

Intentions and Actual Behavior of E-Commerce Adopters: An Empirical Study of the Turkish E-Commerce Market

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Abstract

This study addresses a fundamental critique of behavioral economics—the divergence between stated intentions and actual behaviors—by investigating consumer engagement on Turkish e-commerce platforms. The research aims to assess the extent to which consumer intentions translate into actual online behaviors, with a particular emphasis on the moderating role of situational constraints. A survey of 248 users of business-to-customer (B2C) platforms was conducted, and the data were analyzed using Morikawa’s model, employing Partial Least Squares Structural Equation Modeling (PLS-SEM) alongside Necessary Condition Analysis (NCA). The findings indicate that while consumer intentions serve as a valuable predictor of behavior, they are not independently sufficient, as external constraints significantly influence actual engagement. The integration of SEM and NCA methodologies underscores both the predictive utility and the limitations of intention-based models in behavioral economics. This study contributes to the literature by advocating for a more comprehensive framework that incorporates both intention-driven and contextual determinants of consumer behavior, offering critical insights for academic discourse and strategic business applications within Turkey’s digital marketplace.

Keywords: *Behavioral Economics, Hypothetical Bias, Turkish E-Commerce, Stated Intentions.*

Introduction

The phenomenon of hypothetical bias is a key criticism in behavioral economics, where individuals’ stated intentions often differ from their actual behaviors. This study examines how respondents may overestimate their online engagement intentions compared to their actual actions on Turkish e-commerce platforms. Intentions, as defined by Triandis (1980) and Sheeran & Webb (2006), serve as self-instructions, while Rogers (1983) describes them as an individual’s motivation or commitment to act. Intentions are typically classified into goal intentions (e.g., intending to get

fit) and behavioral intentions (e.g., planning to make an online purchase weekly), with the latter being the focus here.

Behavioral intentions are central to multiple behavioral theories, including the Theory of Reasoned Action (Fishbein & Ajzen, 2010) and the Protection Motivation Theory (Rogers, 1983). While intentions are strong predictors of behavior, they do not always translate into action, leading to the well-documented intention-behavior gap. This gap is particularly relevant in e-commerce, where consumers often express strong purchasing intentions but do not always follow through.

In Turkey, e-commerce has experienced significant growth, with domestic transactions comprising 91.3% of total online sales, while cross-border trade (CBT) accounts for the remaining 8.7%. Over 548,000 businesses participate in the sector, contributing to 89.5% of e-exports and 54.9% of e-services. The platform economy and digital services play a major role in this expansion, with e-commerce exports reaching 20.6% of total e-commerce services. Despite this growth, the intention-behavior gap remains a challenge, as consumers' online behaviors often deviate from their stated intentions. Understanding these discrepancies is crucial for both academic research and business strategies in Turkey's digital marketplace.

Basis of Intention

The interconnection of the intention-behavior relationship has been examined widely by researchers to determine how much intentions are embedded in effect or identify the actual behavior. Numerous studies suggested that intentions are grounded in individual beliefs and values or rooted in other affective factors that are most likely to predict real behavior, as was discussed in the self-determination theory of Deci & Ryan, 1985. In the same context, Sheeran et al., 1999 compared attitudes and norms, while Keer et al., 2014 compared intention effect versus attitudes. The study by Sheeran & Abraham, 2003 examined self-identity as the unique attributes and experiences that define an individual intention, and later the researchers emphasized the strong interconnection between intention-behavior (Carfora et al., 2017; Sheeran & Orbell, 2000). The study by Rhodes et al., 2022 concluded that attitudes and regret that individuals expect to feel if they make a particular choice, adding to individual self-identity significantly moderated the intention-actual action relationship. Considering the health-related behaviors, which can exist as actual actions, Loss Aversion was the strongest predictor of behavior (Conner et al., 2016b). Other research highlights that focusing on anticipated regret, such as measuring it, can increase the strength of intention-behavior relationships. For instance, (Sandberg & Conner, 2011) demonstrated that assessing anticipated regret improved the prediction of sports center usage, while similar findings were shown for cervical screening attendance (Sandberg & Conner, 2009). This effect occurred only when anticipated guilt was evaluated before the intention formed, indicating that regret must influence intention for the moderation effect.

