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## THE NOMOLOGICAL NETWORK VALIDITY OF PERCEIVED FAIRNESS IN BUSINESS-TO-CONSUMER ECOMMERCE

WEI SHA, KELCE COLLEGE OF BUSINESS, PITTSBURG STATE UNIVERSITY, PITTSBURG, KS, USA, [WSHA@PITTSTATE.EDU](mailto:WSHA@PITTSTATE.EDU)

### ABSTRACT

*This study examines the influence of perceived fairness on consumer intentions in business-to-consumer electronic commerce. Perceived fairness, a construct mainly examined in management and marketing literature, could play important roles in people's decision-making process when they shop online. Prior information system online trust research shed little light on this important issue. Based on the psychological contract theory and perceived justice theory, this study studied the nomological network validity of perceived fairness, and whether perceived fairness could influence consumers' intentions beyond cognitive beliefs such as perceived trust. Psychological contract was proposed and validated as a predictor for perceived fairness. The results could shed light on the importance of customer service policies and help web vendors to improve these policies.*

**Keywords:** Perceived Fairness, Psychological Contract, Trust, Purchase Intentions.

### INTRODUCTION

The growth of Business-To-Consumer (B2C) ecommerce has been growing tremendously since the early years of B2C ecommerce. The US Census Bureau estimated that online retail sales were about \$263.3 billion, which accounted for 5.8 percent of total retail sales in 2013 [31]. While the total online retail sales number is impressive and actually showed significant increase, this amount is still far less than what business analysts had hoped business-to-consumer (B2C) e-commerce would reach since its inception. For example, Forester Research predicted in 2000 that B2C e-commerce would reach \$3 trillion by 2003 [26]. One contributing factor could be consumer's lack of trust in online vendors. A lot of research have been conducted to show that how a web vendor can increase its perceived trustworthiness through carefully demonstration of its fulfilment abilities, its benevolence toward consumers and integrity in its actions [1, 6, 16, 20, 21, 33]. Overall, there are over 40 constructs have been examined as antecedents of trust in an online context [22]. While significant progress has been made in terms of understanding the nature of trust and how trust would influence consumer intentions, there are still questions need to be answered about other factors, such as perceived fairness, that could have direct impact on trust and the fit of these factors in the trust nomological network. A nomological network is a model of constructs that will examine how exogenous constructs and endogenous constructs would influence a dependent construct. For a construct to be valid in a nomological network, it must demonstrate convergent validity and predictive validity. This study aims to demonstrate these validities in the trust nomological network.

This research proposes that perceived fairness could play an important role in in the trust nomological network. The organizational justice theory and psychological contract theory can be used to analyse the role of perceived fairness in influencing consumer online trusting intentions. The organizational justice theory emphasizes the role of perceived fairness in workplace, and proposes that perceived fairness would have significant impact on an employee's intentions and organizational citizenship behavior [5, 19, 23]. Although perceived fairness beliefs are mainly examined in organizational context, it might be possible that B2C ecommerce customers may also have these beliefs based on their dealings with web vendors and these beliefs could influence these customers' intentions. One potential source for these perceived fairness beliefs might be a web vendor's promises or guarantees through website elements such as customer service policies or seals of approval. These promises or guarantees would specify what kind of products and services can be expected from a particular web vendor. It might be possible that customer service policies may induce psychological contract beliefs in customers. The psychological contract theory proposes that formal, written documents, such as existing policies, protocols, and actual contracts, are important sources of psychological contract. These beliefs, perceived binding agreement between entities in a relationship, could significantly influence whether an organization would treat its employees fairly or is trustworthy.

This investigation is particularly important to practitioners because they can easily improve their website design strategies if the effect of perceived fairness on consumer intentions is indeed valid. Otherwise, web vendors would be better off to invest their capital in other areas of their business. The rest of the paper is organized as follows: first, the construct of perceived fairness is introduced and discussed from organizational research literature, and a research model is proposed based on the organizational justice theory and psychological contract theory; second, results from the analysis of data gathered through a survey is presented, and the

nomological network validity of perceived fairness is analyzed; and, third, discussion, contributions and limitations of the research are presented.

