International Journal of Economics, Business and Innovation Research
https://e-journal.citakonsultindo.or.id/index.php/IJEBIR
E-ISSN : 2964-0865
IJEBIR

Fandom Consumptive Behavior: Consumerism In Enhypen Photocard Purchases

Yasmin Salza Annabil[1], Zainal Abidin[2] , Muhammad Ramdhani[3]

[1,2,3] Communication Science, Social Science and Political Science, Singaperbangsa Karawang University, Indonesia

Corresponding author: 2210631190113@student.unsika.ac.id

Abstract

The rapid advancement of digital communication technology has transformed social media into a vital instrument for disseminating popular culture and shaping contemporary consumer patterns. Within the Korean Wave (Hallyu) phenomenon, K-Pop fanbases extensively utilize Platform X to interact with idols and engage in the trade of exclusive merchandise, specifically randomized photocards. This study aims to analyze the influence of social media X exposure—operationalized through the dimensions of frequency, duration, and attention—on the consumptive behavior of ENHYPEN fans, specifically followers of the @engenekrw account. Adopting a quantitative correlational survey design grounded in the Stimulus-Organism-Response (S-O-R) model, data was collected from 96 respondents determined via Yamane's formula. Due to the non-normal distribution of the data, hypothesis testing was executed utilizing the non-parametric Spearman Rank correlation method. Findings reveal a statistically significant positive relationship (Sig. 0.000), confirming that higher levels of media exposure correspond to an increased propensity for consumptive behavior in purchasing ENHYPEN photocards. However, the weak correlation coefficient (r_s = .354) suggests that the internal "Organism" stage is highly complex and significantly influenced by various internal and external factors outside the scope of this study. Consequently, while social media X serves as an effective enabler and information provider, it is not the sole determinant of fans' consumptive actions.

Keywords: Consumptive Behavior, Social Media X, K-Pop, ENHYPEN, S-O-R Theory.

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Economics, Business and Innovation Research
https://e-journal.citakonsultindo.or.id/index.php/IJEBIR
E-ISSN : 2964-0865
IJEBIR

INTRODUCTION

Recent advancements in communication technology have emerged as a primary catalyst for social change. The transition from analog to digital systems has generated rapid, pervasive, and real-time impacts. This paradigm shift extends beyond the economic and political spheres; it fundamentally alters human interaction paradigms and engenders novel cultural practices. Contemporary technology transcends its traditional role as a mere communicative utility, evolving into a fundamental medium for cultural expression and dissemination. Consequently, technological advancement plays a pivotal role in the global emergence and proliferation of popular culture (Sukmana & Salviana, 2026). The Korean Wave (Hallyu) phenomenon, or Korean popular culture, has achieved massive global proliferation, including within Indonesia. This terminology encapsulates the profound level of international public interest in Korean culture. Such extensive expansion is significantly bolstered by modern technological advancements, which facilitate the production, distribution, and reproduction of cultural content, enabling its consumption by a global audience (Eva Dinar et al., 2022). The international success of Korean cultural dissemination is by no means coincidental. Rather, it represents a strategic implementation of nation-branding initiatives orchestrated by the South Korean government, which leverages popular culture as a primary instrument to bolster the nation's global image and economic vitality (Abidin et al., 2024).

The rapid progression of the digital era has positioned social media as a critical instrument that shapes consumer behavior patterns. Various platforms, such as X, Line, and Instagram, continue to emerge and evolve, each characterized by its own distinct features and strategic advantages (Afandi et al., 2021). Contemporary technological innovations provide substantial utility in addressing diverse societal needs, particularly within the realm of communication. Consequently, social media has evolved beyond its traditional function as a mere space for interpersonal interaction; it has transitioned into an effective, multifunctional apparatus leveraged for both business management and product marketing (Raissa et al., 2024). In alignment with this multifunctional role, the dynamics of information technology have engendered novel forms of communication, conceptualized as new media, wherein Platform X has emerged as one of the most extensively utilized mediums by the public for both interaction and recreation. Within this context, social media X is highly favored across diverse demographics, including public figures. This phenomenon cultivates novel behavioral patterns wherein society selects Platform X as the primary instrument to foster closer connections, interact within fan

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

communities (fandoms), and rapidly track developments concerning their idols (Dewi et al., 2025).

