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The Importance of Individual Characteristics on Consideration Sets for Online Auction Buyers

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Abstract

In this research, we extend online auction theory by considering set theory in terms of a staged buying process. Success of online auction marketplaces depends on the efficacy of individual buyers searching for and finding desired items for bidding. Searches that lead to consideration sets with too many or too few options may result in a suboptimal choice. Results from this study suggest that certain personal characteristics may impact the number of auctions considered when filtering the awareness set to the consideration set. The findings suggest that design and management of online auction marketplaces should be refined to facilitate these individual traits such that individual search strategies are maximized.

Keywords: Online auctions, Personal characteristics, Self-regulation, Trusting disposition, Decision support, Search, Consideration set

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1 Introduction

The popularity of online auctions such as eBay has led to a variety of research efforts to understand what factors affect the buyer's decision process when bidding for items. Many studies in online auctions [61] and e-commerce show that factors like uncertainty [38], [53], trust [31], [43], [67], and site design [31], [55] influence intention to conduct online transactions. Other researchers examine how factors such as information load and searching affect a buyer's consideration set [47], [54]. Online auction theory is unique from other e-commerce transactions in two ways. First, time limits on many online auctions spur faster decisions. In other online transactions, buyers often have the luxury of buying the good on their own timeline. Second, unique buyer-seller dyiads in online auctions force trustworthy evaluations for each transaction. In other online transactions, buyers often purchase from known retailers, limiting the necessaty of a trusting evaluation. The current study builds on online auction theory and set theory by examining four individual characteristics posited to affect the size of the consideration set of online auction transactions. These characteristics include self-regulatory focus, trust, online auction self-efficacy, and perceived risk of transactions in the online auction community. A study of the characteristics listed above can be beneficial in four ways. First, it extends set theory into online auction environment, providing a new lens for examining online auction transactions. Second, it can help sellers better understand how buyers use online auction marketplaces, allowing them to focus their marketing efforts to cater to specific characteristics. Third, it can direct the design of online auction marketplaces by suggesting decision aids to facilitate the decisions of buyers looking for products. Last, it can help buyers overcome limitations in their approach to auction selection and bidding through a better understanding of their traits that lead to frequent successes or failures in online auction transactions.

The focus of this article is on the effect of individual characteristics on the search for products within an online auction and ultimately, the size of the buyer's consideration set. Often, buyers must search through a large number of auctions selling similar or identical products. However, buyers may not always conduct this search in the same manner, leading some buyers to consider too many auctions, inhibiting their ability to choose the best option, or considering too few auctions, thereby missing potential bargains. While research on information search has found various stopping rules for limiting information searches in online tasks [11], the number of alternatives considered and the individual factors that affect that number is not well understood. The size of the consideration set can affect how the individual is able to process the set, potentially limiting the effectiveness of the search and ultimate bid.

To answer how an individual self-regulates the selection of alternatives, we examine participant selection of auctions in light of individual characteristics. A survey captured various traits to determine their influence on the number of selected auctions the participant chose during the practical exercise. The results suggest that a rarely used trait, that of self-regulatory focus, along with trusting disposition impacts the number of alternatives considered. This extends the theory of self-regulatory focus into the realm of online auctions, and provides a new element to consider during design of online auction venues.

2 Literature Review and Model Development

Before a consumer can bid in an online auction, a buyer must decide which auctions may help solve his or her purchase needs. According to Simon's Intelligence-Design-Choice (IDC) decision making model, the second phase of the decision process involves "inventing, developing, and analyzing possible courses of action" [59], which closely resembles the problem solving process identified by others [19], [23]. During the intelligence phase, online auction buyers search for certain items or navigate to certain product types. Such searches often present buyers with large lists of similar or identical products from which to choose. While searches assist the buyer in developing his or her awareness set, many factors are at work during the screening process that ultimately leads to the development of the buyer's list of top goal-satisfying alternatives. Those factors are at work during the design phase.

Consumer behavior research has found that constructing a set of items considered as goal-satisfying alternatives for a purchase is an essential aspect of the consumer decision-making process [34]. This set of items is referred to as the buyer's consideration set. Typically, this process involves screening of all items within the direct awareness of the consumer in order to limit the number of products to a selected few [58]. This screening is followed by an in-depth evaluation of each item. While many products, locations, and sellers offer similar options, consumers limit their evaluation to a consideration set that represents only those items in which the consumer preferred criteria are met when selecting the optimal choice. Consumers are often aware of other options being available, but they do not include them in their consideration set for various reasons. For example, when purchasing a computer, a buyer may be aware of several manufacturers but may consider only a few brands when evaluating specifications and price.

Development of a consideration set requires a set of potential items, of which a bidder is aware, that is screened and filtered according to some cost-benefit heuristic [34] or constraint [64]. Research suggests that many factors may affect this process. Common ones include cost of search versus the accuracy of the information [34], information load [35], compensatory or non-compensatory strategies [56], time constraints [20], and price sensitivity [44]. Regardless of the procedure used to reduce the awareness set, the size of the ultimate consideration set is important to the outcome. Unfortunately, the size of the consideration set can error in two ways. If the consideration

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set is small in order to minimize effort, there are often conflicts with maximizing decision quality [65]. When the consideration set is large, limitations of cognitive processing lead to information overload, again conflicting with maximization of decision quality. Larger consideration sets often lead to less satisfaction with the quality of decision [12] and potentially more regret, even when the best performing alternative comes from the consideration set [63]. The number in the consideration set, whether too many or too few, may negatively influence the quality of decisions.