## LITERATURE REVIEW

Organizational justice theory proposes that individuals would weight their input (what they pay) against potential or realistic outcomes (what they get) in an exchange relationship context. Perceived fairness would be achieved if there is an appropriate balance between what they pay and what they get. An imbalance could come from three potential sources, overvalued outcomes or undervalued outcomes, inappropriate policies or procedures and the manner which a person is treated. Research has shown that an organization's policies or procedures has higher influence on trust than outcomes or interactions [26]. When consumers observed procedural fairness from a firm, they tend to trust the firm more by revealing their private information and tend to continue in the relationship [10]. Since an organization would have better control on its own policies and procedures, this study focus on perceived fairness beliefs generated from these policies and procedures. Perceived fairness is defined as the degree to which someone believes that he or she would be treated fairly due to fair policies and regulations in place to distribute the rewards [23].

The reasons to study perceived fairness construct are twofold. First, research has examined the influence of perceived fairness in brick-and-mortar retailing environment. It is important to validate the possible application of existing theory in the virtual retailing environment. Second, the practical significance of this topic can be high if perceived fairness beliefs can be validated that they are generated based customers' interactions with web vendors' websites. Web vendors might be able to influence how these beliefs are generated through web site design features, such as customer service policies, product offerings and return policies. There are limited evidence that perceived fairness could play a role in influence consumer satisfaction and trust [8, 27]. In this research, the validity of perceived fairness construct are examined together with two other constructs, trusting beliefs and purchase intentions. People would likely more purchase from a web vendor if they feel they are fairly treated.

Hypothesis 1: A customer's perceived fairness beliefs will have a positive effect on the customer's purchase intentions toward a web vendor.

Psychological contract could play an important role in providing a potential source for perceived fairness beliefs. Psychological contract is defined as perceived mutual obligations between two entities, such as an employee and an employer [29]. This belief is generally formed in an exchange relationship when one party makes a promise and another party accepts it. There are two types of psychological contract, transactional psychological contract and relational psychological contract. Transactional psychological contract is about people's understandings about mutual obligations in a tangible contractual relationship. Relational psychological contract is about perceived reciprocal, mutual obligations generated based on intangible agreements "that cannot be carefully scripted, concrete, or formalizable" [4]. In organizational context, contractual relationships may include actual documentation about performance requirements and evaluation, job security, training, compensation and promotion, and intangible agreements may include workplace verbal communications and organizational practices [29]. Therefore, psychological contract focus on perceived, reciprocal mutual obligations between two parties and could exist without a formal contract [30].

In B2C e-commerce, web vendors frequently make promises in their customer service policies, such as "100% satisfaction guarantee," full refund, quality products, protection of privacy, and correct product information, etc. These promises are usually prominently displayed on their websites. Once aware of these promises, consumers may form beliefs that the web vendors will fulfill their explicit obligations specified in their own policies or implicit obligations that may be based on consumers' experience with other vendors and/or feedbacks from other customers. This research proposes that these beliefs constitute a psychological contract between a web vendor and a customer. In organizational research context, psychological contract could have positive influence whether an employee is being fairly treated or not. In B2C e-commerce context, a customer's psychological contract may have positive influence on the customer's perceived fairness about a web vendor.

Hypothesis 2: A customer's psychological contract will have a positive effect on the customer's perceived fairness about a web vendor.

Trusting beliefs are defined as a truster's specific beliefs about a trustee's "competence (ability of the trustee to do what the truster needs), benevolence (trustee caring and motivation to act in the truster's interests), and integrity (trustee honesty and promise keeping)" [20, 21]. These beliefs reflect the truster's salient, subjective assessments of the situation and the truster's interaction with the trustee. These assessments reflect a mutually beneficial relationship between the truster and the trustee. The essence of perceived fairness is that the reciprocal relationship would be fair to each party. When both parties feel being fairly treated by each other, it