Currently, K-Pop has established itself as a global cultural phenomenon that transcends the boundaries of mere entertainment, exerting substantial psychological and social impacts on its fan base (Abidin, 2024). The proliferation of these fan communities has been exceptionally expansive in Indonesia, predominantly driven by the younger demographic. These individuals extensively utilize social media X as a platform to simultaneously advocate for and cultivate relationships with their idols, thereby precipitating intense parasocial interactions. The habitual practices of fans—such as disseminating content, participating in trends, and deploying specific hashtags on Platform X—manifest a complex behavioral pattern. Such patterns substantiate that their advocacy is fundamentally rooted in profound emotional engagement with their idols (Aror et al., 2025). Beyond facilitating communicative interactions concerning idol-related discourse, Platform X is concurrently utilized as a pragmatic marketplace for K-Pop merchandise transactions. The real-time update functionality, facilitated by the "latest tweets" tab, enables fans to continuously monitor the global information flow, transcending geographical boundaries. Intriguingly, the elevated consumption rates of these commodities are frequently propelled by fans' intrinsic desires to validate their presence and loyalty, ultimately seeking recognition as authentic fans (Hida & Stefani, 2025).

South Korea's successful domination of the global entertainment industry is inextricably linked to the profound international enthusiasm for K-Pop music. Within this musical ecosystem, the commercialization of an artist's work is predominantly categorized into two primary formats: physical albums and digital albums. Specifically regarding the physical format, the packaging transcends the mere inclusion of a compact disc (CD); it is consistently augmented with a diverse array of exclusive merchandise. These supplementary components typically encompass photobooks, photocards, lyric booklets, mini posters, trading cards, and various other memorabilia, with the specific variations and typologies meticulously tailored to align with each group's unique conceptual framework (Hida & Stefani, 2025). At present, K-Pop photocards have evolved into highly coveted collectible commodities among fans. Fundamentally, these items constitute photographic cards depicting idol group members, which are randomly inserted into the packaging of each physical album (Maisarah et al., 2024). This randomized distribution strategy inherently introduces elements of surprise and uncertainty for consumers. Such dynamics frequently compel fans to engage in repetitive purchasing or

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

to source their desired photocards via Platform X, ultimately precipitating consumptive behaviors (Tanliana & Utami, 2022).

This phenomenon is distinctly evident among K-Pop fans, who readily expend substantial financial resources to complete their idol photocard collections. This highly dedicated practice frequently incurs negative stigma from non-fans, who perceive it as a manifestation of financial extravagance and a squandering of time. Such sentiments are further amplified considering that the primary fan demographic comprises individuals in their teens and early twenties, the majority of whom are secondary or university students. Their lack of financial independence, when coupled with an intense emotional compulsion to purchase, serves as a robust indicator of consumptive behavior (Hidayat et al., 2024).

ENHYPEN constitutes one of the most prominent South Korean idol groups among K-Pop enthusiasts. The group has successfully cultivated a massive fan base, collectively identified as ENGENE, which exhibits robust engagement across social media ecosystems, notably on Platform X, where they have amassed an audience of millions (Amelia et al., 2024). Driven by an escalating popularity that spans demographic cohorts from adolescents to adults, coupled with surging album sales, there has been a significant proliferation in the commerce of merchandise, notably the widely traded photocards. The research population for this study comprises the entire follower base of the @engenekrw Platform X account, who constitute members of the ENHYPEN fan community and are potentially exposed to photocard-related content via this social media ecosystem.

Drawing upon prior literature, a study by (Aldyssa & Sary, 2024) examining the Platform X account @ohmybeautybank demonstrated a significant impact of social media exposure on the consumptive behavior of its followers. The primary point of divergence between that study and the current research lies in the scope of analysis. This study specifically highlights the comprehensive impact of information exposure on Platform X, focusing particularly on the interactions and content appearing on the timelines of @engenekrw followers.

