

How NFT Digital Collectibles Platforms can Retain Gen Z Loyalty

-Analyze the Topnod Platform with a Structural Equation Model

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Abstract. Those born between 1995 and 2009 are referred to as "Generation Z". As soon as Generation Z was born, it smoothly integrated into the Internet era, and products such as smartphones, instant messaging hardware and digital information technology have had a great impact on them. The majority of generation Z consumers have different consumption patterns from those of previous generations. That also means Gen-Z has distinct consumption tastes, consumption modes, and consumption traits. Strong social demand drives Generation Z to be active on the NFT digital collection platform, and use collections they have on the NFT platform to demonstrate their own personality tastes to meet social needs. This study focuses on the Topnod NFT Digital Collectibles Platforms that Gen-Z always used and uses variables such as Platform Participation, Platform Enthusiasm, Platform Identity, Platform Attachment, and Platform Trust to explore its impact on Platform Loyalty. It has reference significance for the existing NFT platform management.

Keywords: NFT; Generation Z; Structural Equation Model; Platform Loyalty;

1 INTRODUCTION

Non-fungible Token (NFT) is an encrypted digital certificate supported by blockchain technology, which is used to record the ownership of virtual digital assets such as artworks or collections. It is unique, irreplaceable, indivisible, programmable, traceable, and permanently preserved. Based on the above attributes, NFT can realize the copyright confirmation of digital assets, enable the transaction flow of digital assets, and provide users with a variety of consumption values such as collection, social contact, investment, and functionality. Additionally devoted to NFT digital assets is Generation Z. The Internet-dependent Generation Z is more interested in and accepting of blockchain technology. On the one hand, digital collections can satisfy the pursuit of fashion and novel consumption psychology of Generation Z, and on the other hand, consumers in Generation Z can promote their own tastes through digital collections to meet their social needs.

Topnod platform is the largest NFT collection trading platform in China with 40 million members from Generation Z and a record \$64 million in transactions. On the Topnod platform, Gen

Z users may purchase and trade NFT collections and engage in open discourses with other users. Since the Topnod platform has more social functions on the basis of the original digital collection platform, consumers also need to invest more time and energy to obtain the desired collection, which has prompted Gen Z consumers to form new emotions towards the Topnod.

2 LITERATURE REVIEW

Participation is defined as a person's perceived relevance to an object based on their intrinsic needs, values, and interests [1]. Platform participation is embodied as consumers' participation degree of the NFT platform. The participation of the NFT digital collectibles platform, including online time, the number of interactions, etc. At present, the product release of the Topnod NFT collection platform is the way of reservation system and lottery, which greatly improves the participation of Gen Z consumers, and the difficulty of obtaining that also allows users to have a stronger sense of pleasure after purchasing products and enhance the value of products. Sebastian pointed out that participation will promote consumers' communication with the platform, which in turn will promote the creation of platform loyalty.

The passion for the platform refers to the user's love for a particular platform or item. Ahuvia believes that the consumer's love for the platform, as a structure, can be used to describe the strong emotional connection between consumers and the object of love [2]. Generation Z consumers' enthusiasm for NFT digital collections from the unique characteristics and the beauty of the digital cultural relics collections. Because of its strong empathy ability, Generation Z has a stronger impact on platform loyalty. When consumers form an emotional bond with the platform, it will promote consumers to have positive behaviors towards the platform, such as becoming regulars, spending more time on using platform and other loyalty behaviors.

H1: Platform engagement has a significant positive impact on platform loyalty

H2: Platform enthusiasm has a significant positive impact on platform loyalty

The theory of social identity was proposed by Tajfel and Turner, who argued that people hold personal identities as well as various social identities [3]. People tend to classify themselves into the various social categories they identify with and develop social identities that describe their identity or belong to some certain social categories [4]. The identity process is primarily used as a self-defining way to achieve self-consistency, self-esteem, and self-improvement [5]. Based on social identity theory, the concept of social identity has been widely used in social media research and has been conceptualized into concrete forms such as organizational identity, community identity, platform identity etc [6]. On the other hand, the NFT digital collection as the embodiment of the taste of Generation Z users, in the Topnod Detective NFT digital collection platform, users can also publish comments in the community to flaunt their own taste to meet their own social needs, and strengthen the emotional connection with the platform identity. Tseng, L. Y. pointed out that the sense of identity is the subjective feeling of consumers on the platform impression after deciphering the platform information obtained, embodied in the sense of belonging and identity. Gen Z consumers have a strong social desire to form an identity through activities that will help form platform loyalty [7].

H3: Gen Z platform identity has a significant positive impact on platform loyalty

Platform attachment what means that consumers can express their personality by purchasing platform or products, or service with a strong attachment to meet their own social and psychological needs. Gao Fang found in the study that after the emotional bond of platform attachment gradually formed, the existence of consumers' platform loyalty increased significantly[8].

