
a6	Attitude → Digital Literacy	0.503	3,762	0.000
b6	Attitude → Tool Literacy	0.218	1,291	0.197
c6	Attitude → Visual Literacy	0.369	2,393	0.017
a7	Motivation → Digital Literacy	0.130	0.989	0.323
b7	Motivation → Tool Literacy	0.139	0.590	0.555
c7	Motivation → Visual Literacy	0.034	0.208	0.836
a8	Access Flexibility → Digital Literacy	-0.028	0.241	0.810
b8	Access Flexibility → Tool Literacy	0.030	0.189	0.850
c9	Access Flexibility → Visual Literacy	-0.068	0.492	0.623

The results of the structural model analysis shown in Table 3 can be explained as follows. The shaded cells in the *p*-value column indicate that the relation stated in the path column is significant with the path coefficient stated in the path coefficient column. For example, the third row shows that the internet experience has a significant positive effect on visual literacy. This positive effect is indicated by the path coefficient (β) = 0.241 and *p*-value = 0.004. On the other hand, the unshaded cells in the *p*-value column indicate that the relation stated in the path column is not significant. By referring to Table 3, Equations (1), (2), and (3) become Equations (4), (5), and (6), respectively.

$$\textit{Digital Literacy} = 0.289\ \textit{Internet Experience} + 0.306\ \textit{Reward} + 0.503\ \textit{Attitude} + C_1 \quad (4)$$

$$\textit{Tool Literacy} = 0.241\ \textit{Internet Experience} + 0.279\ \textit{Reward} + C_2 \quad (5)$$

$$\textit{Visual Literacy} = 0.241\ \textit{Internet Experience} + 0.249\ \textit{Reward} + 0.369\ \textit{Attitude} + C_3 \quad (6)$$

The other results of the structural model analysis showed that the coefficient of determination, R^2, for digital literacy, tool literacy, and visual literacy are 0.622, 0.446, and 0.508, respectively. The value of R^2 shows the percentage of variation in the dependent variable determined by the change in the independent variable. For example, the R^2 value for digital literacy is 0.622, indicating that about 62.2% of the variation in digital literacy scores is determined by internet experience, rewards, and attitudes. The same is similar for tool literacy and visual literacy.

3.2. Discussion

One critical success factor in online learning is students' self-efficacy. Previous studies showed that several factors such as internet experience (Kim & Park, 2018), feedback and engagement (Peechapol et al., 2018), reward (Liou et al., 2016), social influence (Al Kurdi et al., 2020), and students' motivation and attitudes (Hong et al., 2017) affect self-efficacy.

Data analysis shows that internet experience and rewards positively influence digital, tool, and visual literacy. At the same time, students' attitudes positively influence digital literacy and visual literacy. These positive influences are evident from their respective path coefficient and corresponding *p*-value, as shown

in Table 3, especially in rows a_1, b_1, c_1, a_4, b_4, c_4, a_6, and c_6. Based on the data analysis, the results obtained from this study are in line with previous research, especially by Kim and Park (2018), Liou et al. (2016), and Hong et al. (2017). Internet experience is one of the factors that affect self-efficacy positively. A person's experience will enable him to use a specific tool and better visualize the process to help him complete his tasks perfectly. A reward can be interpreted as a gift received by someone after he did a great job. The reward does not have to be tangible; it can be intangible. It is natural when a person, based on their experience, can complete the task well, which leads to an appreciation for them. A person's attitude indicates a person's level of liking or disliking an object. A positive attitude towards tangible and intangible objects can make them more confident, increasing their self-efficacy.

One implication of this research is that the tools used in online learning must be able to provide positive experiences to students and foster positive attitudes of students toward online learning. Like it or not, the learning model in the future will make more use of online learning, even though it was initially started with a compulsion caused by the Covid-19 pandemic. With some adjustments, the current good practices can be a starting point for more online learning.

4. Conclusion

This study seeks to identify the success factors of online learning associated with students' self-efficacy. Self-efficacy is manifested in digital literacy, tool literacy, and visual literacy. Based on the literature review, eight factors affecting self-efficacy were identified. These eight factors were then tested for their effect on three types of literacy.