To unpack this phenomenon, this study is anchored in the Stimulus-Organism-Response (S-O-R) model as its grand theory. According to Hovland (1953), this theory posits that consumer behavior is formed through a continuous, sequential process. This sequence initiates with a drive or stimulus from the external environment, which is subsequently processed internally by the individual (the organism) through the engagement of emotional and psychological dimensions. Ultimately, this interconnected process elicits a concrete action, manifesting as the consumer's response (Herliani et al., 2025). Furthermore, to specifically gauge the strength of this stimulus, the present study

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

employs Media Exposure Theory as its applied theory. This theory posits that exposure to media messages—operationalized through frequency, duration, and attention—can exert distinct effects on the audience's cognitive, affective, and behavioral domains (Rakhmat, 2007). Consequently, this study aims to measure the extent to which social media X exposure influences the consumptive behavior related to Enhypen photocard purchases among followers of the @engenekrw account.

METHODOLOGY

This study employs a quantitative methodology utilizing a correlational survey design to delineate the relationships and impacts occurring among the research variables (Sugiyono, 2013). This research applies a quantitative method grounded in a positivistic paradigm to examine a sample drawn from a specific population. Data collection was conducted using a standardized questionnaire instrument, the results of which were subsequently evaluated through objective statistical calculations to address the established hypotheses (Adil et al., 2023). The scope of this research focuses on social media exposure (as the independent variable) and consumptive behavior (as the dependent variable) within the context of ENHYPEN photocard purchases. The research was executed online, utilizing Platform X for the distribution of the questionnaire. The primary tools and materials employed for data collection and processing included digital forms (Google Forms) for the questionnaire and IBM SPSS 27 statistical software for data analysis.

The target population for this study comprised the entirety of the 205 accounts following the @engenekrw X account. The sampling process was implemented in two primary stages. The initial stage involved distributing a screening questionnaire based on purposive sampling methods to filter participants according to established criteria. From this stage, 126 respondents were deemed eligible, constituting the sampling frame. In the second stage, to determine a representative final sample size from this cohort, Yamane's formula was applied with a 5% precision level. Based on these calculations, the final research sample size was established at 96 respondents. The purposive sampling criteria established for this study were as follows: (1) being an ENHYPEN fan; (2) aged between 15 and 30 years; (3) being an active user of social media X (having viewed/read, liked, retweeted, or replied within the past month); (4) having been exposed to information regarding ENHYPEN photocard products or transactions on the X timeline; and (5) having completed at least two official ENHYPEN photocard purchase transactions within the last six months, with a minimum transaction value of IDR 50,000. To acquire primary data,

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

the researchers distributed a Likert-scale-based questionnaire, while supplementary information was obtained through a literature review.

The operational definitions in this study are divided into two primary variables. Variable X (Social Media Exposure) was measured across three dimensions based on Media Exposure Theory: frequency, duration, and attention (Rakhmat, 2007) to photocard content. Meanwhile, Variable Y (Consumptive Behavior), according to Lina and Rosyid (as cited in Fransisca & Erdiansyah, 2020), was measured utilizing purchasing indicators based on impulsive buying, extravagance, and wasteful buying. As an initial step in data processing, the researchers evaluated the instrument's feasibility by conducting validity and reliability tests to ensure the quality of the research questionnaire. Subsequently, an analysis prerequisite test, specifically a normality test, was conducted. Given that the prerequisite test results indicated the research data did not fulfill the normality assumption criteria, the hypothesis testing was consequently adapted utilizing non-parametric statistical instruments. The specific analytical tool selected to examine the significance of the relationship between these variables was the Spearman Rank correlation.

RESULTS AND DISCUSSION

The data collection process for this study was executed via the administration of questionnaires, yielding a final sample of 96 respondents, 100% of whom fell within the 15 to 30 age cohort. Furthermore, all respondents fulfilled the requisite sampling criteria: being active users of Platform X and having executed a minimum of two official ENHYPEN photocard purchasing transactions within the preceding six months. The data analysis procedure commenced with an assessment of instrument quality. Based on the computational results, all item statements pertaining to the Social Media X Exposure and Consumptive Behavior variables were deemed valid (*r*-count > *r*-table). The critical *r*-table value was established utilizing a five percent significance level (0.05) and degrees of freedom (df) calculated via the *n*-2 formula. Given a pilot study sample size of 20 individuals, the computed degrees of freedom equaled 18, thereby establishing a critical threshold reference value of 0.423.