H4: Platform attachment has a significant positive effect on platform loyalty

Platform trust refers to the willingness of ordinary consumers to rely on the platform to perform its established functions, which means the confidence in the platform. In addition, in the case of risks in using the platform, consumers have confidence in the reliability of the platform and its behavioral intentions. Trust reduce the uncertainty that consumers feel in unfamiliar consumer environments, and the impact of consumer perception will be passed on to trust in the platform, where consumers perceive and emotionally value the reliability of the platform[10]. The measures that makeup reliability and intent expose the emotional and perceptual characteristics of customer trust. The application of blockchain technology in the NFT community creates a sense of security for consumers' trust in the platform, and because the NFT platform applies blockchain technology and the digital collection has unique, verifiable, indivisible, and immutable characteristics, it stimulates beneficial and loyal behaviors to the platform which demonstrates the impact of platform trust on platform buying willingness and platform loyalty.

H5: Gen Z platform trust has a significant positive impact on platform loyalty

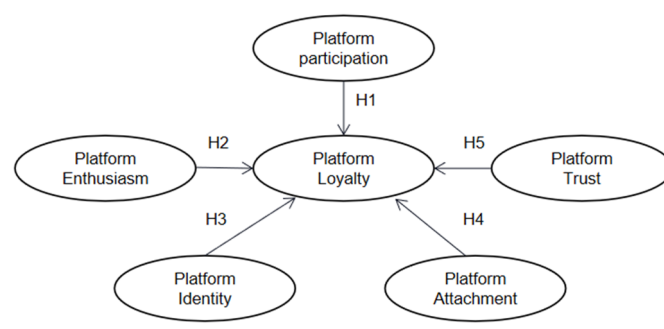


Fig. 1. Proposed study model [Figure credit: Original;]

3 RELIABILITY AND VALIDITY ANALYSIS

In this study, surveys were distributed to 18–24-year-old generation Z customers who visited Topnod using simple random sampling and snowball sampling. 646 questionnaires were ultimately returned, of which 544 were valid, yielding an effective recovery rate of 84.2%.

The KMO index of each question is in the range of 0.69-0.818, and the commonality of the items is in the coefficient range of 0.506 to 0.781, indicating that the questionnaire in this study is very suitable for factor analysis. Additionally, the Cronbach's alpha coefficient is above 0.7 [11], and the Bartlett sphericity test is significant at $p < 0.001$, indicating reliability.

It is important to test the validity of the measurement in this research. Two tests CR and AVE were used to inspect the validity of the construct. The CR estimates and AVE value meet the requirements of Wu et al. [12]. The CR estimates varied from 0.82 to 0.93, which's all estimates

are greater than 0.7. and the AVE value between 0.63 and 0.77 is greater than 0.5 [11], which was also greater than the squared correlations of related variables. Thus, discriminant validity was also significant [12]. A variance inflation factor (VIF) value greater than 10 is usually considered problematic [11]. In this study, the VIF values for all eight variables of this study ranged between 1.31 and 5.21. The above analysis represents that the measurement model had excellent convergent validity (see Table 1).

Table 1. Reliability And Validity Analysis Of Each Research Variable [Table credit: Original;]

Factor	KMO	Factor loading	α	AVE	CR	VIF	S	K
Platform participation	0.87** *	0.74	0.84	0.64	0.82	4.33	0.54	0.02
		0.83					0.74	0.37
		0.83					0.80	0.87
		0.81					0.93	1.14
Platform Enthusiasm	0.89** *	0.77	0.78	0.77	0.91	4.36	0.44	0.06
		0.76					0.85	0.41
		0.81					0.81	0.65
		0.80					0.43	0.18
Platform Identity	0.71** *	0.85	0.81	0.68	0.85	2.52	0.53	0.42
		0.82					0.36	0.58
		0.88					0.32	0.05
Platform Attachment	0.79** *	0.79	0.79	0.71	0.88	5.21	0.59	0.89
		0.76					0.41	0.15
		0.84					0.50	0.86
		0.75					0.76	1.55
Platform Trust	0.72** *	0.84	0.82	0.63	0.93	1.31	0.43	0.70
		0.85					0.37	0.53
		0.87					0.39	0.54
Platform Loyalty	0.82** *	0.85	0.80	0.75	0.90	2.96	0.36	0.80
		0.88					0.41	0.62
		0.80					0.54	0.02

Note: * means $p < 0.05$, ** means $p < 0.01$, *** means $p < 0.001$

3.1 CORRELATION ANALYSIS

Since the selected variable has been considered well inspect in the prior studies, the weights the variables of the questionnaire based on the questionnaire data and produces the mean value of each parameter, which is utilized as the score for each variable in the SPSS program in order to investigate the correlation of the eight variables in the text in depth. The correlation coefficient is more than 0.52, and the component matrix is positive definite, as shown by the analysis of the correlation matrix each variable has a certain correlation (see Table 2).