Structure of Intention

The structure of intention as moderator of the intention-behavior relationship has been recently examined from multiple perspectives, such as the theory of reasoned action that illustrated how reasoned intentions play a master role in predicting and forming actual behavior (Sheeran & Conner, 2019). Another perspective, based on motivational coherence suggests that intention is reflecting alignment and consistency between an individual's goals, values, and actions, this Study

found that higher motivational coherence led to a more vital intention-behavior link (Sheeran & Conner, 2017). while the concept of intention realism represents the degree to which an intention can be translated into real behavior, suggesting it depends on the individual ability to control and decide his action based on his consideration in other words realistic intentions based on the practical expectation that the behavior could be conducted, moderated the intention-behavior relationship.

The Intention-Behavior Relationship

Likert scale is normally used to Measure Behavioral intention as a participant can rate his intention from strongly disagree to strongly agree, this measure typically consists of two elements: valence indicating whether someone intends or does not intend to perform a behavior, and extremity how strongly they agree or disagree. However, these measures often fail to explain a significant portion of actual behavior. For that considering the repeated action of past behavior has been shown to correlate to perform the actual behavior, in other words, Rhodes et al. (2022) claim in a survey of 14 studies that past behavior or habit was strongly associated with future activity in about 30% of studies, while 50% of it showed a weaker relationship, this inconsistency explained by Sheeran et al. (2017) suggesting that the relationship between past behavior and intention follows an inverted U-shaped pattern. As experience grows, the ability of intention to predict behavior becomes stronger because experience bolsters intention to specific limits only before getting weaker due to the behavior gradually becoming more automatic or habitual. Fazio & Zanna, 1978; Ouellette & Wood, 1998).

For example, studies utilizing the Theory of Reasoned Action and Planned Behavior (TPB) proved that intentions can explain around 23% of the actual behavior (Armitage & Conner, 2001), Many studies examining behavioral intentions show that significant changes in intention typically correspond to only minor or medium shifts in actual action, notably, the correlation value between intention and actual action ranged between +0.08 – 0.48 (Webb & Sheeran, 2006; Sheeran, 2002; Sheeran et al., 2016; Rhodes & de Bruijn, 2013).

Various methodological factors can influence whether this gap widens or narrows. For example, improving the reliability of intention and behavior measures may reduce the gap, while using objective measures of behavior or failing to align intention and behavior with correspondence principles (Ajzen, 1991) can further widen the gap.

The need to align intention with behavioral measures is central to TPB. However, in some areas, such as physical activity, the frequency-based behavior measures (e.g., METs) may only partially align with intention measures that track whether individuals meet recommended activity guidelines. This misalignment may need to be more accurate in the actual intention-behavior relationship. Much research has explored conceptual moderators of the gap of intention-behavior, particularly concerning intention characteristics and other influencing factors These moderators reveal the limits of the intention-behavior relationship and help explain when stronger or weaker relationships might occur (Morwitz & Munz, 2020; Sheeran, 2002; Sheeran & Webb, 2006).

The Theoretical framework

The conceptual model of Morikawa's model of consumer behavior is the proposed approach to determine the relation between actual behavior and stated intention. Morikawa, T.

(1989). Morikawa Handled stated intention and revealed action as two distinct embodiments of "real" preference and emphasized that actual behavior is influenced by situational limitations. Thus, to ensure the accuracy of the prediction of actual behavior, the stated intentions should be adjusted for the constraints to which the intentions are subject. This is because constraining factors can also influence actual behavior.

In this study, the researchers address the Morikawa approach to test predicting actual behavior represented by constructs of intention to use, transaction perceived risk as situational constraints, and actual behavior. The proposed factors are shown in the following Figure.