Table 1. Validity Test Results for Social Media X Exposure (Variable X)

	Question	R Count	R Table	Information
	1	0,791		VALID
	2	0,730		VALID

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

Variable X	3	0,661	0,423	VALID
	4	0,661		VALID
	5	0,612		VALID
	6	0,701		VALID
	7	0,623		VALID
	8	0,816		VALID
	9	0,738		VALID
Variable Y	10	0,848	0,423	VALID
	11	0,706		VALID
	12	0,659		VALID
	13	0,816		VALID
	14	0,725		VALID
	15	0,820		VALID
	16	0,849		VALID
	17	0,878		VALID
	18	0,841		VALID

Data collected from 20 pilot study subjects indicate that every questionnaire item in the instrument meets the validity criteria, as the calculated *r*-values exceed the critical *r*-table threshold of 0.423. Subsequently, reliability testing was performed by examining the Cronbach's Alpha coefficient, which serves as the primary parameter for determining the reliability of a measurement tool when the value exceeds 0.60. The reliability test results revealed Cronbach's Alpha values of 0.870 for the Social Media X Exposure variable and 0.925 for the Consumptive Behavior variable. Since both results are greater than 0.60, each instrument in this study is confirmed to be reliable and exhibits strong internal consistency for implementation.

The initial stage prior to correlation hypothesis testing involves conducting analysis prerequisite tests on the gathered data. This procedure is critical for identifying the most suitable correlation technique to be applied. In practice, the testing of basic assumptions—encompassing normality and linearity tests—was executed utilizing SPSS software.

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Economics, Business and Innovation Research
https://e-journal.citakonsultindo.or.id/index.php/IJEBIR
E-ISSN : 2964-0865
IJEBIR

Table 1. Classical Assumption Test Results

	Normality Significance One-Sample Kolmogorov-Smirnov	Deviation from Linearity
Variable X	< .001	.027
Variable Y	< .001	.027

Based on the One-Sample Kolmogorov-Smirnov normality test, the significance values for both variables yielded probability figures below 0.001, which is less than the 5% significance level. This indicates that both the Social Media X exposure and consumptive behavior variables are not normally distributed. Furthermore, linearity testing demonstrated that the two variables do not maintain a linear relationship, as the "deviation from linearity" significance value was 0.027, falling below the α threshold of 0.05. Consequently, based on these classical assumption tests, it was determined that the hypothesis testing would proceed using a non-parametric correlation method, specifically the Spearman Rank correlation.

Table 3. Spearman Rank Correlation Test Results

Variable		Social Media Exposure (X)	Consumer Behavior (Y)
Social Media Exposure (X)	*Correlation Coefficient*	1.000	0.354
	Sig. (2-tailed)	.	< .001
	N	96	96
Consumer Behavior (Y)	*Correlation Coefficient*	0.354	1.000
	Sig. (2-tailed)	< .001	.
	N	96	96

Referring to the Spearman Rank correlation output table, the probability value (Sig. 2-tailed) is recorded at .000. Given that this result is below the 5% error tolerance threshold ($p < .05$), these findings confirm a statistically significant correlation between social media X exposure and the propensity for consumptive behavior. Additionally, the correlation coefficient of .354 indicates that the nature of the relationship between

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

variables is positive (unidirectional), with the strength of the correlation categorized as weak.

