

Trust Signals and Conversion Behavior in Cross-Border E-Commerce Marketplaces

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Abstract — Cross-border e-commerce transactions involve heightened uncertainty relative to domestic purchases, given limited buyer familiarity with foreign sellers, extended delivery timelines, and unfamiliar dispute resolution processes, making trust signals particularly consequential for purchase conversion. This study examines how specific marketplace-level trust signals, including verified seller badges, buyer protection guarantees, and aggregated review volume, influence conversion behavior among first-time cross-border buyers. Using clickstream and transaction data from a regional marketplace platform combined with a follow-up buyer survey, we assess which trust signals most strongly predict completed purchase relative to cart abandonment among buyers browsing listings from unfamiliar foreign sellers. Findings indicate that buyer protection guarantees exert a stronger influence on conversion than seller review volume alone, particularly for higher-value purchases, suggesting that risk mitigation assurances outweigh reputational signals when transaction stakes increase. Verified seller badges showed the strongest effect for first-time cross-border buyers specifically, indicating a distinct role in overcoming initial unfamiliarity rather than ongoing purchase decisions. These findings offer platform design implications for prioritizing trust signal placement based on buyer experience level and transaction value within cross-border marketplace interfaces.

Index Terms — cross-border e-commerce, trust signals, consumer conversion, online marketplaces, digital platforms

I. INTRODUCTION

Cross-border e-commerce transactions involve heightened uncertainty relative to domestic purchases, given limited buyer familiarity with foreign sellers, extended delivery timelines, and unfamiliar dispute resolution processes [1]. Under these conditions, marketplace-level trust signals become particularly consequential for purchase conversion, since buyers cannot rely on prior direct experience with the specific seller to reduce perceived risk [2]. Marketplaces deploy a range of trust signal types, including verified seller badges, buyer protection guarantees, and aggregated review volume, but their relative influence on conversion has not been systematically compared under cross-border-specific uncertainty.

Prior e-commerce trust research has generally examined domestic transaction contexts where dispute resolution and delivery expectations are comparatively well understood by buyers, limiting the direct applicability of these findings to cross-border settings where unfamiliarity itself is a primary source of purchase hesitation [3]. Understanding which trust signals most effectively address this specific unfamiliarity, rather than

general transaction risk, is necessary for marketplace interface design decisions [4].

This study examines how specific marketplace-level trust signals influence conversion behavior among first-time cross-border buyers, using clickstream and transaction data combined with a follow-up buyer survey.

II. RELATED WORK

Trust signal research in domestic e-commerce has established that review volume and seller ratings generally predict conversion, with diminishing marginal effect as review counts grow large. Buyer protection guarantee literature, drawn primarily from platform economics, suggests that risk mitigation assurances become more influential as transaction value increases, since potential loss magnitude scales with purchase price, a mechanism this study tests directly within a cross-border context where baseline risk perception is already elevated.

III. METHODOLOGY

Clickstream and transaction data from a regional cross-border marketplace platform were combined with a follow-up buyer survey to assess which trust signals most strongly predict completed purchase relative to cart abandonment.

A. Conversion Probability Modeling

Purchase conversion was modeled using logistic regression, with conversion probability $P(\text{convert})$ expressed as a function of trust signal presence variables for verified seller badge V , buyer protection guarantee G , and log-transformed review volume $\ln(R)$, interacted with transaction value tier T :

$$\text{logit}(P(\text{convert})) = \beta_0 + \beta_1 V + \beta_2 G + \beta_3 \ln(R) + \beta_4 (G \times T) \quad (1)$$

The interaction term β_4 directly tests whether buyer protection guarantee influence on conversion strengthens at higher transaction value tiers, as hypothesized.

IV. RESULTS

Table 1 summarizes estimated effects of each trust signal on conversion probability, distinguishing first-time buyers from the broader buyer sample.

Buyer protection guarantees exerted a stronger influence on conversion than seller review volume alone, particularly for

Table 1. Trust signal effects on cross-border purchase conversion

Trust signal	First-Time Buyers	All Buyers	Higher-Value Effect
Verified seller badge	0.38	0.19	Moderate
Buyer protection guarantee	0.29	0.31	Strong
Review volume (log)	0.14	0.22	Weak

higher-value purchases, while verified seller badges showed the strongest effect specifically among first-time cross-border buyers.

V. DISCUSSION

These findings indicate that risk mitigation assurances outweigh reputational signals when transaction stakes increase, consistent with buyers weighting potential loss magnitude heavily as purchase value rises. Verified seller badges appear to serve a distinct role in overcoming initial unfamiliarity for first-time buyers rather than functioning as an ongoing purchase decision factor for repeat cross-border shoppers, who instead rely more heavily on review volume once initial trust has been established through prior successful transactions.

VI. CONCLUSION

This study found that buyer protection guarantees and verified seller badges serve distinct trust functions in cross-border e-commerce conversion, with protection guarantees mattering most for higher-value purchases and verified badges mattering most for first-time buyers specifically. These findings offer platform design implications for prioritizing trust signal placement based on buyer experience level and transaction value within cross-border marketplace interfaces.

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