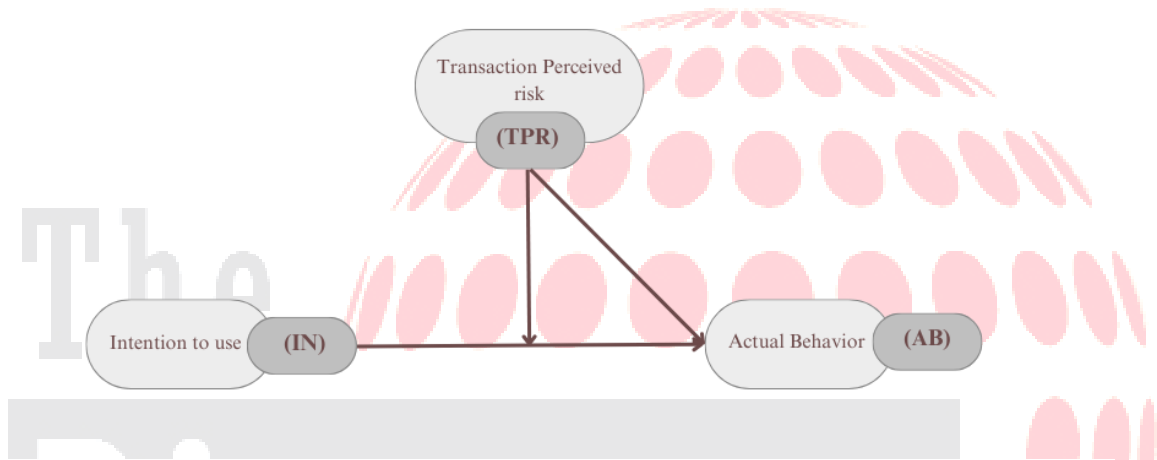


Figure 1: The Theoretical Framework

Methodology

This study follows a quantitative research approach, using a survey for users of business-to-customer (B2C) e-commerce platforms in Turkey. The survey reflects respondents' experiences and real opinions about their intentions to use the platforms and their actual behaviors.

A total of 248 individuals participated in the survey. Participants were selected based on their active engagement with B2C platforms, which allowed for insights directly relevant to the Turkish e-commerce market. The study sample size is adequate as this study utilizes the partial least square approach for the structure equation modeling, and for the purpose of sample size adequacy, the minimum requirement of the sample size is specified according to the number of paths or the number of arrows that pointing at the latent variable, this rule is proposed by Marcoulides and Saunders, who the recommended sample size of 40 cases corresponding to 3 arrows. (Ringle, Christian M., et al, 2024)

Table (1) summarizes demographic information for the study sample.

Table 1: The Demographics Information

Demographics	Frequency	Percentage%
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		(N=248)	
Gender	Male	122	49%
	Female	126	51%
Marital Status:			
	Single	97	39%
	Married	128	52%
	Other (please specify)	23	9%
Age			
	Under 18	10	4%
	18-24	40	16%
	25-34	79	32%
	35-44	83	33%
	45-54	29	12%
	55-64	4	2%
Education Level:			
	High School or equivalent	24	10%
	Bachelor's Degree	145	58%
	Master's Degree	62	25%
	Doctoral Degree	4	2%
	Other (please specify)	3	1%
Occupation:			
	Student	66	27%
	Full time Employed	66	27%
	part-time Employed	40	16%
	Self-employed	33	13%
	Unemployed	26	10%
	Retired	14	6%
	Other	3	1%
Yearly Income Level:			
	Under \$25,000	142	57%
	\$25,000 - \$49,999	21	8%
	\$50,000 - \$74,999	4	2%
	\$75,000 or more	0	0%
	Prefer not to say	81	33%

Data analysis followed two primary methodologies:

a) Partial Least Squares Structural Equation Modeling (PLS-SEM)

The PLS-SEM approach is used because this method can handle data distributions that deviate from normality, small sample sizes, and provide flexibility for modeling complex relationships including formative indicators. This approach has been widely used in the behavioral research domain chair, as demonstrated by Hair et al. (2013). The analysis has two steps where the measurement model and structural model were evaluated simultaneously to test the hypothesized relationships between intentions and actual behaviors within e-commerce adopters.

b) Necessary Condition Analysis (NCA)

Apart from the PLS-SEM used for analysis, Necessary Condition Analysis (NCA) was also applied to examine the intention-behavior gap relationship. NCA is especially useful to determine the necessary conditions for a given outcome and it can be used to evaluate the existence of intentions in relation to buying behaviors. Using NCA, the study aimed to identify the need for intention to become an e-commerce customer and to get better insights into the factors that drive a consumer. This combination of PLS-SEM and NCA offers a comprehensive approach to understanding the dynamics between intentions and actual behavior in Turkish e-commerce.