The results of this study indicate a positive and significant relationship between exposure to social media X and consumptive behavior in the purchase of ENHYPEN photocards. These findings substantiate the relevance of the Stimulus-Organism-Response (S-O-R) theory in explaining communication dynamics on Platform X. Timelines that intensively feature visual information, pricing, and testimonials regarding photocards function as effective stimuli. This stimulus is subsequently internalized by followers of the @engenekrw account (the Organism) who possess a high interest in ENHYPEN as fans, thereby triggering an internal drive to engage in purchase transactions as a form of Response. Although the relationship is statistically significant (Sig. 0.000), the correlation coefficient of 0.354 indicates that the strength of the association is categorized as weak. This provides an analytical insight that the processes within the Organism stage of the S-O-R model are notably complex. Despite respondents being frequently exposed to content on the Platform X timeline (high stimulus), the resulting consumptive behavior does not necessarily become extreme. The weak correlation suggests the presence of moderating variables or other factors that impede the transformation of a stimulus into a purchasing response.

Various studies indicate that fans' purchasing habits are predominantly influenced by factors beyond social media. Although social media serves as an enabler, the underlying drivers of this consumptive behavior are rooted in psychological, social, cultural, and environmental factors, as well as the personal interests of the fans themselves (Aini et al., 2026). Consistent with the findings of (Tanliana & Utami, 2022), photocard collection behavior on Platform X is driven by emotional satisfaction; however, this study demonstrates that the frequency of content exposure serves merely as an initial catalyst. The final purchasing decision remains highly contingent upon an individual's personal motivation and economic capacity at that time. Consequently, exposure to social media X functions as an information provider and a reinforcer of desire, rather than the sole determinant in the formation of consumptive behavior. Based on the Spearman Rank correlation results, a significant and positive relationship was identified, proving that social media X exposure exerts an influence on consumptive behavior. This significant relationship indicates that such exposure is a contributing factor in shaping these consumptive patterns.

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

CONCLUSION

This study concludes that there is a positive and significant influence of social media X exposure on the consumptive behavior of @engenekrw followers. This conclusion is supported by correlation test results yielding a significance value of .000 and a correlation coefficient (r_s) of .354. Consequently, the research hypothesis, which posits an effect of Variable X on Variable Y, is accepted. This indicates that a higher level of media exposure—encompassing frequency, duration, and attention—corresponds to an increased tendency toward consumptive behavior in purchasing ENHYPEN photocards among @engenekrw followers. However, the strength of this relationship is categorized as weak (.354), indicating that social media exposure provides a modest contribution compared to other internal and external factors not addressed in this research.

REFERENCES

Abidin, Z. (2024). Budaya Populer Korea Selatan: Nation Branding Melalui K-Drama, K-Movie Dan K-Pop. Solok, Sumatera Barat: Mafy Media Literasi Indonesia.

Abidin, Z., Mayasari, M., Utamidewi, W., Tayo, Y., & Nursanti, S. (2024). Korean Popular Culture as A 'Lethal Weapon': A Journey Toward Nation Branding of The Republic of Korea. JURNAL ILMU SOSIAL, 23(1), 80–105. https://doi.org/10.14710/jis.23.1.2024.80-105

Adil, A., Liana, Y., Mayasari, R., & Sintia Lamonge, A. (2023). Metode Penelitian Kuantitatif Dan Kualitatif: Teori Dan Praktik. Get Press Indonesia.

Afandi, A., Samudra, J. P., Sherley, S., Veren, V., & Liang, W. (2021). Pengaruh Endorsement Influencer Instagram Terhadap Keputusan Pembelian pada Generasi Z. Komunikologi: Jurnal Pengembangan Ilmu Komunikasi Dan Sosial, 5(1), 15. https://doi.org/10.30829/komunikologi.v5i1.9272

Aini, F., Rahmah, A., & Aeni, N. (2026). Sikap Konsumtif Sebagai Budaya Populer Dan Komunikasi Antar Budaya Dalam Platform Digital. Linimasa : Jurnal Ilmu Komunikasi, 9(1), 47–61. https://doi.org/10.23969/linimasa.v9i1.40663

Aldyssa, W., & Sary, K. A. (2024). Pengaruh Terpaan Media Sosial Twitter @Ohmybeautybank Terhadap Perilaku Konsumtif Followers. Jurnal JTIK (Jurnal Teknologi Informasi Dan Komunikasi), 8(3), 760–770. https://doi.org/10.35870/jtik.v8i3.2351

Amelia, C. P., Abidin, Z., & Poerana, A. F. (2024). Konser Virtual Pada Weverse dan Kepuasan Menonton Bagi Fandom Enhypen (Engene) di Media Sosial X.