The analysis results show that internet experience and rewards positively affect the three types of literacy. These positive effects mean that internet experience and reward positively impact self-efficacy. On the other hand, student attitudes positively affect digital and visual literacy. Although students' attitudes do not affect tool literacy, students' attitudes can still be said to impact self-efficacy positively.

This study combines students' internal and external factors to model technology self-efficacy. The internal factors are internet experience, engagement, attitude, and motivation; the external factors include feedback, reward, social influence, and access flexibility. Self-efficacy is often viewed as a single construct. Assuming self-efficacy as a single construct limits the operationalization of the construct. Lack of detail in construct operationalization results in the instrument for measuring the variables being too broad and paying less attention to various elements or aspects of technology, in this case, e-learning technology. This study views technology self-efficacy as technological literacy to avoid the above situation. Subsequently, technological literacy is manifested as three different literacies: digital, tool, and visual. Digital literacy is related to the user's understanding of digital technology. Tool literacy is the user's understanding of various tools, such as applications and the features inherent in these applications. Visual literacy concerns the user's knowledge of the different graphs, charts, and icons served by the application as understood by its users. By breaking technological literacy into three different types of literacy, thus three different variables, it is hoped that the results obtained align with expectations.

5. Limitations and Further Study

The study's limitations can be seen in two items: the variables chosen as manifestations of self-efficacy based on technological literacy and the respondents who participated in the survey. The first limitation concerns technological literacy, manifested into digital literacy, tools, and visuals. The second limitation relates to population. In this study, the population was only master-level students from one university, so the generalization level was not good.

Future works should focus on exploring other literacy that can be categorized as technological literacy in addition to the three literacies used in this study. Additional research can also be directed to explore further each of the three literacies discussed in this study. In addition, for the generalizability level to be higher, the population needs to be expanded to several other universities.

One interesting finding in this study is that motivation does not affect the three types of literacy. Further research needs to be directed to determine why motivation does not affect the three types of literacy. In addition, it is necessary to look for other factors that influence these three types of literacy.

Authors' Contributions

The authors' contributions to this study are as follows. Paulus Insap Santosa: research ideas, literature review, model and instrument development, data analysis, and article drafting and finalization. Milla M. Risyah: a literature review on self-efficacy, distributing the survey, cleaning survey results, writing draft articles. Melynda M. Auliasari: a literature review on e-learning, instrument development, writing draft articles. Affri D. Pratama: a literature review on technological literacy, data analysis, writing draft articles.

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Appendix. Loading and cross-loading

	DL	TL	VL	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8
DL1	0.932	0.672	0.687	0.450	0.565	0.563	0.474	0.422	0.641	0.566	0.529
DL2	0.947	0.670	0.666	0.395	0.501	0.487	0.508	0.424	0.585	0.574	0.547
DL3	0.952	0.668	0.651	0.354	0.536	0.494	0.574	0.426	0.643	0.581	0.605
DL4	0.877	0.706	0.724	0.375	0.497	0.375	0.427	0.366	0.569	0.532	0.504
TL1	0.713	0.966	0.768	0.441	0.527	0.426	0.473	0.372	0.461	0.525	0.521
TL2	0.706	0.970	0.736	0.398	0.515	0.412	0.466	0.345	0.472	0.506	0.509
TL3	0.713	0.966	0.741	0.350	0.529	0.422	0.502	0.373	0.481	0.500	0.490
TL4	0.633	0.885	0.735	0.338	0.459	0.385	0.411	0.373	0.447	0.506	0.362
VL1	0.741	0.775	0.977	0.447	0.603	0.489	0.467	0.377	0.567	0.560	0.511
VL2	0.720	0.781	0.976	0.431	0.591	0.497	0.489	0.328	0.542	0.542	0.494
VL3	0.727	0.762	0.970	0.368	0.605	0.478	0.479	0.385	0.564	0.566	0.478
VL4	0.650	0.727	0.952	0.383	0.541	0.428	0.443	0.346	0.524	0.484	0.451
$X_1$1	0.353	0.337	0.341	0.920	0.407	0.288	0.202	0.181	0.154	0.288	0.313
$X_1$2	0.391	0.395	0.397	0.908	0.434	0.334	0.248	0.158	0.173	0.287	0.286
$X_1$3	0.381	0.346	0.369	0.920	0.388	0.349	0.203	0.112	0.183	0.274	0.245
$X_1$4	0.412	0.385	0.415	0.887	0.356	0.265	0.209	0.161	0.128	0.325	0.298
$X_2$1	0.442	0.376	0.510	0.369	0.828	0.531	0.446	0.412	0.538	0.731	0.397
$X_2$2	0.548	0.558	0.587	0.379	0.931	0.599	0.419	0.486	0.598	0.721	0.511
$X_2$3	0.480	0.504	0.538	0.464	0.898	0.535	0.371	0.522	0.543	0.689	0.507