Structural Equation Modeling (SEM) Analysis

Quality criteria: validity and reliability

Results were obtained through the SmartPLS software, and the preliminary investigations were carried out using 12 reflective indicators and 8 formative indicators. From the results shown in Figure 2, it is observed that five reflective indicators have relatively weak loadings corresponding to their constructs so it has been decided to remove and continue only with measurements in which their loads are more than 0.4.

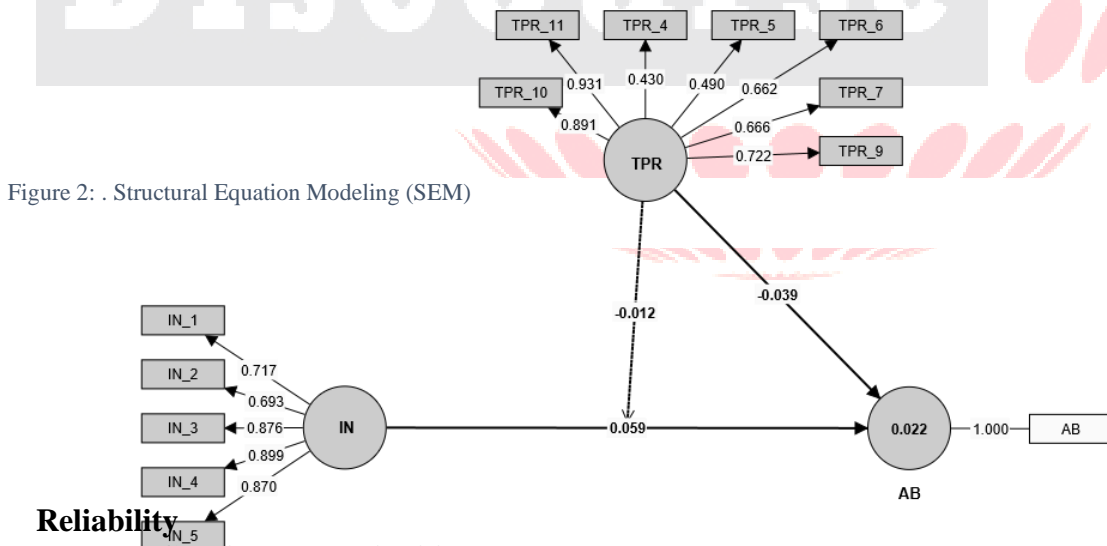


Figure 2: . Structural Equation Modeling (SEM)

**Reliability
Internal Consistency Reliability**

Table (2) presents the composite reliability values, all of which exceed 0.7, this validates the internal consistency reliability, following the criteria established by Hair et al. (2013).

Table 2: The composite reliability

Construct (Latent variable)	Composite Reliability
IN	0.877
TPR	0.926

Validity

Convergent validity

Convergent validity is verified as the Average Variance Extracted (AVE) values for each construct as shown in Table (3) surpass the acceptable threshold of 0.5 Henseler et al. (2016).

Table 3: Average variance extracted (AVE)

Construct (Latent variable)	AVE
IN	0.665
TPR	0.599

Discriminant validity

Fornell and Larcker criterion

Table 4 shows that for all constructs, the square root of AVE values is higher than its correlation value with other constructs, establishing discriminant validity by Fornell and Larcker Criterion. Henseler et al. (2016).

Table 4: Fornell and Larcker's criterion

	AB	IN	TPR
AB	1		
IN	0.123	0.816	
TPR	-0.083	-0.014	0.706

The Heterotrait-Monotrait ratio of correlations (HTMT)

The discriminant validity among each pair of reflective constructs has been established. This can be seen in Table 5, in which there are no HTMT values exceeding the 0.90 threshold. It is concluded that the discriminant validity meets the criteria set by Henseler et al. (2016).

Table 5: Heterotrait-Monotrait ratio (HTMT)

	AB	IN	TPR
AB			
IN	0.115		
TPR	0.034	0.169	

7.2 Multicollinearity test

The VIF values of the exogenous latent variables in Table 6 are below the threshold level of 6, from which it can be concluded that there is no problem of multicollinearity within the structural model. Lowry and Gaskin (2014); Ringle et al. (2015).