There is no clear definition as to what the *ideal* consideration set should contain. Generally, researchers agree that the number will fluctuate according to the product and environment. Marketing literature suggests that consideration sets for products generally average less than eight [34]. In online shopping environments, consideration set sizes tend to follow a similar limited scope, averaging less than five [33]. For products that are uncommon or difficult to find, consideration sets tend to be small. For common items, consideration sets tend to be larger [34]. In complex environments, single outcome calculations often begin with one alternative in mind to which all other alternatives are compared [62]. The decision maker in these situations often bolsters the first alternative by focusing only on the positive elements and minimizing the negative elements, while simultaneously highlighting the negative elements in the alternatives and minimizing the positives. Particularly for ill-structured or uncertain problems, such as when purchasing an item with many attributes, decision makers often develop few alternatives [45].

By limiting the number of items in the consideration set, consumers save effort in searching for additional items [44]. The argument for quickly ending searches often involves lost value from the effort and time involved with the search. However, in online environments, decision aids can engender better decisions with less effort [33]. This is true not only for searching for specific products, but in matching buyers and sellers in an online auction marketplace [5].

Consideration set size is important and, in the case of online auctions where a large search requires little effort or time, understanding what affects consideration set size at the individual characteristic level is important. This study investigates a set of factors and how they impact consideration set size. First, we examine those traits that lead consumers to focus on attributes, whether positively or negatively. Individual characteristics such as values, beliefs, and dispositions are important when considering alternatives [10]. In an online auction context, individuals must choose in which auction(s) they wish to participate (the consideration set) from the set of available auctions. A buyer's choice of an auction in which to bid is partly dependent on that individual's characteristics. While values may direct the search, and therefore affect the awareness set, we posit that number of alternative auctions a buyer considers will be affected by his or her self-regulatory focus. Self-regulatory focus, in part, explains *how* an individual regulates their search. This study also examines trusting disposition, auction self-efficacy, and the perceived risk from a community of sellers, all previously indicated as having an effect on consumer behavior [6], [43], [52] and therefore on auction behavior including consideration set size. We also control for regulatory reference. Situational specific wording of the goal in terms of achieving a positive outcome or avoiding a negative outcome has been shown to affect the decision-making process [40].

2.1 Self-Regulatory Focus

The theory of self-regulatory focus suggests that an individual's inclination toward gain or loss affects the number of alternatives that an individual will consider when making decisions [17]. Regulatory focus is a strategic approach to goal satisfaction and manifests as either a promotion or a prevention focus [36]. An individual with a promotion focus is motivated by his or her nurturance needs, tends to have strong ideals, and thinks in terms of gains and non-gains. These individuals also tend to value the result more than others, thus leading them to apply increased energy to search for a problem solution [3], [37]. In the auction context, this suggests promotion focused individuals will engage longer in the search but may be less able to reduce the number of options considered because each of the options may be identified as being valuable. An individual with a promotion focus will generally do whatever is in his or her power to ensure success. This focus leads individuals to approach problems by working to avoid errors of omission; they are likely to consider any and all available options that they have deemed to be valuable.

Individuals with a prevention focus are motivated by their security needs, tend to have strong obligations, and think in terms of losses and non-losses. An individual with a prevention strategy focuses on vigilantly avoiding failure. He or she will approach problems by working to avoid errors of commission; rather than value the final choice, they value how the choice avoids negative consequences. Avoiding unknowns is common and therefore these individuals are less likely to seek out alternatives beyond that with which they are comfortable, thereby considering fewer options than a promotion-focused individual [17]. By extending this to the online auction realm, we hypothesize:

H1: An individual with a promotion focus will, on average, construct a larger consideration set than will an individual with a prevention focus.

2.2 Trusting Disposition

Trust is an important factor in intention to purchase in e-commerce in general [28], [29], [41], [43] and online auctions in particular [4], [51]. Online auction transactions present a special case for e-commerce transactions because most of the time buyers are unfamiliar with the sellers. Transactions often involve new relationships where initial trust must be developed. Previous research shows that the likelihood of initial trust depends on the level of trusting disposition

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an individual possesses [43]. McKnight and colleagues found that trusting disposition is composed of four sub-constructs; integrity, competence, benevolence, and trusting stance. The first three sub-constructs represent a broad tendency to believe that others will generally act in dependable and trustworthy ways. Integrity represents the belief that others attempt to act on their words. Competence represents the belief that others have the ability to do as they claim. Benevolence represents the belief that others will act in good faith to see a positive outcome. The last sub-construct, trusting stance, represents a foundational choice in how to approach new relationships. Whether or not there is a belief that others will act with integrity, competence, and benevolence, a person with high trusting stance will act as if they do until they prove otherwise.

The higher the trusting disposition, the higher the likelihood that initial trust will form for any of the alternatives. The greater the number of initial trust relationships established, the greater the number of auctions considered for transactions. Likewise, the lower the trusting disposition, the lower the likelihood that initial trust will form for any one alternative. The fewer the number of initial trusting relationships established, the fewer the number of auctions considered.

H2: An individual with a high trusting disposition will, on average, select a larger number of alternative auctions than an individual with a low trusting disposition.

2.3 Online Auction Self-Efficacy

Self-efficacy represents a regulatory system that captures the self-appraisal of one's capabilities [7]. It is internally focused. The stronger the beliefs in one's capabilities, the stronger and more persistent one's efforts [6]. In the context of computer self-efficacy, it has been shown that computer self-efficacy positively affects both personal and professional outcome expectations and reduces anxiety [16]. From these studies, we would expect someone with high self-efficacy in using online auctions to expect to obtain positive outcomes with less anxiety and search through the results with more persistence. With increased persistence, buyers would be more likely to parse through search results and find more acceptable alternatives for the consideration set.

H3: An individual with high online auction self-efficacy will, on average, select a larger number of alternative auctions than an individual with low online auction self-efficacy.