Continuation of the Appendix

$X_2$4	0.488	0.399	0.452	0.293	0.803	0.464	0.443	0.456	0.575	0.597	0.681
$X_3$1	0.432	0.420	0.469	0.252	0.594	0.829	0.438	0.359	0.451	0.500	0.443
$X_3$2	0.317	0.346	0.280	0.219	0.440	0.736	0.402	0.239	0.356	0.370	0.426
$X_3$3	0.417	0.310	0.407	0.336	0.449	0.890	0.474	0.281	0.408	0.441	0.380
$X_3$4	0.532	0.363	0.438	0.315	0.543	0.860	0.516	0.377	0.565	0.491	0.481
$X_4$1	0.393	0.324	0.389	0.157	0.337	0.423	0.862	0.225	0.273	0.336	0.354
$X_4$2	0.500	0.437	0.394	0.234	0.430	0.520	0.920	0.347	0.331	0.395	0.472
$X_4$3	0.485	0.462	0.437	0.168	0.452	0.506	0.935	0.354	0.302	0.350	0.370
$X_4$4	0.523	0.503	0.501	0.278	0.480	0.519	0.865	0.401	0.293	0.444	0.385
$X_5$1	0.356	0.278	0.275	0.081	0.422	0.285	0.410	0.841	0.440	0.479	0.393
$X_5$2	0.412	0.382	0.405	0.186	0.533	0.411	0.302	0.911	0.385	0.442	0.352
$X_5$3	0.438	0.331	0.358	0.174	0.518	0.362	0.347	0.888	0.451	0.496	0.471
$X_5$4	0.354	0.370	0.255	0.140	0.435	0.292	0.298	0.907	0.338	0.420	0.378
$X_6$1	0.585	0.451	0.452	0.101	0.562	0.457	0.310	0.339	0.910	0.646	0.632
$X_6$2	0.650	0.494	0.609	0.258	0.593	0.561	0.371	0.458	0.899	0.619	0.725
$X_6$3	0.580	0.390	0.486	0.121	0.593	0.452	0.288	0.444	0.913	0.658	0.640
$X_6$4	0.560	0.436	0.492	0.136	0.604	0.491	0.235	0.397	0.903	0.667	0.623
$X_7$1	0.559	0.492	0.548	0.284	0.713	0.511	0.382	0.478	0.638	0.920	0.530
$X_7$2	0.535	0.521	0.497	0.287	0.726	0.515	0.39	0.459	0.614	0.941	0.568
$X_7$3	0.560	0.485	0.537	0.328	0.727	0.467	0.399	0.500	0.633	0.954	0.589
$X_7$4	0.542	0.441	0.422	0.269	0.687	0.489	0.384	0.427	0.701	0.789	0.821
$X_8$1	0.552	0.537	0.532	0.330	0.572	0.478	0.389	0.382	0.644	0.598	0.902
$X_8$2	0.491	0.386	0.469	0.246	0.517	0.422	0.423	0.410	0.629	0.641	0.791
$X_8$3	0.504	0.415	0.408	0.296	0.511	0.444	0.360	0.362	0.623	0.598	0.921
$X_8$4	0.476	0.352	0.271	0.188	0.456	0.455	0.352	0.399	0.607	0.527	0.828