Table 6: The VIF values

Construct (Latent variable)	VIF
IN	1
TPR	1.003

Model results

Table 7: Summarized path coefficient test results

Table 7: T.test for the path coefficient test

	Original sample (O)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
IN -> AB	0.059*	0.067	0.035	0.095
TPR -> AB	-0.039	-0.009	0.068	0.564
TPR x IN -> AB	-0.012	0.005	0.034	0.735

Indicates significant paths: *p < 0.1, ** p < 0.05, ***p < 0.01

The analysis reveals a modest yet significant positive correlation (0.059) between consumers' intentions (IN) to engage with e-commerce platforms and their actual behavior (AB) on Turkish platforms. This suggests that expressing an intention to utilize e-commerce services somewhat increases the likelihood of following through with actual usage. However, the study finds no direct influence of Transaction Perceived Risk (TPR) on actual behavior, indicating that consumers' concerns about transaction security do not significantly impact their engagement with e-commerce platforms. Furthermore, the interaction between TPR and IN does not significantly affect behavior, implying that combined intentions and risk perceptions do not notably alter actual usage.

In fact, intention is not a sure determinant of actual behavior in Turkish e-commerce. Despite the considerable but weak relationship between the original intentions and the actual use, it should be taken into consideration that there are other factors influencing consumer behavior other than intention formation. Initial intentions are, therefore, valuable for their insight but, holistically understanding consumer behavior requires a broad range of factors.

Necessary Condition Analysis (NCA)

Necessary Condition Analysis (NCA) strengthens the research in behavioral economics by taking into consideration those conditions around which a decision is made. This, in turn, gives far-reaching insights and strategies, therefore advancing the study area. The ability to explain complex causal relationships makes NCA an important tool in methodology. It brings in a refined framework to analyze how different factors combine to produce an outcome. The adoption of NCA will provide sharper insights into the critical determinants of underlying phenomena. More precisely, NCA locates the conditions that must be present for a certain outcome to occur, though their presence does not ensure the occurrence of the outcome. The distinction between necessary and sufficient conditions is very important in many fields, especially in behavioral economics, where most of the time the outcome is an end result of several factors combined. NCA is indeed a very useful tool for analyzing the intention-action relationship. Identifying the necessary conditions to allow the

translation of intentions into actions, NCA provides insights that may lead to more effective strategies for behavior change. This approach enriches not only our basic understanding of the intention-action gap but also has practical applications in changing and promoting behaviors for greater desirability in context. - Dul, J., 2016; Dul, J. et al., 2023.

Necessary Condition Analysis (NCA) results

Ceiling Line Effect Size: Table (8) summarizes the effect sizes for the necessary condition (IN) across both models.

Table 8: Ceiling Line Effect Size

	CE-FDH	CR-FDH
IN	0.233	0.117
TPR	0.000	0.000

The ceiling line effect size Figure (3) represents the relationship between the necessary condition (IN) and its effect size on Actual use for both CE-FDH and CR-FDH models.