2.4 Perceived Risk from Community of Sellers

Perceived risk of the community of sellers is defined as the subjective belief that there is a probability for a loss when conducting a transaction with a community of sellers [52]. If buyers are worried about the potential for a loss, they are likely to approach the transaction with greater reserve. Perceived risk has been shown to reduce transaction intentions in online auctions [48], [51]. Reduction in transaction intentions means that fewer transactions will be considered acceptable. Furthermore, there is a suspicion that risk associated with a purchase will impact consideration set size [33]. Given a list of possible marketplace auctions, we expect buyers with higher perceived risk will consider fewer auctions acceptable, resulting in fewer acceptable auctions for the consideration set.

H4: An individual with high perceived risk from the community of sellers will, on average, select fewer alternatives than an individual with low perceived risk from community of sellers.

2.5 Online Auction Experience

Online auction experience represents the frequency, intensity, and duration of online auction usage. Experience purchasing items online has been shown to directly impact transaction intentions [53]. However, experience may also directly affect self-efficacy and perceived risk. According to social contract theory, self-efficacy is both predicated by prior experience as well as predictive of future success [7]. We expect prior online auction experience will lead to greater self-efficacy in new online auction marketplaces.

Past positive experience in online auctions also leads to less perceived risk in a community of sellers [52]. Likewise, a buyer's total number of successful transactions in online auctions leads to increased credibility [49]. It is reasonable to expect that with more experience, the perceived risk in the community of sellers will be reduced.

H5: An individual with more online auction experience will have a higher online auction self-efficacy.
H6: An individual with more online auction experience will have a lower perceived risk of community.

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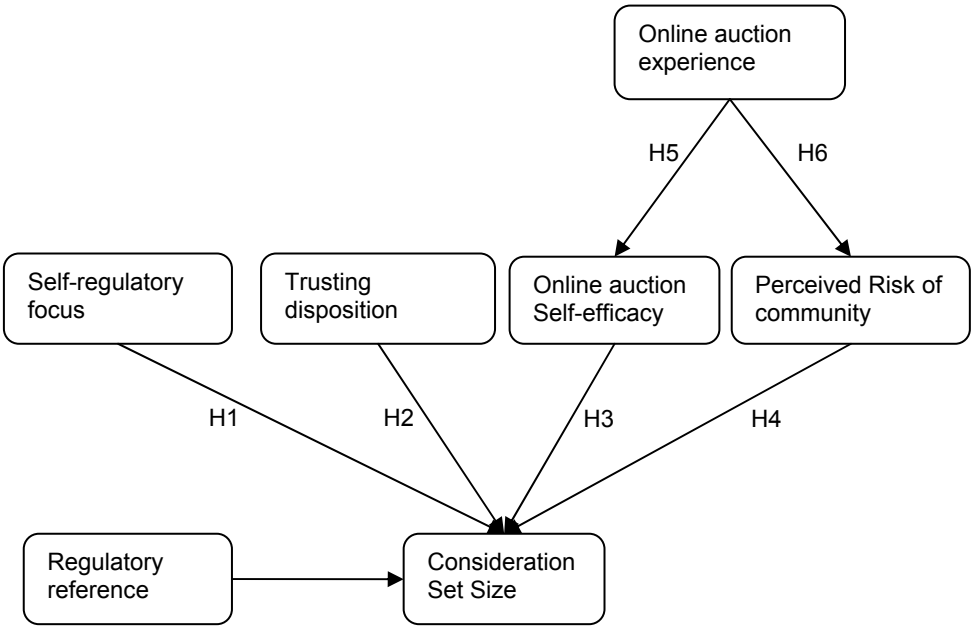


Figure 1: Proposed model

3 Method

To test the proposed model identified in figure 1, we define the context of the online auction, identify research domain and participants, identified research model and instruments, and the procedures for conducting data collection.

3.1 Context

We selected the context of purchasing an IBM/Lenova Thinkpad from an online auction search listing to empirically test our hypotheses. This context was chosen because most of the participants are familiar with computer attributes and can easily relate to the scenario.

3.2 Research Domain and Participants

Our goal was to observe different individual dispositions in the decision-making process in an online auction environment. The primary target group in our study was participants with varying degrees of experience using online auctions and fair representation of the varying dispositions. College age students generally fit this requirement. College students are legitimate target populations when examining general decision making behaviors, where no specialized knowledge or experience in organizations are necessary [30]. Selecting auctions fit this category because 1) college students are generally familiar with the web and online transactions, 2) the focus of the research was on just the search, a generalizable skill applicable to all age levels, and 3) this research was exploratory in nature. Furthermore, some research efforts have shown that there are no significant differences between online auction attitudes and behaviors of students and the general population [22], [50]. Students were encouraged to participate with an offer for extra credit. According to the rule of thumb of 10 times the greater of 1) the block with the largest number of formative indicators or 2) the dependent latent variable with the largest number of independent latent variables impacting it, this study should have at least 80 participants for the alternative model specified below [14].

A total of 107 students in the college of business at two major southern universities participated. Because there is suspicion that participants who selected zero acceptable auctions did not take the study seriously, we omitted four such cases from the results resulting in 103 usable responses. Characteristics of our primary variables suggest that the sample was diverse enough to test our hypotheses. A total of 38 participants had a promotional focus, whereas 69 had a preventative focus.

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3.3 Research Model and Measurement Instruments

Trusting disposition, perceived risk of community, computer self-efficacy, and online auction experience were derived from existing measures as indicated in appendix A. Online auction experience is a formative construct composed of duration, frequency, and intensity of online auction marketplace usage [21]. All other constructs are reflective.

Self-guide strength measure is an idiographic measure that determines the extent of focus on particular viewpoints by asking participants to list attributes describing said viewpoint [36], [37]. Participants are initially provided with a definition of their ideal and ought selves. The ideal self was defined as *the type of person they ideally would like to be, the type of person they hoped, wished, or aspired to be*. The *ought* self was defined as *the type of person they believed they ought to be, the type of person they believed it was their duty, obligation, or responsibility to be*. Participants were then informed that they would have to list attributes that describe their ideal and ought selves. They were also told they would be unable to re-use an attribute once used.