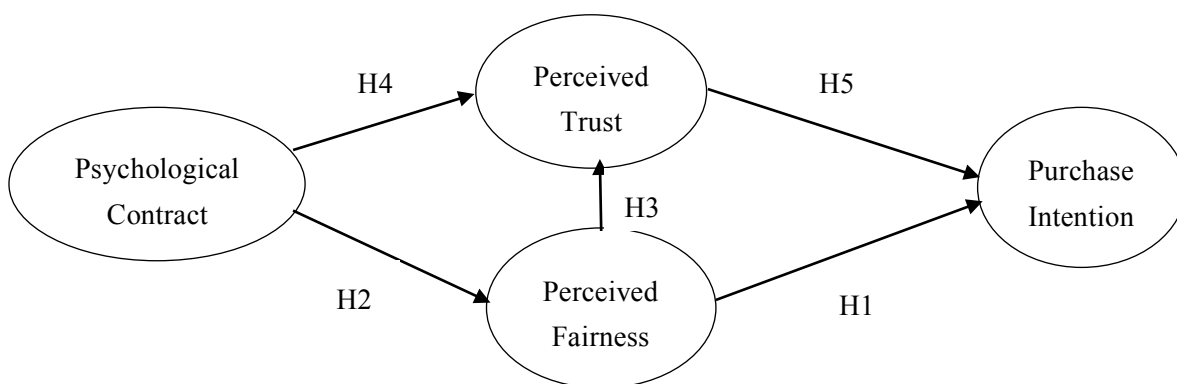
more likely that there is trustworthy relationship between a truster and a trustee. Additionally, the essence of psychological contract is the reciprocal understanding of the obligation between two parties. When there is such an understanding in place, it should have significant impact on a customer's beliefs about whether a web vendor would care about its customers' wellbeing by fulfilling its promises.

Hypothesis 3: A customer's perceived fairness beliefs toward a web vendor will have a positive effect on the customer's trusting beliefs.

Hypothesis 4: A customer's psychological contract will have significant effect on the customer's trusting beliefs toward a web vendor.

Because of the empirical evidence for the direct relationship between trusting beliefs and purchase intentions, it is not the focus of this research to reconfirm these relationships. However, the validation of a proven relationship could provide additional evidence of nomological validity for the model. Therefore, the impact of trusting beliefs on purchase intentions is hypothesized as below:

Hypothesis 5: A customer's trusting beliefs will have a positive effect on the customer's purchase intentions toward a web vendor.



**Figure 1.** Proposed Research Model

## METHODOLOGY

The proposed research model is examined through data collected using a field survey research method. Questionnaire items are adapted from validated instruments and all items are seven point Likert-type scales, anchored "strongly disagree" at 1 and "strongly agree" at 7. The population group for this study would be the general B2C ecommerce population, and a convenient sample of college students were chosen to represent this population. Using college students as subjects is deemed appropriate because students are familiar with the online shopping environments [20, 21]. Questionnaires were completed by 203 students enrolled in three undergraduate courses at a Midwestern university. Most of the respondents were between 20 to 23 years old and were Internet savvy users. Subjects mostly used the Internet to purchase electronic products, concert tickets, text books, and clothing from various online stores.

The measurement instruments for perceived fairness, psychological contract, trusting beliefs and purchasing intentions were chosen from the literature and modified for this research.

## RESULTS

The first step in validating the research model is to examine the convergent and discriminant validity of the constructs. The first step in validating the proposed research model is to examine the convergent and discriminant validity of the constructs. The validities were first examined through the principle components analysis (PCA) [15]. Convergent validity can be established if there are no high cross loadings on unintended constructs. The results from PCA (Table 1) show that four factors with an eigenvalue greater than 1 were extracted, and these factors can explain 78% of the total variance. These four factors correspond well to the intended factor structure of structural assurance. Every item loads on its intended construct (>0.68) with no cross loadings greater than 0.4. The internal consistency reliability was assessed by calculating Cronbach's

alphas. All of the constructs' Cronbach's alphas are greater than the 0.70 minimum threshold proposed by Nunnally [24].

**Table 1.** Factor Loadings of the Research Model

Items	Psychological Contract	Perceived Trust	Perceived Fairness	Purchasing Intentions
PCON1	0.746			
PCON2	0.818			
PCON3	0.801			
PTRUST1		0.748		
PTRUST2		0.761		
PTRUST3		0.845		
PTRUST4		0.693		
PFAIR1			0.812	
PFAIR2			0.814	
PFAIR3			0.835	
INT1				0.814
INT2				0.832
Cronbach's Alphas	0.88	0.94	0.91	0.82