Table 2. CORRELATION ANALYSIS [Table credit: Original;]

	M	SD	1	2	3	4	5	6
Platform Participation	5.08	1.12	1					
Platform Enthusiasm	5.11	1.09	0.72	1				
Platform Identity	5.16	1.18	0.68	0.76	1			
Platform Trust	5.22	1.10	0.70	0.78	0.83	1		
Platform Attachment	5.19	1.11	0.79	0.57	0.56	0.60	1	
Platform Loyalty	5.09	1.11	0.74	0.52	0.55	0.59	0.88	1

3.2 STRUCTURAL EQUATION EXPLORATORY FACTOR ANALYSIS

Quantitatively analyzing the sample data in order to comprehend the causal relationship between the variables in the study, this study employs the SEM structural equation model modeling technique.

Table 3. QUANTITATIVELY ANALYSIS [Table credit: Original;]

Model	X ² / df	P	RMSEA	SRMR	CFI	GFI	IFI	NFI	AGFI
Measurement Model	2.82	0.00	0.073	0.609	0.91	0.90	0.90	0.92	≤0.84
Structural Model	2.72	0.00	0.069	0.593	0.92	0.91	0.91	0.92	0.82
Threshold	< 3.00	-	< 0.08	< 0.10	≥0.90	≥0.90	≥ 0.90	≥ 0.90	≥ 0.80

In the test factor analysis, the model's x²/df, RMSEA, SRMR, CFI, GFI, IFI, NFI, and AGFI scores were 2.82, 0.073, 0.609, 0.91, 0.90, 0.90, 0.92, and 0.84, respectively, the model has favorable Configuration reliability and is suitable for structural equation modeling. In terms of fitness, the model's fitness indicators are x²=648,8, df=238, 2,72, 0.069, 0.593, 0.92, 0.91, 0.91, 0.92, and 0.82, which correspond to the structural model fitting indicators, suggesting that the model is fit. It shows that the model adaptability conditions are favorable, and the research model fits well (see Table 3).

Table 4. Hypothesis Test Results [Table credit: Original;]

	Path Hypothesis	b value	T value	Relation
H1	Platform Participation → Platform Loyalty	0.37***	7.64	Yes
H2	Platform Enthusiasm → Platform Loyalty	0.42***	5.47	Yes
H3	Platform Identity → Platform Loyalty	0.56***	4.48	Yes
H4	Platform Attachment → Platform Loyalty	0.32***	8.23	Yes
H5	Platform Trust → Platform Loyalty	0.39***	4.62	Yes

From this study Note: * means p<0.05, ** means p<0.01, *** means p<0.001

The accompanying table demonstrates that all six hypotheses of this study have passed the model test. Results of the study show that Gen Z platform engagement, Gen Z platform enthusiasm, Platform identification, Gen Z platform attachment, and Gen Z platform trust all have a

significant positive impact on Platform loyalty (see Table 4).

4 CONCLUSIONS AND DISCUSSION

4.1 Analysis conclusion

The study discovered that The platform participation degree of generation Z NFT has a significant impact on the formation of generation Z platform loyalty. After Gen Z customers and users have committed a certain amount of time and effort into participating in platform activities, their involvement in the target platform has risen steadily. On the one hand, the higher the degree of engagement, the greater the sunk cost. Consumers may find the worth of the platform party in the activities if they exhibit a constant involvement habit. The higher the level of involvement, the more favorable it is for consumption, which is the same as Van and de Rooij's viewpoint [13]. Gen Z's platform enthusiasm has a significant positive impact on the NFT digital collection platform. After the formation of the platform enthusiasm of the generation Z, the warming of platform emotion will further promote the positive behavior of consumers. Generation Z platform recognition has a significant impact on the NFT digital collection platform. The establishment of an emotional tie between customers and the generation Z identification of the group to form the sense of belonging of the platform marks the formation of the emotional bond between consumers and the platform. Once an emotional tie is created with the platform, the features of a higher emotional appeal will create a strong loyalty to the platform.

Gen Z platform attachment marks the further deepening of the relationship between consumers and the platform side from the original understanding relationship to the "dependence relationship" [14] Generation Z platform trust has a large and favorable effect on the loyalty of Generation Z NFT digital collecting platforms. In unclear conditions, customers will still prioritize the purchase or use of a platform based on their sentiments towards it. Trusted platform, customer confidence in the platform is a vital factor that contributes to Generation Z's platform loyalty.

4.2 Research recommendations

With the popularization of Internet use, the relationship between everyone is becoming more and more short-lived or even virtualized. This trend makes more and more people fall into loneliness. The social needs of the Z generation are no exception. As a generation growing up in the Internet era, the generation Z group with stronger emotional appeal have a social demand for virtualization, Gen Z can flaunt their taste with digital collections. The NFT digital collection was launched by China with blockchain digital technology as its competitiveness captures the emotional needs of Generation Z and meets their self-proclaimed social needs, which also provides a reference for existing NFT platforms.

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