Participants were then asked to list the attributes beginning with one ideal attribute, followed by two ought attributes, then two ideal attributes, and ending with the final *ought* attribute. After listing the attributes, participants were asked to rank the extent they would like to possess their ideal attributes and to rank the extent they actually possess their ideal attribute on a scale of 1 to 4 (slightly, moderately, a great deal, extremely). Likewise, participants were asked to rank the extent they would like to possess their ought attributes and to rank the extent they actually possess their ought attributes using the same scale.

Self-guide strength measure consists of calculated reaction times to questions about ideal and ought selves [37]. The use of reaction times to measure attitude strength has shown that accessibility is related to strength and shown to have predictive validity [25], [26]. All of these reaction times were transformed using a natural logarithm because the time distributions are often positively skewed. Then the reaction times were summed for questions listing the attributes of the ideal self and the extent they would like to possess and actually possess each ideal attribute. Likewise, the reaction times were summed for all the questions listing the attributes of the ought self and the extent they would like to possess and actually possess each ought attribute. These two values were then subtracted from one another to determine their self-guide strength measure. A negative value signified a promotional focus whereas a positive value signified a preventative focus.

The dependent variable consisted of the number of product auctions that participants selected as potentially valid solutions to the scenario problem. The scenario explained that they were interning for a manager who asks them to purchase a quality IBM/Lenova Thinkpad for under $1500 from eBay (see appendix B). To increase immersion in the scenario, users were told they would have to use the computer purchased during their internship. To increase expediency, we also informed the participants that they would have to complete their purchase before the end of the day. This requirement countered the effects of a large alternative set which can increase the consideration set, by encouraging participants to decide quickly which can decrease the consideration set [54]. Participants were then presented with a list of 50 auctions from which to select viable options. Because our focus is on the search, we stopped the exercise after they selected their top alternatives. Participants selected the top alternatives by clicking on a checkbox next to the item. The list of products consisted of real auctions that were transposed and reformatted to contain the auction characteristics that are most relevant to auction participants and most commonly displayed in auction marketplaces (eBay, Yahoo Auctions, etc.). These characteristics were name of product, picture of product (where available), current bid amount, number of bidders, and shipping costs (where available). Real data was desired to add complexity to the study that actual decision environments often entail.

3.4 Procedures

Participants were invited by electronic mail to visit a lab at a date and time of their choosing to participate in this study. They were informed that the purpose of experiment was to learn about decision making using search technology. Upon arriving in the lab, participants were presented with a browser directly linked to the instruction page. All effort was taken to minimize distractions throughout the exercise. After reading the instructions, participants filled out the survey questions. After answering these questions, they were directed to the auction scenario where they had to select possible products on which to bid.

4 Analysis and Results

Partial Least Squares (PLS) is a structural equation modeling approach aimed at maximizing the explained variance of dependent constructs. It was chosen for its ability to handle complex models, its predictive ability, and its ability to handle constructs with fewer items, which is appropriate for exploratory studies of this nature [13], [32]. The average number of auctions selected was 7.0, with a range of 1 to 42. Results were transformed by natural log because of positively skewed results. Reliability was calculated using PLS composite reliability scores. Composite reliability, unlike Cronbach's alpha, does not assume indicators are equally reliable, making it more suitable for PLS [32]. The

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composite reliability score is calculated by $(\Sigma\lambda_i)^2/[(\Sigma\lambda_i)^2 + \Sigma_i Var(\varepsilon_i)]$, where λ_i is the indicator loading, and $Var(\varepsilon_i)=1-\lambda_i^2$. All scores were adequately above the normal cutoff of .7 [9], [46], ranging from .771 to .945 (table 1).

Table 1: Correlation and reliability of constructs *

	Mean (STD)	Reli-ability	1	2	3	4	5	6	7	8	9
1. # selected (ln)	1.5 (1.0)	--	**--**								
2. Self-regulatory focus (ln)	0.4 (1.4)	--	.21	**--**							
3. Self-Efficacy	6.8 (2.8)	.95	-0.02	-0.08	**0.80**						
4. Integrity	3.3 (0.8)	.77	0.04	0.08	-0.06	**0.73**					
5. Competence	3.7 (0.7)	.86	0.17	0.08	0.08	0.08	**0.82**				
6. Trusting Stance	3.8 (1.0)	.89	0.30	0.11	0.09	0.20	0.15	**0.85**			
7. Benevolence	3.4 (0.8)	.82	0.07	0.11	0.18	0.26	0.23	0.21	**0.78**		
8. Perceived Risk	3.3 (0.9)	.92	0.12	-0.07	-0.42	0.01	0.03	0.07	0.06	**0.89**	
9. Online auction experience	--	.87	-0.05	0.10	0.37	-0.04	0.03	0.05	0.16	-0.10	**0.84**

* Square root of AVE listed on diagonal

Table 2: Principle components analysis loading patterns

Item	Construct						
	Self-efficacy	Perceived Risk	Trusting Stanc	Experience	Benevolence	Integrity	Competence
Integrity							
Int1						.603	
Int2						.760	
Int3						.754	
Competence							
Com1							
Com2							.731
Com3							.765
Benevolence							
Ben1					.735		
Ben2					.869		
Ben3					.782		
Trusting Stance							
TS1			.891				
TS2			.681				
TS3			.899				
Perceived Risk of Community							
PR1		.832					
PR2		.819					
PR3		.861					
Self-efficacy							
SE1	.598						
SE2	.823						
SE3	.762						
SE4	.856						
SE5	.773						
SE6	.804						
SE7	.774						
SE8	.812						
SE9	.728						
SE10	.801						
Online Auction Experience							
Exp1				.874			
Exp2				-.743			
Exp3				.752			

Rotation Method: Varimax with Kaiser Normalization. All loadings less than 0.5 were omitted for readability.