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

Innovative: Journal Of Social Science Research, 4(4), 4829–4839. https://doi.org/10.31004/innovative.v4i4.13303

Aror, T. C., Mandang, J. H., & Kapahang, G. L. (2025). Pengaruh Keterikatan Emosional Terhadap Kecenderungan Fanatisme Pada Penggemar K-Pop di Media Sosial X Indonesia. Innovative: Journal Of Social Science Research, 5(3), 482–497. https://doi.org/10.31004/innovative.v5i3.19032

Dewi, R. N., Abidin, Z., Ema, Murni Kaddi, S., & Fahrianoor. (2025). Aktivitas Mendukung Virtual Fan Account Fandom Nct Dalam Bermedia Sosial X. Jurnal Netnografi Komunikasi, 3(2), 126–137. https://doi.org/10.59408/jnk.v3i2.50

Eva Dinar, R., Abidin, Z., & Rifai, M. (2022). Fan Culture dan Perkembangan Kreativitas Remaja KPopers. Jurnal Politikom Indonesiana, 7(1), 113–129. https://doi.org/10.35706/jpi.v7i1.6863

Fransisca, C., & Erdiansyah, R. (2020). Media Sosial dan Perilaku Konsumtif. Prologia, 4(2), 435. https://doi.org/10.24912/pr.v4i2.6997

Herliani, N., Putri, S. M., Puspita Sari, W. L., Raharja, M. C., & Meliana, R. (2025). Analisis Perilaku Impulse Buying Konsumen Muslim Di Purwokerto Pada Platform Digital Berdasarkan Teori Stimulus-Organisme-Respons (Sor). Jurnal Sains Student Research, 4(1), 228–235. https://doi.org/https://doi.org/10.61722/jssr.v4i1.7762

Hida, D., & Stefani, L. (2025). Budaya Populer dan Konsumerisme : Studi Netnografi terhadap Perilaku Konsumtif Fandom ENGENE dalam Pembelian Merchandise. 13(1), 78–95. https://doi.org/10.37631/populika.v13i1.1863

Hidayat, N. A., Laras, D., Ritonga, H. K. K., & Fariha, N. F. (2024). Pengaruh Fangirling Kpop Idol Terhadap Motivasi Belajar Mahasiswa S1 di Universitas Mercu Buana Yogyakarta Kampus 3. JKOMDIS : Jurnal Ilmu Komunikasi Dan Media Sosial, 4(1), 06–12. https://doi.org/10.47233/jkomdis.v4i1.1415

Maisarah, F., Abidin, Z., & Teguh, M. P. (2024). Konstruksi Makna Kolektor Photocard (Studi Fenomenologi Mengenai Makna, Motif, dan Pengalaman Komunikasi Kolektor Photocard K-Pop). Da'watuna: Journal of Communication and Islamic Broadcasting, 4(2), 503–512.

Raissa, N. Z., Barkah, C. S., Sukoco, I., & Novel, N. J. A. (2024). Analisis Strategi Endorsement Influencer pada Brand X di Sosial Media. JKOMDIS : Jurnal Ilmu Komunikasi Dan Media Sosial, 4(2), 583–589. https://doi.org/10.47233/jkomdis.v4i2.1860

Rakhmat, J. (2007). Psikologi Komunikasi. Remaja Rosdakarya.

Sugiyono. (2013). Metode Penelitian Kuantitatif Kualitatif Dan R&D (Cetakan Ke).

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

ALFABETA, CV.

Sukmana, O., & Salviana, V. (2026). Behind The Glamour: Identitas Sosial Baru K-Popers. UMM Press.

Tanliana, D., & Utami, L. S. S. (2022). Perilaku Konsumtif Penggemar Korean Wave di Twitter (Studi Tentang Fenomena Koleksi Photocard K-Pop). Koneksi, 6(1), 184. https://doi.org/10.24912/kn.v6i1.15549

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.