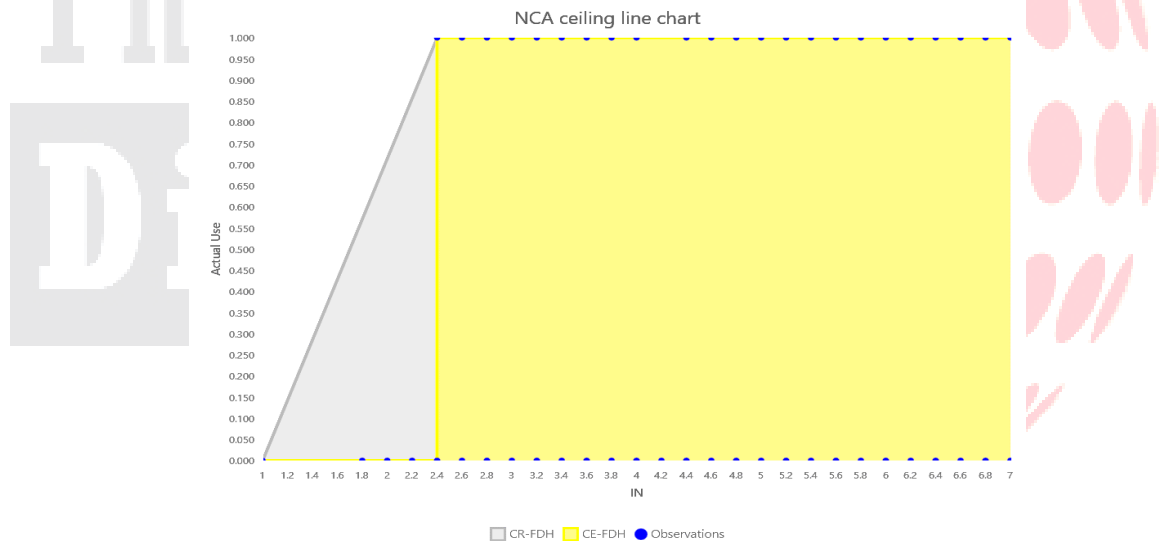


Figure 3: Ceiling Line Effect Size (IN)

X-Axis: Represents the levels of intention (IN).

Y-Axis: Represents the effect sizes (Cohen's d) from both models

The ceiling line effect size chart figure (4) represents the relationship between the necessary condition (TPR) and its effect size on Actual use for both CE-FDH and CR-FDH models.

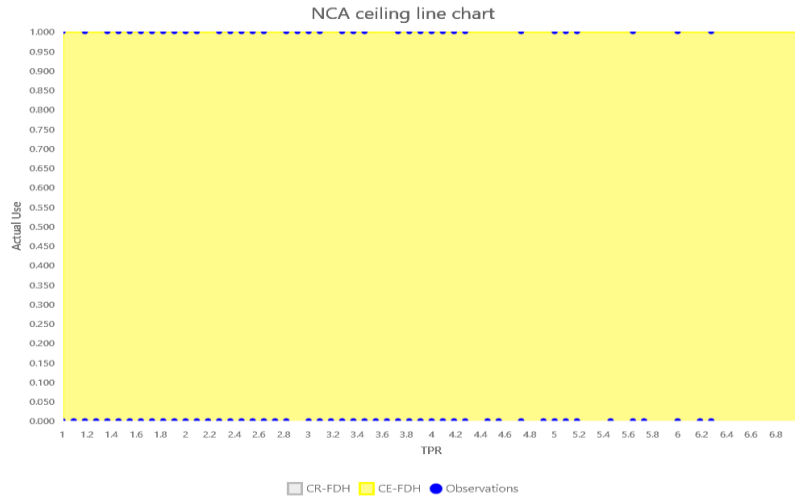


Figure 4: Ceiling Line Effect Size (TPR)

X-Axis: Represents the levels of Transaction Perceived Risk (TPR).
Y-Axis: Represents the effect sizes (Cohen's d) from both models

Effect Size for IN (Necessary Condition):

CE-FDH Model: The effect size for IN is **0.233**, indicating a medium necessary effect. In other words, the intention necessity condition can be considered relatively strong to convert the real action for this model. While this condition has not been fully met due to the absence of observations above the ceiling indicating that there is potential for improvement to reach the optimal outcomes.

CR-FDH Model:

The effect size for IN is equal to **0.117** in the Free Disposal Hull regression model (**CR-FDH**), which could fall into the lower end of the small to medium effect size. Suggesting a lesser influence of IN on the real action compared to the necessary ceiling envelopment model. The presence of one observation above the ceiling indicates that while IN is not a fully satisfied condition, there is at least one instance where the outcome exceeds expectations.

Effect Size for TPR (Transaction Perceived Risk):

CR-FDH and CE-FDH models show an effect size of 0.000 for TPR, which means Transaction Perceived Risk does not significantly influence the real action in both models. That means perceived risk as a constraint factor is not a necessary condition that can affect the real action of consumers in the current analysis context.

8.2 Necessary Condition Analysis (NCA) Permutation

Table (9) below summarizes the results from the Necessary Condition Analysis (NCA) permutation tests for both the CE-FDH and CR-FDH models.

Table 9: The Necessary Condition Analysis (NCA) permutation tests

CE-FDH	Original effect size	90.0%	Permutation p-value
IN	0.233**	0.167	0.045
TPR	0.000	0.000	0.000
CR-FDH	Original effect size	90.0%	Permutation p-value
IN	0.117**	0.083	0.045
TPR	0.000	0.000	0.000

Indicates significant: *p < 0.1, ** p < 0.05, ***p < 0.01

outcomes in both models, with a stronger effect shown in the CE-FDH model compared to the results of the CR-FDH model, highlighting its importance, while the insignificant effect of TPR confirming it is lack of impact on real action.