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Discriminant and convergent validity were tested through five tests. First, we performed principle components analysis and obtained good loading patterns (Table 2). Next, we ensured that the square root of AVE for each construct was much larger than any correlation between constructs (Table 1). Third, we found that the correlations among all constructs are well below the .90 threshold (Table 1). Fourth, we found that all AVEs were above .5, suggesting that the principle components capture construct related variance rather than error variance. Fifth, convergent validity was obtained with PLS convergent analysis that showed both excellent loading patterns and differentiation between constructs. All item loadings were significant at the .05 level (Table 3).

Table 3: PLS Item loading

Item	T-value
Self-efficacy	
SE1	16.48
SE2	17.71
SE3	22.29
SE4	14.64
SE5	22.26
SE6	17.01
SE7	18.16
SE8	14.27
SE9	19.84
SE10	11.76
Integrity	
Int1	3.66
Int2	4.35
Int3	6.13
Competence	
Com1	8.02
Com2	13.55
Com3	6.49
Benevolence	
Ben1	23.46
Ben2	16.41
Ben3	4.82
Trusting Stance	
TS1	17.09
TS2	13.47
TS3	10.18
Perceived Risk of Community	
PR1	15.78
PR2	10.46
PR3	9.16
Online Auction Experience	
Exp1	19.12
Exp2	7.06
Exp3	35.02

4.1 Testing the Model

The model was tested using PLS analysis. Standardized PLS path coefficients can be found in Figure 2. In both models, factor items were omitted for brevity.

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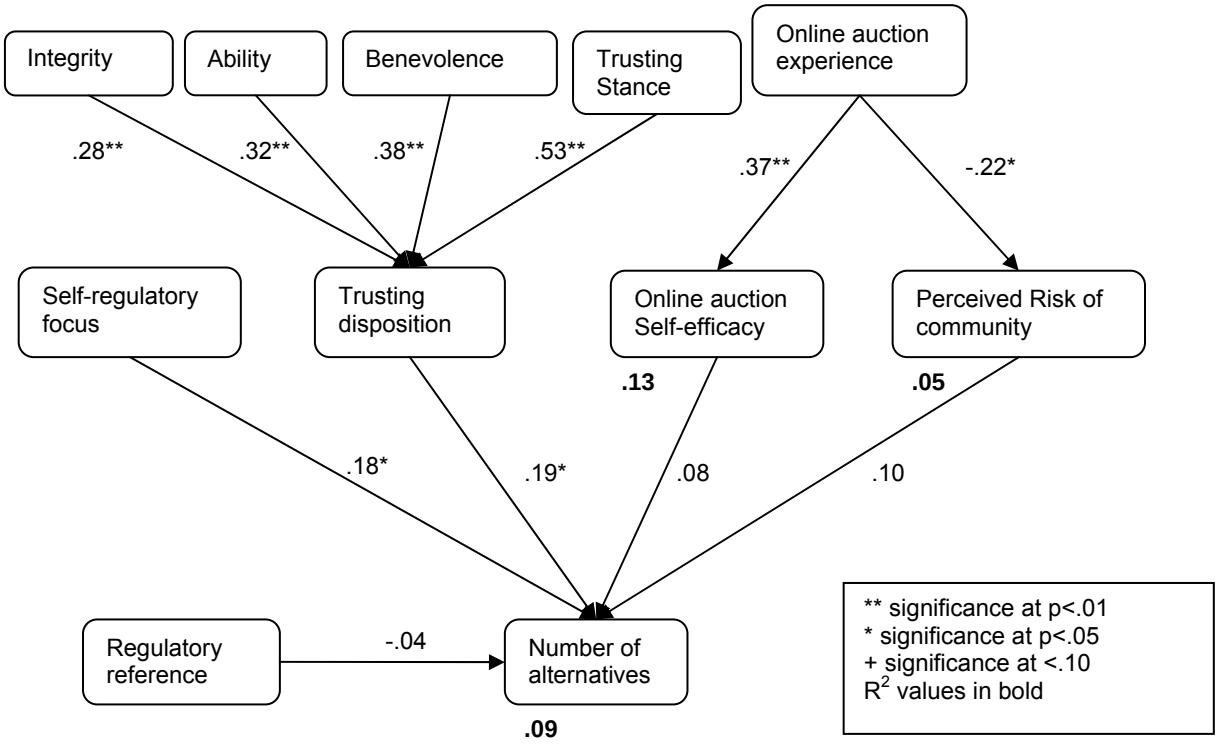


Figure 2: PLS results of structural model

Hypotheses summary can be found in table 4. First, as hypothesized, self-regulatory focus (b = .18, p<.05) and trusting disposition (b = .19, p< .05) did have a significant impact on the number of alternatives selected, supporting hypotheses 1 and 2. However, online auction self-efficacy and perceived risk of community were not statistically significant; hypotheses 3 and 4 are not supported. Online auction experience did statistically predict online auction self-efficacy (b = .37, p<.01) and perceived risk (b = -.22, p<.05), supporting hypotheses 5 and 6.

Table 4: Hypothesis support summary

	Supported?		**Supported?**
H1	Yes	H4	No
H2	Yes	H5	Yes
H3	No	H6	Yes

An alternative path model was tested with results found in Figure 3. In the alternative model, we explore a variation of trusting disposition as designed by McKnight and colleagues (2002). While McKnight describes trusting stance and faith in humanity (composed of integrity, competence, and benevolence) as two distinct sub-constructs of trusting disposition, they treat integrity, competence, and benevolence on the same level as trusting disposition when measuring for second order nature of the instrument. Because other researchers do not measure trusting disposition as a second order factor [28], a direct effects model was created and tested. In the alternative model, all sub-constructs of trusting disposition directly predict alternative auction selection, rather than abstracted as a second-order factor.