Confirmatory factor analysis was conducted by using IBM SPSS AMOS 22.0, a Structural Equation Modeling software package. The first indication of convergent and discriminant validity will be the overall fit of the proposed model to the data. Several fit indices can be used to assess the goodness of fit, such as the discrepancy ratio ( $\chi^2/df$ ;  $df$  = degrees of freedom), the adjusted goodness-of-fit (AGFI), the comparative fit index (CFI), the normative fit index (NFI), and the root mean square error of approximation (RMSEA). The discrepancy ratio should be smaller than 3 [17] The AGFI should be higher than 0.8 [7]. The CFI and NFI should be greater than 0.9 [7]; and the RMSEA should be below or equal to 0.08 for a good fit and below 0.05 for an excellent fit [3]. The results show that the model has a satisfactory fit (discrepancy ratio, 1.47; AGFI, 0.91; CFI, 0.99; NFI, 0.97; RMSEA, 0.048). Average variance extracted (AVE) was used to further examine the fit of the model. The convergent validity can be established if AVE values of each construct exceed the criteria (0.5) set by Fornell and Larcker [13]. Discriminant validity can be shown if the AVE values are greater than the squared cross correlations among constructs. As shown in Table 1, all AVE values far exceed the 0.5 criteria. The highest correlation is 0.852 which is between psychological contract and trust. The squared value of this correlation is 0.73 which is just a tad higher than 0.72 AVE value for psychological contract. The values of average variance extracted (AVEs) are displayed along the diagonal, and the correlations are displayed below the diagonal.

**Table 2.** AVE Values and Correlations of the Research Model

	Constructs	1	2	3	4
1	Perceived Fairness	<b>0.78</b>			
2	Psychological Contract	0.620	<b>0.72</b>		
3	Perceived Trust	0.660	0.852	<b>0.80</b>	
4	Purchasing Intentions	0.745	0.561	0.665	<b>0.70</b>

The predictive validity of the research model is assessed by examining how well the proposed constructs can explain the variance in the dependent variable, i.e. consumer purchasing intentions. Model fit statistics (discrepancy ratio, 1.461; AGFI, 0.911; CFI, 0.99; NFI, 0.97; RMSEA, 0.048) indicate that the model fits the data adequately. Hypothesis testing results (see Figure 2) show that all hypotheses are supported. Significant amount of variance in perceived fairness (38.2%), perceived trust (75.4%) and purchasing intentions (60.6%) are explained by their predictors.