Conclusion and Implications

The relationship between the stated intentions of consumers and their actual online behavior in Turkish e-commerce Web sites shows that intention (IN) is crucial to driving real behavior; thus, intentions are helpful but not always sufficient to achieve actual action.

The results obtained from PLS-SEM analysis confirm the modest positive effect of intentions on actual behavior, showing that while intentions determine real action in part, it is not an exclusive determinant factor. In return, Transaction Perceived Risk also showed an insignificant result on behavior, putting to light that "Concerns about the online transactions are also not considered particularly binding in any way". Also, the interaction between TPR and IN is not influential, which indicates that the joint impact of risk and intention is relatively small.

Although very valuable insights arise from intentions, a complete understanding of consumer behavior requires consideration of factors other than intention formation, such as situational constraints and other influences on behavior. While both SEM and NCA indicate the importance of intentions, they also point to limitations that exist when reliance on them is solely made. It will be necessary to address practical barriers and influences from the external environment with a multidimensional approach for effective prediction and improvement in consumer engagement on Turkish e-commerce platforms. Based on that results yield the following important implications:

Strengthening Consumer Intentions:

Since intentions have been proven to be one of the main drivers of actual behavior by both SEM and NCA models, companies should focus on strategies that may strengthen the consumer's intentions. Marketing efforts aimed at highlighting the benefits, appealing to social norms, and/or making the experience easier for the user will develop stronger intentions towards using e-commerce platforms.

Moving Beyond Transaction Risk Concerns:

The insignificant effect caused by the TPR factor in both models suggests that worries about the security of transactions do not make the consumer stay away from e-commerce platforms. With this, one can infer that while ensuring transaction security is mandatory, giving an over-emphasized concentration on perceived risks is not really productive in order to increase engagement. Businesses can devote more resources to enhancing user experiences and convenience.

Addressing Situational Constraints:

While intentions are one thing, the outcome shows that they may not be sufficient in being able to predict actual behavior. Circumstantial constraints, such as delays in delivery, unavailability of the product, or technical glitches, may prevent customers from going through with their intentions. Companies must overcome practical hurdles so that such hassles are minimized.

Tailoring Strategies to Consumer Behavior Dynamics:

The difference in effect size between the CE-FDH and CR-FDH models suggests that context does matter to consumer behavior. Therefore, companies should implement dynamic strategies for particular consumer segments in specific purchasing scenarios to maximize the rate of engagement and conversion.

Minimizing the Interaction of Risk and Intention:

Since the relationship between TPR and IN was not very relevant to behavior, businesses should avoid overemphasizing the liaison between risk mitigation and intention-building strategies. Conversely, efforts in creating compelling value propositions may serve as a far better means that naturally leads to higher engagement.

Future Research:

These findings point to a few important considerations with regard to situational constraints in affecting the relationship between intentions and behavior in the context of Turkish e-commerce. First, while TPR was consistently insignificant in influencing outcomes across both models, it suggests that in this context, TPR may not be of importance for understanding consumer behavior.

It would explore possible situational constraints that influence the adoption of e-commerce and real purchasing. One main avenue would lie in the analysis of discrepancies between real market prices and those found online, since this may form a big situational constraint that would mostly affect the perceptions and decisions that are normally made by the consumers. Suggested Research Questions:

Price Discrepancy Analysis: How do variations between actual market prices and online prices influence consumers' intentions and actual purchasing behavior in Turkish e-commerce?

Consumer Perception of Value: How do consumers perceive the value of products when faced with price differences, and how does this perception impact their online purchasing intentions?

Situational Contexts: What other situational factors, such as promotional offers, shipping costs, and product availability, interact with price discrepancies to affect consumer behavior?

Comparative Studies: How do these dynamics differ across various product categories, such as electronics, fashion, and groceries, within the Turkish e-commerce landscape?

By addressing these questions, future studies can deepen the understanding of situational constraints in e-commerce and refine strategies to enhance consumer engagement and satisfaction.

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