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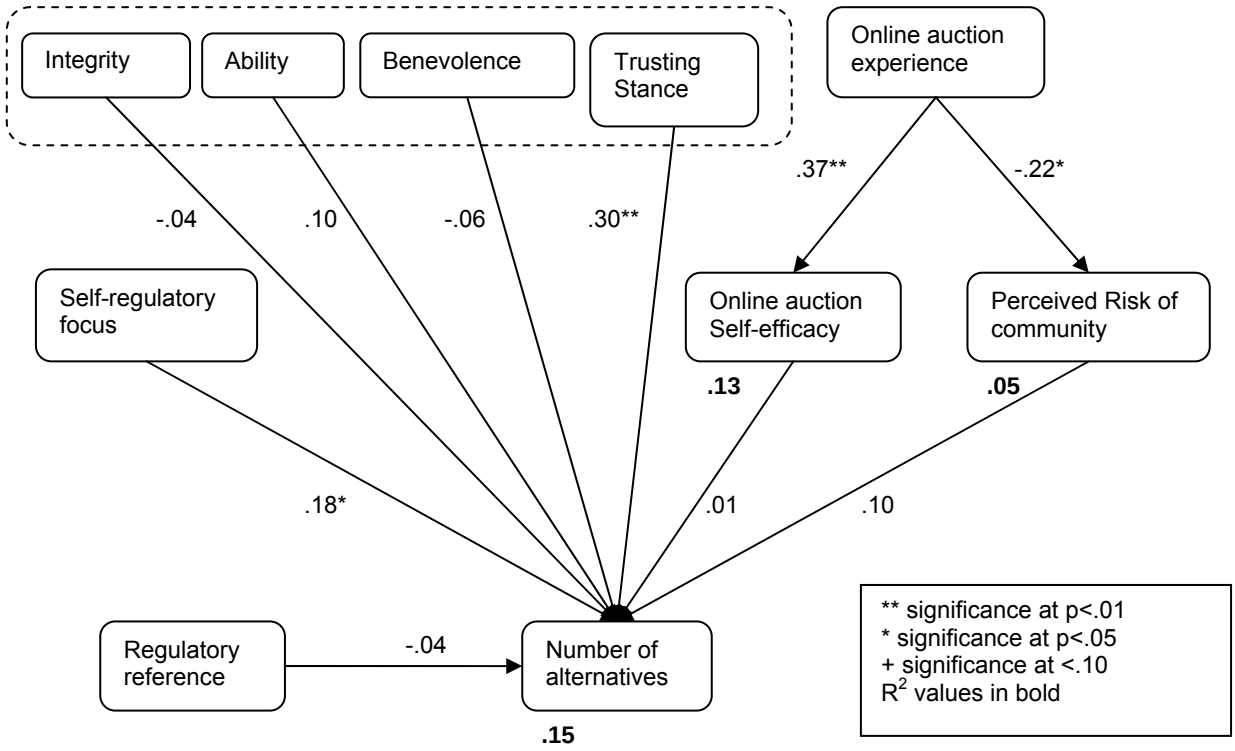


Figure 3: PLS results for alternate model

Although the initial model is informative, the alternative model explains more variance in the dependent variable, increasing the R^2 to 0.15 (adjusted R^2 increased from .04 to .08). Of the four trusting disposition factors, only trusting stance had a statistically significant effect on the number of auctions selected (b = .30, p<.01). All other path coefficients were similar in value and significance.

5 Discussion

The study has several key findings that extend research in online auctions. First, the findings extend decision-making theory by confirming the role of regulatory dispositions in predicting the number of alternative solutions selected in online auction transactions. Second, the findings extend online auction research in externally regulated auction transactions, by demonstrating how contextual self-efficacy and perceived risk from the community of sellers have little to no significance on the usage of selection of a set of auctions. Third, the findings extend trust research by showing that the second-order term for trusting disposition may be more complex than originally thought. Each finding is discussed in detail below.

5.1 Implications for Theory

Taking a lead from marketing research, the findings in this research suggest consideration sets should be considered in online auction research. Consideration sets using two stage decision process have been shown to explain more variance than a simple one stage decision for each item [56]. While previous research efforts in online auctions explore how buyers make their final choice such as intentions to transact [51], [52], actual transactions [51], [52], and final bid price [4], [42], [49], this research shows that the concept of consideration set, along with the two stage decision model, is useful in understanding consumer behavior in online auction marketplaces. It does not contradict existing research, but adds a new dimension to the decision context extending our understanding of buyer behavior. For example, prior research suggests that trusting propensity (a concept similar to trusting disposition) impacts intention to conduct a transaction in online auctions mediated through trust in the community of sellers [51]. This research effort helps explain the cognitive process in the relationship between trust propensity and intention to transact. The buyer's trusting stance influences how many new relationships the buyer will trust when shopping in online auction marketplaces, thereby increasing the intention to transact in any one auction.

By observing trusting dispositions increase the size of the consideration set, we bring a new perspective on online auction behavior. Our research indicates trusting disposition, which leads directly to initial trust, is a significant factor in determining which auctions are included in the consideration set, a step that happens prior to final choice. It is unclear if trust has a greater effect in forming the consideration set or in the final choice, but if it is the former this

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could lead to a new understanding on how reputation mechanisms, such as feedback scores [18] and feedback comments [49], influence the choice of auctions or how trust is replaced by services such as escrow accounts [39]. It might also offer ways to improve auction decision aids.

Given the larger context of the experiment, evidence that self-regulatory focus does influence the number of alternatives considered provides a strong foundation for the relationship. We could have hypothesized the opposite results for this study by considering this study to be one of students pursuing extra credit. A promotionally focused student would be interested in completing the extra credit assignment but would likely want to spend a limited amount of time doing so. Being in a hurry may lead them to consider fewer options just to be done and to move on. A person with a preventative focus, once committed to the survey, may have felt it was his or her duty to be as thorough as possible and may spend more time analyzing and considering possible auctions. Greater time commitment may have led to a higher number of alternative auctions considered. We did not find this to be true, and therefore we can conclude that participants were involved with the scenario enough to take it seriously.