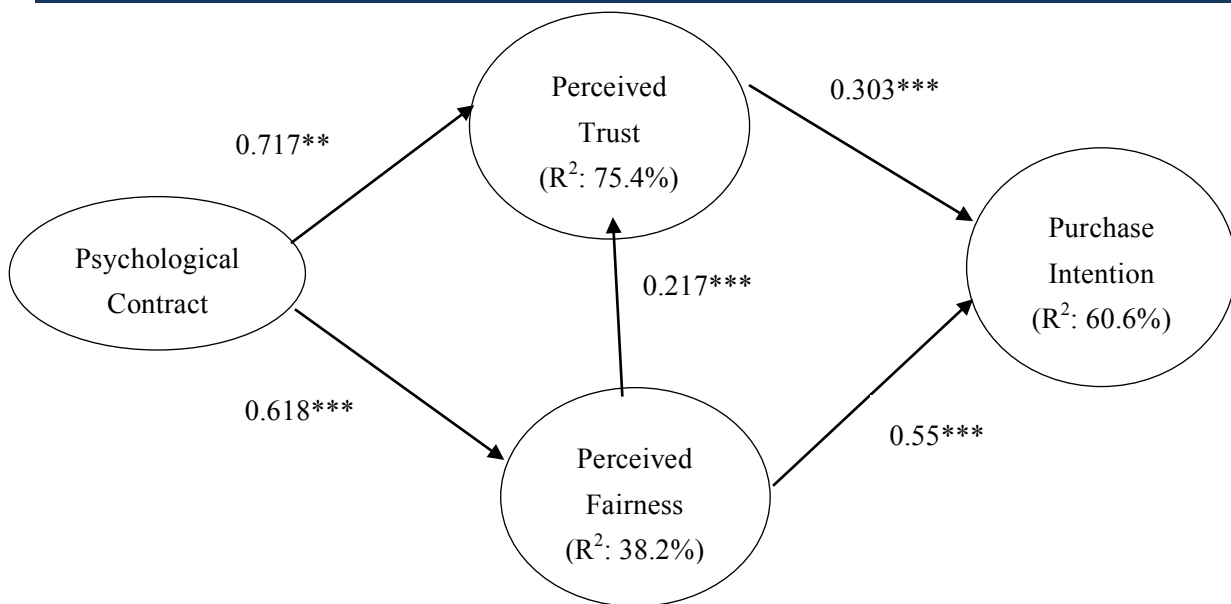


Figure 2. Results for the Proposed Research Model

### DISCUSSION AND CONTRIBUTION

This research demonstrates the importance of perceived fairness in consumers' online purchase decision making process, and may provide the basis for further examination of perceived fairness construct's nomological network in B2C e-commerce. The organizational justice theory was adopted to investigate whether perceived fairness construct could exist in B2c ecommerce context, and whether it is significant in influence customers' trusting intentions. Results from a survey study verified the positive relationships among perceived fairness, trusting beliefs and consumers' online purchase intentions. The success of e-commerce lies in how well web vendors can persuade customers to trust the vendors and subsequently make product purchases. This research's results indicate that web vendors can influence consumers' trusting beliefs and purchase intentions through increasing the degree of perceived fairness of web vendors. 61% of variance in purchase intentions can be explained by the combined influence of perceived fairness and trusting beliefs. The psychological contract theory is also used to examine whether the psychological contract can be a predictor for perceived fairness construct and perceived trust construct. Psychological contract construct alone could explain 38% of the variance in perceived fairness. Psychological contract construct is also a significant predictor of perceived trust. The explained variance in perceived trust by perceived fairness and psychological contract jointly is 75%.

These results show that web vendors could not ignore the importance of their customer service policies or guarantees. Customers' observation of these policies or guarantees might be the source for psychological contract beliefs. Positive psychological contract beliefs would in turn generate positive trusting beliefs and perceived fairness beliefs, and eventually increase the likelihood of purchase intentions. Many web vendors tend to concentrate on other business practices, such as interface design, the efficiency of order processing and effective inventory management. Customers' fairness perceptions and psychological contract beliefs often receive less attention. One area that web vendors could make an immediate impact is having better customer service policies. Many customer service policies are very limited in content or just in standard form. However, as this research discovered, they might be the source for psychological contract beliefs. Carefully worded policies could also let consumers feel they are being fairly treated, and such feelings would make it more than likely they would make a purchase online. Additionally, customer service policies that are generic or limited in content may not be useful in building consumers' perception of web vendor quality (Liao and Cheung 2001). Web vendors should abide by the guarantees they endorse; otherwise, a breach of trust could ensue. Psychological contract breach would be detrimental to a web vendor's image and bottom line.

### LIMITATIONS AND CONCLUSIONS

The first limitation is that the analysis results are based on data collected from one survey study. While results from survey data can offer insights about a particular research situation, it is hard to derive causal relationships, to learn how things change over time or to draw general conclusions. Therefore, additional data collection, either through a different survey or an experiment, is necessary to replicate the findings and to validate the



causal relationships. The second limitation of the proposed research model is that this research does not investigate the effect of other contingency constructs such as trust propensity or risk propensity. A closer examination of the moderating influence of these constructs could provide a richer understanding of psychological contract. The third limitation is that this research does not investigate the possibility that the other important intervening constructs might be omitted from the model. However, this might not be a significant issue given that over 60% of the variance of purchasing intentions and perceived trust were explained. The predictors of perceived fairness should be further explored given that only 38% of variance in perceived fairness were explained. The fourth limitation is that a convenient, student sample was used in data collection. Although this method is considered acceptable by some researchers, this student sample might not be representative of the online population in general. More representative samples are needed for future studies.

This paper examined whether perceived fairness would be effective in influencing customer intentions in B2C e-commerce through a survey study, and adopted organizational justice theory and psychological contract theory to analyze the underlining psychological mechanism of how perceived fairness could fit in the consumer online trust research nomological network. The results from this research could further our understanding of online consumer trust. Practitioners can also benefit from this study in terms of building customer perceived fairness through carefully designed website design features such as customer service policies and guarantees.

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**APPENDIX**

Constructs	Items	Publications
Perceived fairness	this web vendor provides opportunities for me to voice my concern	[31]
	this web vendor has fair customer services policies to handle problems	
	the web vendor indicates flexibilities in dealing with its customers	
Psychological contract	this store will ship me the right product	[9, 11]
	this store will provide the best quality product to me	
	It is this store's responsibility to protect its customers' best interests	
	this store will treat its customer right	
Trusting beliefs	this store provides good service	[20, 21]
	this store is honest	
	this store cares about customers	
	overall, this store is trustworthy	
Purchase intention	I would use my credit card to purchase from this store	[20, 21]
	I intend to purchase from this web store	