Self-regulatory focus theory suggests that promotionally focused individuals construct more alternatives than preventatively focused individuals [17]. This research extends Higgins' research by showing that regulatory focus influences not only the construction of alternatives but also the elimination of alternatives from a large list in order to construct a consideration set. This extension leads to an understanding of how dispositional traits influence online auction behavior. Applying these ideas to bidding strategies [8] may give us new insight into online auction marketplace behavior, leading to new tools for buyers and sellers to facilitate the search for information and effective transactions.

The influence of regulatory focus on the number of alternatives auctions selected may translate into lower final bid prices for promotional focused buyers. Evidence shows that cross bidders on average pay a lower winning price than non-cross bidders [2]. The strategy of cross bidding is one where buyers place bids in more than one auction at the same time in hopes of landing the lowest bid in at least one of them. This strategy of bidding in multiple auctions parallels the strategy of promotionally focused individuals who approach problems by attempting many different options and avoiding errors of omission [36]. This practice may lead to lower winning prices.

Online auction self-efficacy and perceived risk of a community of sellers were not significantly related to the number of alternatives selected; there are a few reasons this may have occurred. First, because the use of an online auction marketplace was required by the scenario context, it is possible that self-efficacy and perceived risk became irrelevant to the participant's decision. Self-efficacy works in a reciprocal nature with the decision maker's environment and their behaviors [7]. Participants had no control over whether or not they used the online auction environment, and it is possible that they selected possible auctions in which to participate without consideration of his or her ability to actually perform the transaction.

The fact that both online auction self-efficacy and perceived risk in the community of sellers failed to show a significant relationship with the number of alternatives considered may also be explained by the fact that self-efficacy represents the extent an individual believes he or she can cope with risky situations [7]. If self-efficacy does not influence a particular behavior, it is reasonable to suspect that risk may not be significant either. And yet, risky perceptions should lead to risk taking behavior. If we consider the inclusion of a large number of sellers as a risky decision-making behavior (because any one of those sellers may lead to a negative transaction), we would expect risk perception to negatively influence the number of alternatives considered [60]. Again, it may be the fact that the scenario context required usage of an online auction marketplace in spite of an individual's perceived risk levels that limited the role of risk in the consideration of auctions in which to transact. We can summarize from these findings that when required to use an online auction, self-efficacy has a limited role in the construction of a consideration set. Whether self-efficacy influences any part of the decision-process when individuals are required to use a system is a subject that should be explored in greater detail.

The dispositional nature of trust may be more complex than originally formulated by McKnight and colleagues [43]. While the four sub-factors of integrity belief, competence belief, benevolence belief, and trusting stance significantly predicted trusting disposition as a second order concept, these same four factors behave quite differently when directly predicting auction selection. In fact, this study found that the amount of variance explained increases with direct prediction after adjusting R^2, even though trusting stance is the only significant factor.

It has been argued that what McKnight calls "faith in humanity" (composed of integrity, competence, and benevolence) should predict trusting stance [22]. Trusting stance acts as a strategic approach to new relationships. Such an approach is likely to be strongly influenced by that individual's beliefs about other people in general. If they believe most people have integrity, act with competence, and are generally benevolent, they are far more likely to find the strategic approach of trusting people to fit with their personality. If, however, they believe that most people do not have integrity, do not act with competence, or are generally without benevolence, they would find it difficult to trust. It is more likely that belief in integrity, competence, and benevolence directly lead to an individual's trusting stance. This alternative understanding of trusting disposition helps to explain the findings from this study.

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5.2 Implications for Practice

This study has highlighted the importance of regulatory dispositions in making decisions in online auction environments. We identify three implications for practice. First, online auction marketplaces can design decision aids and additional functionality to buyers to facilitate better decisions in searching for and selecting auctions in which to bid. Decision support system research offers decision aids that may be helpful for buyers when searching for auctions in order to increase the number of alternatives in the consideration set [27] or to help them decrease the number of alternatives in the consideration set [65]. Another opportunity for marketplace designers is to offer greater individual customization so that buyers can display the information they use most often, based on their own dispositions. Further tracking a buyer's clicks, time spent on a page, and percentage of winning bids may provide insights into buyer dispositions, leading to algorithms that can suggest to buyers how to improve their purchase strategies to enhance bidding success. For example, if a user consistently checks feedback ratings and feedback comments of sellers (showing a low trusting disposition), it may be useful to suggest a column on the search results page with the seller feedback rating and a link to feedback comments, along with a weighted risk column by displaying the current bid price divided by seller feedback rating. This last column may help individuals with low trusting disposition consider more alternatives than they may otherwise have done.

In particular, we discovered that a relatively large number of auctions were selected (7 on average), with several participants selecting over 30 of the 50 possible. At least within the context of this experiment, these consideration set sizes suggest participants may error on the side of too many options. In practice, this suggests that laptop purchasers in online auctions may suffer from an inability to reduce the possibilities to a cognitively manageable amount. Does this limitation extend beyond laptops or beyond online auctions? Further research should explore this possibility. Further research could also examine what types of individuals select the largest numbers. Self-regulatory focus and trusting stance both have strong impacts. What other features impact the selection of alternatives?

In spite of an individual's contextual dispositions, little can be done to change his or her selection of alternative auctions. For a marketplace, this means that they are limited in how they deal with individuals required to use their service. Reducing the perceived risk from sellers may have little impact on the number of alternatives considered, ultimately affecting the decision quality if too few alternatives are considered or too many alternatives are considered.

5.3 Limitations

Although many interesting lessons were learned from this study, as with any study, there are some limitations. The percentage of variance explained was low although it is acceptable for behavioral research [24] but suggests that there are a number of other factors involved in the creation of a consideration set. Some other possible factors may include cognitive biases [57], [66], intrinsic motivation [68], search stopping rules [11], and environmental constraints [1]. Generally speaking, these factors have been traditionally used to describe the final choice rather than the consideration set. Understanding how any of these factors affect the size of the consideration set may give insights into how to better design online auction marketplaces to facilitate transactions by minimizing errors with considering too many or too few auctions.

The second limitation involves the scenario specifications. Participants were provided with just one scenario involving spending money that was not theirs in an environment they may not have experienced first-hand (an internship). Even though they were provided with a spending limit and told they would be using the computer they purchased, they may have spent the company's money differently than they would have their own. We may also find different responses with the use of different products.

Another limitation was the operationalization of the dependent variable as a single count of the number of auctions selected. With a single item measure, it is difficult to determine if participants considered the scenario equally when selecting auctions. Given the purpose of the study to determine if the number of auctions selected varied by motivational dispositions, a single item measure was necessary and sufficient - necessary because additional measures of counts could have introduced fatigue in the participants or could have tipped participants off to our purpose, thereby eliciting results that correspond with expected outcomes - sufficient because only predictive significance was desired rather than explanatory significance. Because the results demonstrated predictive significance, a single item instrument sufficed.

Because this study only viewed part of the decision process, decision quality could not be determined based on the alternative auctions selected. While decision quality was not directly tested, theory supports the suggestion that too many alternatives or too few alternatives lead to inferior decisions. Further research can confirm this relationship between regulatory dispositions, auction selection, and successful transactions at optimal winning bid prices.

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6 Conclusion

The purpose of this study was to determine if regulatory dispositions affect the selection of auctions in online marketplaces. From a sample of over 100 participants, we found that two dispositions, regulatory focus and trusting disposition, affect the number of auctions selected when searching for products in an online auction marketplace, but contextual factors, online auction self-efficacy and perceived risk in the community of sellers, were not significant in predicting the number selected. We also found that the construct trusting disposition may be more complex than originally formulated.

These results suggest online auction behavior is a complex combination of individual differences. As e-commerce continues to evolve, understanding these differences provides business with a way to facilitate buyer decision-making and provide a conducive environment designed for an individual buyer's decision-making needs in line with their regulatory disposition. This results in a symbiotic relationship between buyer and seller. This research provides the basis for such designs.

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Appendix A: Instrument Questions

Trusting Disposition [43]

- *Benevolence*
  1. In general, people really do care about the well-being of others.
  2. The typical person is sincerely concerned about the problems of others.
  3. Most of the time, people care enough to try to be helpful, rather than just looking out for themselves.
- *Integrity*
  1. In general, most folks keep their promises.
  2. I think people generally try to back up their words with their actions.
  3. Most people are honest in their dealings with others.
- *Competence*
  1. I believe that most professional people do a very good job at their work.
  2. Most professionals are very knowledgeable in their chosen field.
  3. A large majority of professional people are competent in their area of expertise.
- *Trusting stance*
  1. I usually trust people until they give me a reason not to trust them.
  2. I generally give people the benefit of the doubt when I first meet them.
  3. My typical approach is to trust new acquaintances until they prove I should not trust them.

Perceived Risk from a Community of Sellers [48]

1. There is a considerable risk involved in participating in online auctions.
2. There is a high potential for loss involved in participating in online auctions.
3. My decision to participate in online auctions is risky.

Self-efficacy with Online Auctions [15]

I could participate in an online auction from a new auction marketplace…

1. if there was no one around to tell me what to do as I go
2. if I had never used a marketplace like it before
3. if I had only a reference guide for assistance
4. if I had seen someone else using it before trying it myself
5. if I could call someone for help if I get stuck
6. if someone else had helped me get started
7. if I had a lot of time to complete the purchase of the product I'm interested in
8. if I had just the built-in help facility for assistance
9. if someone showed me how to do it first

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10. if I had used similar packages before this one to do the same job

(Each item can respond Yes/No. If yes, then the respondent fills out a rank from 1 to 10 of how confident they are at completing the task).

Online Auction Experience [21]

1. How long ago did you start bidding on online auctions?
2. How often do you bid on online auctions?
3. When shopping for an item in online auction marketplace, how many minutes per month do you spend searching, analyzing, comparing, and bidding?

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Appendix B: Auction Selection Scenario Instructions and Sample of Returned Auctions

Activity Instructions:
For this activity, imagine you have started an internship. Your employer has given you the task of purchasing a new laptop for use on the job. He is not very specific but wants you to purchase something before the day is over. He says "I need you to purchase an IBM/Lenova ThinkPad laptop with the best features for the lowest Price (including shipping) and from a reputable seller at eBay. You will be using this computer a lot, so don't buy something that's outdated. Your Budget is $1500."

A quick search of eBay's marketplace for IBM/Lenova ThinkPads returned the following possibilities. Think about what you will lose by not choosing a particular auction to bid. Please check all auctions below that best satisfy your boss's requirements.

		Item Title	Bids	Current Bid	Shipping	Time Left
☐		IBM ThinkPad T43p Excellent Condition MSRP $3600	26 bids	$3050.00	+$15.95	2m
☐		IBM Thinkpad T23 1.13 GHZ 512 MB 30GB DVDRW	8 bids	$255.00	+$39.00	2m
☐		NEW! IBM Lenovo ThinkPad R61 Core 2 Duo 1.6GHz/14.1"	0 bids	$624.88	+$39.95	5m
☐		IBM Thinkpad T30 PIV – 1.8GHZ (Lot of 5 units)	0 bids	$1,199.99	+$75.00	12m
☐		IBM Thinkpad 390 2626 50U 12" No Reserve!! 4212	1 bid	$9.99	+$25.0	22m
☐		IBM Thinkpad laptop T20 Wi-Fi DVD+ 30GB 256MB of RAM Wi-Fi DVD+ 30GB 256MB perfect college student FAST	1 bid	$199.99	Free	27m
…	…	…	…	…	…	…